NEBRASKA

DEPT. OF ENVIRONMENT AND ENERGY

Onsite Wastewater Treatment Systems

Title 124, General Permits, Forms and Reference Materials

Form #23-017 **Ver. 02.2024**

ONSITE WASTEWATER TREATMENT SYSTEMS

Title 124, General Permits, Forms and Reference Materials

NUMERICAL TABLE OF CONTENTS

TITLE 124 – ONSITE WASTEWATER TREATMENT SYSTEMS
Effective June 27, 2022 Pete Ricketts, Governor

STATUTES

GENERAL PERMIT SEPTIC TANK AND SUBSURFACE LEACH FIELD
Signed 6/27/2022

CHAPTER	SUBJECT
F.	Tank Construction
G.	Tank Design and Placement
H.	Tank Capacity
I.	Percolation Tests
J.	Site Acceptability Based on Soil Conditions
K.	Trench and Bed Soil Absorption Systems
L.	Floor Drains
M.	Maintenance of Septic Systems
N.	Waste Prohibitions

GENERAL PERMIT - HOLDING TANK
Signed 6/27/2022

CHAPTER	SUBJECT
I.	Definitions
II.	General Conditions
III.	Specific Conditions
A.	Site Evaluation
B.	Design Flow
C.	Tank Capacity
D.	Setback Distances
E.	Tank Construction
F.	Tank Design and Placement
G.	Floor Drains

GENERAL PERMIT - WASTEWATER LAGOON
Signed 6/27/2022

CHAPTER	SUBJECT
I.	Definitions
II.	General Conditions
III.	Specific Conditions
A.	Sire Evaluations
B.	Design Flow
C.	Setback Distances
D.	Design and Evaluation
E.	Sizing
F.	Lagoon Construction
G.	Building Sewer Line
H.	Maintenance
I.	Floor Drains
J.	Closure of a Wastewater Lagoon

GENERAL PERMIT - MOUND SYSTEM
Signed 6/27/2022

Forms

Reference Sheets

NEBRASKA DEPARTMENT OF ENVIRONMENT AND ENERGY

TITLE 124

ONSITE WASTEWATER TREATMENT SYSTEMS

EFFECTIVE DATE JUNE 27, 2022

PETE RICKETTS

GOVERNOR

THIS PAGE LEFT INTENTIONALLY BLANK

NEBRASKA DEPARTMENT OF ENVIRONMENT AND ENERGY
TITLE 124 – ONSITE WASTEWATER TREATMENT SYSTEMS

ALPHABETICAL TABLE OF CONTENTS

NEBRASKA DEPARTMENT OF ENVIRONMENT AND ENERGY
TITLE 124 – ONSITE WASTEWATER TREATMENT SYSTEMS

NUMERICAL TABLE OF CONTENTS

NEBRASKA ADMINISTRATIVE CODE

TITLE 124 – Onsite Wastewater Treatment Systems

Chapter 1 – DEFINITIONS

001 "Authorized representative" means:

001.01 In the case of a corporation, a principal executive officer in charge of a principal business function and of at least the level of vice president;

001.02 In the case of a limited liability company, a manager, or a person as described in Neb. Rev. Stat. § 21-2606 (1)(g), or a principal executive officer;

001.03 In the case of a partnership, a general partner;

001.04 In the case of a sole proprietorship, the proprietor; or

001.05 In the case of a municipal, state or other public entity, a principal executive officer or ranking elected official.

002 "Baffle" means a partition installed in a septic tank for proper operation of the tank and to provide maximum retention of solids, and includes sanitary tees.

003 "Bed or seepage bed" means an excavated or below-grade soil absorption system containing treatment media and an effluent distribution system where the treatment media is wider than 36 inches where pipes are used for distribution or wider than five feet where chambers are used for distribution. The maximum width of a bed is limited to 20 feet.

004 "Bedrock" means solid rock exposed at the surface of the earth or overlain by unconsolidated material.

005 "Bedroom" means any room within a dwelling that might reasonably be used as a sleeping room.

006 "Bentonite" means high swelling clay derived from a chemically altered volcanic ash.

007 "Blackwater" means wastes carried off by toilets, urinals, and kitchen drains. Blackwater is wastewater for the purposes of these regulations.

008 "Building drain" means that portion of the lowest horizontal piping of a drainage system which receives the wastewater discharge from within the walls of the building and conveys it to the building sewer beginning 30 inches outside the building footings.

009 "Building sewer" means that part of the drainage system extending from the end of the building drain to a treatment system or other approved point of disposal.

010 "Cesspool" means an underground pit into which raw household wastewater has or can discharge and from which the liquid has or can seep into the surrounding soil. A cesspool is a prohibited system for the purposes of these regulations.

011 "Chamber or chambers" means a pre-formed manufactured conduit with an open-bottom configuration used to distribute effluent in a soil absorption system.

012 "Closure or close" means the proper cleanup and decommissioning of an onsite wastewater treatment system after its use has been discontinued.

013 "Community water supply system" means a public water supply system that (a) serves at least 15 service connections used by year-round residents of the area served by the system or (b) regularly serves at least 25 year-round residents.

014 "Construction" means the installation of an onsite wastewater treatment system or the replacement, reconstruction, alteration, modification, expansion, or closure of an existing system including the installation of required wastewater lagoon fencing. Construction includes excavation or similar activity related to the installation, replacement, reconstruction, alteration, modification, or expansion of an onsite system, or closure of an onsite system. For the purposes of subdivision review and approval, “construction” means physical activity on a development area including the building of roads, cut and fill, grading, installation of utilities, construction of any foundations, buildings or structures for the development, and construction work on drainage, piping, trenching, lighting, foundations, or other site activities. Construction does not include siting, soil percolation testing, or soil boring.

015 "Depth marker" or “depth gauge” means a device used to measure the liquid level present in a septic tank, wastewater lagoon, or other onsite wastewater treatment system.

016 "Design flow" means the maximum volume of wastewater estimated to be generated by a dwelling or non-dwelling facility in a twenty-four-hour period. It includes both a typical operating capacity and a surge capacity for the system during periodic heavy use events. The sizing and design of the onsite wastewater treatment system components are based on the design flow.

017 "Development Area" means an area of land in the State of Nebraska subdivided into lots where onsite wastewater treatment systems will be used. Such subdivision will include the dividing of an area of land into smaller areas to be sold, transferred, leased, rented, or allowed to be used for the purpose of constructing or locating a dwelling or non-dwelling facility that generates wastewater.

018 "Direct supervision" means the person overseeing the work of others is physically present on the site where the work is being done and has control over, responsibility for, and professional knowledge of the work being done.

019 "Distribution box" means a watertight box that receives effluent from a wastewater treatment component and distributes the flow by gravity to each individual section of a soil absorption system at a rate proportional to the bottom surface area of that section.

020 "Distribution system, distribution piping, or distribution line" means piping or other devices which distribute effluent within a soil absorption system either by gravity (gravity distribution system) or pressure (pressure distribution system).

021 "Domestic septage or septage" means the liquid or solid material removed from a septic tank, holding tank, cesspool, portable toilet, Type III marine sanitation device, or similar treatment works that receives only domestic wastewater. Domestic septage does not include liquid or solid material removed from a septic tank, holding tank, cesspool, portable toilet, or similar treatment works that receives either commercial wastewater or industrial wastewater and does not include grease removed from a grease trap at a restaurant. Domestic septage does not include wastewater containing high strength disinfectants, biological inhibitors, or deodorants or similar chemicals such as those used in camper waste tanks, laboratories, medical or veterinary facilities, or industrial facilities.

022 "Domestic waste or domestic wastewater" means human body waste and household type wastes including bath and toilet wastes, household laundry wastes, household kitchen wastes, and other similar wastes from a dwelling or a non-dwelling facility. Domestic waste or wastewater does not include drainage from roofs; footing or foundation drains; process waste from any industrial, agricultural, or commercial establishment; automotive or industrial chemicals or petroleum products; kitchen waste or wastewater from a restaurant or food preparation facility; water carrying animal waste or commercial process water or wastewater; or similar waste.

023 "Dose or dosing" means the use of a pump or siphon device to convey intermittent discharges of effluent by gravity or pressure distribution to a soil absorption system. Dosing is characterized by brief periods of high flow followed by long periods of no flow.

024 "Dosing chamber or dosing tank" means a watertight receptacle containing a pump or siphon device and that retains effluent until it is intermittently pumped or siphoned to the distribution system or soil absorption system.

025 "Drop box" means a watertight box that receives the discharge of effluent from a septic tank and provides serial or sequential distribution of effluent by gravity to each soil absorption system trench where such trenches are installed at progressively lower elevations.

026 "Dry well" means an excavation or structure (other than a soil absorption system meeting these regulations) constructed above the water table that has or can receive waste or wastewater, and from which the waste or wastewater has or can seep or discharge into the surrounding soil. A dry well is a prohibited system for the purposes of these regulations.

027 "Dwelling" means a building, structure, or place used or intended to be used for human occupancy as a single family or multi-family residence and which generates domestic wastewater. If any portion of the wastewater generated at such a building, structure or place is a non-domestic wastewater, the facility will be considered a non-dwelling facility.

028 "Effluent" means the liquid flowing out of a septic tank or other treatment component of an onsite wastewater treatment system.

029 "Encroachment" means an intrusion on a required setback distance.

030 "Endorsement" means a qualification added to a certificate that authorizes the certificate holder to perform special procedures that require advanced levels of skills or training.

031 "Failed or Failing" means an unauthorized discharge of effluent or wastewater: on the surface of the ground; or to a cesspool, seepage pit, dry well, or leaching pit; or to a soil absorption system with less than four feet to groundwater or other limiting soil characteristics; or which threatens to cause pollution of any air, water, or land of the State; or which threatens public health.

032 "Fill" means soil, rock, gravel, or waste material which has been placed over the original soil or bedrock and is characterized by a lack of distinct horizons or color patterns as found in naturally developed, undisturbed soils.

033 "Filter material or filter media or treatment media" means washed-gravel, rock, crushed stone, slag, clean gravel, or tire chips, any of which that range in size from one-quarter inch to 2½ inches. The filter media will be free of clay, silt, rubber crumbs, and other fine material. Flat slabs of tire are not acceptable for use as tire chips. Crushed stone will be durable and non-calcareous.

034 "Freeboard" means the vertical distance between the design full liquid level and the level at which liquid will overflow from a lagoon.

035 "Gravelless distribution system" means a distribution pipe, chamber, or other conduit designed for use in a soil absorption system without filter material.

036 “Gravity Distribution or Gravity Dosing” means to intermittently discharge effluent using the force of gravity to distribute effluent to a soil absorption system.

037 "Graywater" means all domestic waste excluding blackwater and including bath, lavatory, laundry, and sink waste except kitchen sink waste. Graywater is wastewater for the purposes of these regulations.

038 "Grease trap or grease trap tank or grease interceptor" means a watertight tank designed for the collection and retention of fats, oils, and grease, and which is accessible for periodic removal of the contents.

039 "Groundwater" means water occurring beneath the surface of the ground that fills available openings in rock or soil materials such that they may be considered saturated.

040 “Header Pipe” means a distribution line that evenly distributes effluent to each infiltration line

041 "Holding tank" means a tank for the storage of wastewater until it can be transported to a point for proper disposal.

042 "Industrial waste" means wastewater not otherwise defined as domestic wastewater, including the runoff and leachate from areas that receive pollutants associated with industrial or commercial storage, handling, or processing.

043 "Influent" means wastewater flowing into an on-site wastewater treatment system component or device.

044 "Inspecting" means the practice of examining the components of an onsite wastewater treatment system, the operational condition of the system, or the site conditions for the purpose of providing verification of compliance with this Title. These practices are not considered inspecting when performed by a Master or Journeyman Pumper for the purpose of pumping an onsite wastewater treatment system or when performed by a Master or Journeyman Installer for the installation, modification, alteration, or repair of an onsite wastewater treatment system or for an evaluation conducted for those purposes.

045 "Inspector" means a certified professional holding a certificate by examination, or a hardship certificate issued by the Department in the category of Inspector.

046 "Journeyman Installer" means a certified professional holding a certificate by examination or a hardship certificate issued by the Department in the category of Journeyman Installer.

047 "Journeyman Pumper" means a certified professional holding a certificate by examination or a hardship certificate issued by the Department in the category of Journeyman Pumper.

048 "Layout" means the practice of determining wastewater design flows and loadings, selecting system type, sizing and selecting system components, or locating system components

for the purpose of construction, reconstruction, alteration or modification of an onsite wastewater system.

049 "Leaching pit" means an underground pit into which waste or wastewater has or can discharge and from which the liquid has or can seep into the surrounding soil with little or no treatment. A leaching pit is a prohibited system for the purposes of these regulations.

050 "Liner" means the material or substance used to line the bottom of a wastewater lagoon, sand filter, wetlands cell, or other onsite wastewater treatment system so that percolation of liquids through the soil is controlled.

051 “Loamy sand” means a soil material containing 70 to 85 percent sand, up to 30 percent silt, and up to 15 percent clay.

052 “Lot size” means the area of a lot excluding all area below the normal high water level of any surface water feature and all area within the right-of-way or easement of a street, road, or access easement.

053 "Master Installer" means a certified professional holding a certificate by examination or a hardship certificate issued by the Department in the category of Master Installer.

054 "Master Pumper" means a certified professional holding a certificate by examination or a hardship certificate issued by the Department in the category of Master Pumper.

055 "Mound system" means an onsite wastewater treatment system that includes a septic tank for primary treatment, an effluent pumping system, and a soil absorption system that includes a pressurized effluent distribution system within a prescribed layer of rock or acceptable treatment media that is elevated above the original ground surface by a layer of clean sand. The distribution system is pressure dosed to provide uniform distribution of effluent over the entire layer of treatment media, and treatment media is capped by a protective layer of geotextile fabric (to prevent fine material intrusion from the soil), soil, and grass.

056 “Native soil” means soil that is naturally occurring, formed by normal geologic and biological processes, which is characterized by the distinct soil horizons or color patterns found in naturally developed, undisturbed soil.

057 "Non-community water supply system" means any public water supply system that is not a community water system.

058 “Non-dwelling facility” means a building, structure, place of business, place of gathering, or waste collection system which is not a dwelling and which generates wastewater.

059 "Onsite wastewater treatment system" means any system of piping, treatment devices, or other appurtenances that convey, store, treat, or dispose of domestic or non-domestic wastewater,

but not including wastewater from a livestock waste control facility, on the property where it originates, or on nearby property under the control of the user, which system is not connected to a public sewer system. An onsite wastewater treatment system begins at the end of the building drain. A system using a lagoon is limited to a maximum design flow of 1,000 gallons per day to be considered an onsite wastewater treatment system. The word "onsite" used in this Title is equivalent to the word "on-site".

060 "Percolation rate" means the rate, usually expressed in minutes per inch or mpi, which is obtained from soil percolation tests conducted to help determine the amount of soil absorption area required for a soil absorption system.

061 "Percolation test" means the determination of the suitability of an area for subsurface wastewater effluent disposal by a standardized test of the rate at which the undisturbed soil in an excavated pit or hole of standard size will absorb liquid per unit of surface area.

062 "Plastic limit" means the water content where soil transitions between brittle and plastic behavior characterized by the point at which a thread of soil begins to crumble when rolled between hands to a diameter of one-eighth inch.

063 "Pollution" means the man-made or man-induced alteration of the chemical, physical, biological, or radiological integrity of water of the State.

064 "Private well" means a well which provides water supply to less than 15 service connections and regularly serves less than 25 individuals.

065 “Pressure distribution or pressure dosing” means the use of a pump to intermittently discharge effluent under positive pressure through a network of piping designed to evenly distribute the effluent throughout a soil absorption system.

066 "Professional Engineer or P.E." means a person who is licensed as a professional engineer by the Nebraska Board of Engineers and Architects.

067 “Professional development hour or PDH” means at least 60 minutes spent in Department approved educational activity.

068 "Public water supply system" means a water supply system for providing the public with water for human consumption through pipes or other constructed conveyances, if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days per year. This definition will include:

068.01 Any collection, treatment, storage, and distribution facilities under control of the operator of such system and used primarily in connection with such system, and

068.02 Any collection or pretreatment storage facilities not under such control, which are used primarily in connection with such system.

069 “Pump tank” means a watertight container with a capacity over 50 gallons which houses a pump or pump unit and associated appurtenances used to convey effluent or sewage. The capacity of a pump tank is measured at the normal high (pump start) operating level. The capacity of a tank housing a pump or used as a pump tank is not considered part of the treatment volume required for a septic tank for the purposes of these regulations.

070 “Pump chamber or pump basin” means a watertight container with a capacity of 50 gallons or less and which houses a float or liquid level activated pump and associated appurtenances used to convey sewage or effluent. The capacity of a pump chamber is measured at the normal high (pump start) operating level. The capacity of a chamber housing a pump or used as a pump basin is not considered part of the treatment volume required for a septic tank and is not subject to tank setbacks for the purposes of these regulations.

071 "Pumping" means the practice of maintaining septic tanks, grease trap tanks, holding tanks, and any other components of onsite wastewater systems through the removal, transportation, and disposal of accumulated liquid and solid wastes.

072 "Registered Environmental Health Specialist or REHS" means a person who has the educational requirements and has had experience in the field of environmental sanitation required by Nebraska Revised Statutes §71-3703 and is registered with the Nebraska Board of Registration for Environmental Health Specialists in accordance with Nebraska Revised Statutes §71-3702 through §71-3715.

073 "Repair" means the correction of a mechanical, electrical, or minor structural defect in an existing onsite wastewater system component such as, but not limited to, sealing a crack in a tank lid, repairing or replacing a tank baffle or access manhole riser, repairing or replacing a pump or electrical switch, leveling a distribution box, replacing a building sewer pipe, or replacing a cracked pipe between the septic tank and soil absorption system. Repair does not include replacement, reconstruction or modification of a tank or soil absorption system; extension or enlargement of a soil absorption component and system; replacement of a distribution pipe; or repair or replacement of a metal or concrete block tank.

074 "Sand" means a soil material composed by weight of at least 90 percent of soil particles ranging in size between 0.05 and 2.0 mm or 0.002 inches and 0.08 inches.

075 "Sandy soil" means the soil having the following textures: sands, fine sands, loamy fine sands, and loamy very fine sands.

076 "Seepage pit" means an excavation or structure constructed below or partially below the water table into which waste or wastewater has or can discharge and from which the waste or

wastewater has or can seep into the surrounding saturated soil. A seepage pit is a prohibited system for the purposes of these regulations.

077 "Septic system" means an onsite wastewater treatment system that has a septic tank for primary treatment and a trench or bed soil absorption system for secondary treatment of wastewater.

078 "Septic tank" means a watertight covered receptacle designed and constructed to receive wastewater from a building sewer, attenuate flows, store digested solids through a period of detention to allow settleable and floating solids to separate from liquids, allow digestion of organic matter by anaerobic bacteria, and allow the clarified liquid to discharge for additional treatment and final dispersal to a soil absorption system.

079 "Sewage" means any water carrying domestic waste exclusive of footing and roof drainage, from any industrial, agricultural, or commercial establishment or any dwelling or any other structures. Domestic waste includes but is not limited to liquid waste produced by bathing, laundry, cooking operations, and liquid waste from toilets and floor drains and specifically excludes animal waste and commercial process water.

080 "Site" means the area bounded by the dimensions required for the proper location of the soil absorption system.

081 "Siting" means the practice of the investigation, examination, and reporting of design-controlling physical characteristics of an area at which an onsite wastewater system is to be constructed, reconstructed, altered, or modified; including, but not limited to topography, drainage, landscape position, soil evaluation, location and type of wells, water lines, property lines, foundations, and surface water features.

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

083 "Sludge" means the accumulated settled solids deposited from wastewater and containing water to form a semi-liquid mass.

084 "Soil absorption system" means a drainfield, leaching area, or seepage bed, including the effluent application or distribution system used for the soil based dispersal and treatment of wastewater or effluent. The soil absorption system includes the infiltrative soil surface in the absorption trench, the undisturbed soil between and around the trenches, and a final cover of suitable soil to stabilize the completed installation, support vegetative growth and shed runoff. The soil absorption system is the part of the onsite wastewater treatment system that uses the soil to further treat and dispose of effluent from the onsite wastewater treatment system in a manner that does not result in a point source discharge and does not create a nuisance, health hazard, or ground or surface water pollution.

085 "Soil Evaluation" means the practice of the investigation, examination, testing, and reporting of design-controlling characteristics of the soil and subsurface features at an area at which an onsite wastewater soil absorption system is to be constructed, reconstructed, altered, or modified; including, but not limited to soil type, structure, permeability, absorption capacity, and percolation rate, and the depth to seasonal high groundwater, bedrock, or other subsurface barrier layers.

086 "Soil Evaluator" means a certified professional holding a certificate by examination or a hardship certificate issued by the Department in the category of Soil Evaluator.

087 "Subdivision" means the division of a lot, tract, or parcel of land into two or more lots, sites, or other divisions of land for the purpose, whether immediate or future, of ownership or building development, except that the division of land will not be considered to be a subdivision when the smallest parcel created is more than 10 acres in area. For the purposes of this regulation, the term “subdivision” includes the dividing of an area of land into smaller areas to be sold, transferred, leased, rented, or allowed to be used for the purpose of constructing or locating a dwelling or non-dwelling facility that generates wastewater.

088 "Surface waters" means all waters within the jurisdiction of this state, including all streams, lakes, ponds, impounding reservoirs, marshes, wetlands, watercourses, waterways, springs, canal systems, drainage systems, and all other bodies or accumulations of water, natural or artificial, public or private, situated wholly or partly within or bordering upon the state. Impounded waters in this definition do not include areas designated by the Department as wastewater treatment or wastewater retention facilities or irrigation reuse pits.

089 "Tank" means a watertight structure or container used to hold wastewater for such purposes as aeration, dilution, disinfection, equalization, mixing, sedimentation, storage, collection for transport, treatment, or addition of chemicals.

090 "Trench or absorption trench” means an excavation containing filter material and an effluent distribution system used for the distribution of effluent in a soil absorption system.

091 "Wastewater" means liquid and water borne wastes from a dwelling or non-dwelling facility. Wastewater includes both blackwater and graywater.

092 "Wastewater lagoon" means a shallow body of water where organic wastes are decomposed by bacteria in the presence of free oxygen.

093 "Wastewater works" means facilities for collecting, transporting, pumping and treating wastewater and the disposal of treated effluent and sludge.

094 "Waters of the state" is defined at Neb. Rev. Stat. § 81-1502(21).

095 Additional definitions can be found in Neb. Rev. Stat. § 81-15,239 – 244.

NEBRASKA ADMINISTRATIVE CODE

Title 124 - Onsite Wastewater Treatment Systems

Chapter 2 - APPLICATION OF REGULATIONS; GENERAL PROVISIONS

001 A dwelling or non-dwelling facility that generates wastewater is to have an onsite wastewater treatment system in accordance with these regulations or be connected to a wastewater works. For the purposes of these regulations, a wastewater treatment system with a design flow greater than 1,000 gallons per day and that does not use a soil absorption system is not considered an onsite wastewater treatment system but is considered a wastewater works subject to the requirements in Nebraska Administrative Code Title 123 - Rules and Regulations for the Design, Operation and Maintenance of Wastewater Works.

002 Private onsite wastewater treatment systems installed at an electric generation facility site owned by a district organized under Nebraska Revised Statutes, Chapter 70, article 6 are not subject to registration of the onsite systems or required to have installation of the system by a certified Onsite Professional.

003 Cesspools, dry wells, leeching pits, and seepage pits are prohibited systems and will not accept wastewater. A prohibited system will not satisfy the requirement to have an onsite wastewater system.

004 An existing onsite wastewater treatment system must obtain a new construction and/or operating permit or coverage under a general permit in accordance with this title if:

004.01 It endangers public health or environment, fails, or discharges a prohibited or unauthorized discharge.

004.02 It is being replaced, reconstructed, altered, repaired or modified, and the repairs are not exempted under 005 below;

004.03 There is an adverse change in use such as an increase in the number of bedrooms, design flow, or waste strength;

004.04 It begins to receive wastewater from a different dwelling or non-dwelling facility than it was originally constructed to serve;

004.05 It begins to receive wastewater from a dwelling or non-dwelling facility that is reconstructed or replaced following an event such as fire that renders the structure unsuitable for occupancy; or

004.06 The system owner creates or causes an encroachment on a setback distance by a change in a property line or construction of a new development feature such as a well, water line or foundation.

005 Repairs and maintenance can be performed on an onsite wastewater treatment system that functions properly without being subject to the requirement to obtain a construction permit if:

005.01 The repair is to fix a minor structural defect of the existing system such as: to seal a crack in a tank lid; level a distribution box; or to repair or replace a manhole riser, inspection pipe, tank baffle, building sewer pipe, or a pipe between the septic tank, sanitary tee and soil absorption system, or

005.02 The repair is to fix a mechanical device, such as repair or replacement of a pump, blower, or electrical equipment.

006 A temporary modification to a failed onsite wastewater treatment system may be performed without obtaining a permit in accordance with these regulations if the modification is to prevent a surface discharge or reduce a threat to public health. The temporary modification must be registered with a written description submitted with the registration which states that a temporary modification was made and which also specifically describes the problem that caused the discharge with the reason the temporary modification was made. A system with a temporary modification is not to be operated for more than four months without Department approval.

007 In implementing these regulations, the Department will consider the following:

007.01 The use classification of the surface water and groundwater (Title 117 - Nebraska Surface Water Quality Standards and Title 118 - Ground Water Quality Standards and Use Classification);

007.02 Vulnerability of surface water and groundwater to pollution;

007.03 The beneficial uses existing or assigned to the surface water and groundwater. Beneficial uses are those uses of surface water and groundwater as determined through Title 117 and Title 118, respectively;

007.04 Characteristics of the onsite wastewater treatment system;

007.05 Technical, socioeconomic, and other appropriate site-specific factors.

008 The owner of any dwelling or non-dwelling facility will establish a reserve area sufficient in size to be used for a replacement onsite wastewater treatment system capable of meeting the requirements of the construction permit or general permit covering the original system and these regulations. The reserve area will be considered a part of the onsite wastewater treatment system and all setback requirements apply to the reserve area.

009 Location of an onsite wastewater treatment system on property not owned by the facility using the system is to have a properly executed and filed property easement which is to include

provisions that allow for the operation and maintenance of the onsite wastewater treatment system. A copy of the filed easement is to be submitted with the system registration.

010 Setback distances for all onsite wastewater treatment systems will be established by the Department in either this regulation, a construction permit, general permit, or memorandum of agreement with a local government agency as determined by the Department to be necessary to protect public health, the environment, surface water, and groundwater.

011 A person is not to construct or relocate a foundation, well, water line, surface water feature, or property line within the setback distances listed in Table 2.1 of any onsite wastewater system, except that the Department may approve, at the system owner's request, an encroachment within the minimum setback distance to system components upon submittal of a construction plan and a letter from a professional engineer stating that he or she has evaluated the proposed construction plan and in his or her professional opinion, the encroachment will not have any detrimental effect on the system components, or on the proper function and operation of the system components, or on the ability to maintain or replace any of the system components and does not endanger human health or cause pollution; or if a less stringent distance is in a General Permit that setback distance would apply.

Table 2.1 – Lagoon, Tank and Soil Absorption System Setbacks

	Minimum Setback Distance feet (meters)		
Item	Tanks	Absorption, Infiltrative, and Evaporative Systems	Lagoons
Surface Water	50 ft. (15.2 m)	50 ft. (15.2 m)	50 ft. (15.2 m)
Private Drinking Water Wells	50 ft. (15.2 m)	100 ft. (30.5 m)	100 ft. (30.5 m)
Public Drinking Water Supply Wells:			
Non-Community System*	50 ft. (15.2 m)	100 ft. (30.5 m)	100 ft. (30.5 m)
Community System	500 ft. (152.4 m)	500 ft. (152.4 m)	1000 ft. (304.8 m)
Community System when a septic system or soil absorption system of > 1000 gpd is installed	500 ft. (152.4 m)	1000 ft. (304.8 m)	N/A
Horizontal Closed Loop Geothermal Wells (trenched or dug and above the ground water table)	25 ft. (15.2m)	25 ft. (15.2m)	25 ft. (15.2m)

All Other Water Wells	50 ft. (15.2 m)	100 ft. (30.5 m)	100 ft. (152.4 m)
Water Lines:			
Pressure Main/Service Connection/Suction Lines	10 ft. (3.1 m)	25 ft. (7.6 m)	25 ft. (7.6 m)
Property Lines	5 ft. (1.5 m)	5 ft. (1.5 m)	50 ft. (15.2 m)
Trees	NA	NA	50 ft. (15.2 m)
Parking area, driveway, sidewalk, or other impermeable surface or cover	5 ft. (1.5 m)	5 ft. (1.5 m)	50 ft. (15.2 m)
Foundation:			
Class 1	15 ft. (4.6 m)	30 ft. (9.1 m)	100 ft. (30.5 m)
Class 2	10 ft. (3.1 m)	10 ft. (3.1 m)	100 ft. (30.5 m)
Class 3	7 ft. (2.1 m)	10 ft. (3.1 m)	50 ft. (15.2 m)
Neighbor's Foundation:			
Class 1	25 ft. (7.6 m)	40 ft. (12.2 m)	200 ft. (61.0 m)
Class 2	20 ft. (6.1 m)	30 ft. (9.1 m)	200 ft. (61.0 m)
Class 3	15 ft. (4.6 m)	20 ft. (6.1 m)	100 ft. (30.5 m)
*See NAC Title 179 – Public Water Supply Systems, 7-010, for a complete definition for Non-community systems. It should be noted that some non-community systems may have more stringent setback requirements, per Title 179. * Class 1 means a basement, a non-basement footing, swimming pool, or slab-on-grade living quarters where any portion of the living quarters basement, footing, or slab is lower in elevation than the onsite wastewater treatment system component.			
* Class 2 means a basement, a non-basement footing foundation, trailer house, swimming pool, or slab-on-grade living quarters higher in elevation than the on-site wastewater treatment system. Any other foundation that is not a Class 1 or Class 3 is a Class 2 Foundation			
* Class 3 means slab-on-grade construction that is not used as living quarters.			
* The water well setback does not apply to a monitoring well meeting the requirements of Nebraska Administrative Code Title 178 that is installed and used for monitoring ground water quality.			

012 Soil percolation tests are to be conducted in the area where the soil absorption system will be located and using a testing methodology approved by the Department.

012.01 Soil percolation tests are to be conducted by a professional engineer, registered environmental health specialist, or a certified professional holding a certificate in the category of Inspector, Soil Evaluator, Master Installer, or Journeyman Installer.

012.02 The Department may require verification of percolation rates when submitted results are inconsistent with other known data.

013 Members of the Private Onsite Wastewater Treatment System Advisory Committee, as created by Neb. Rev. Stat. § 81-15,245, who are appointed by the Director, will serve at the pleasure of the Director, but not for more than two four year terms unless a replacement member cannot be found. The Director will appoint a replacement for any member who resigns or otherwise concludes his or her term on the committee for any position which the Director made the initial appointment.

014 Nothing in this Title will prevent more stringent local requirements from being adopted.

Enabling Legislation: Neb. Rev. Stat. §81-1505(8).

NEBRASKA ADMINISTRATIVE CODE

Title 124 - Onsite Wastewater Treatment Systems

Chapter 3 - PERMITS

001 Permits issued under these regulations are exempt from financial responsibility requirements contemplated in Neb. Rev. Stat. §81-1505(21).

002 A private onsite wastewater treatment system is to be permitted by the Department before any construction, reconstruction, alteration, modification, or repair not exempted in Chapter 2 is performed or the system is operated. The two procedures designed to cover all onsite wastewater treatment systems under these regulations are as follows:

002.01 General Permits as described in 003 below.

002.02 Construction and Operating Permits as described in 004, 005, and 006 below.

003 General Permits

003.01 If the Director determines that numerous owners of similar dwelling or non-dwelling facilities would be subject to identical design and procedural requirements to construct, reconstruct, alter, modify, or operate an onsite wastewater treatment system, the Director may issue a general permit following the procedures specified in this Chapter. The general permit will specify design, construction, and operation requirements for all applicable systems.

003.02 If the Director, in his or her discretion, determines a general permit is appropriate, he or she will initiate issuance of a general permit by publication of a notice which will contain:

003.02A Department contact information;

003.02B A brief description of the System design parameters, activities, and/or operations addressed by the permit;

003.02C A statement of the criteria for owners of dwelling or non-dwelling facilities that qualify for the permit;

003.02D A brief description of the comment procedures and the time and place of any hearing if already scheduled, and other procedures by which the public may participate in the final general permit decision; and

003.02E The name, address, and telephone number of the person from whom interested persons may obtain further information, and inspect and copy forms and related documents.

003.03 Any interested person will have thirty (30) days from issuance of the public notice to provide the Director with any written comments concerning the draft general permit or request a public hearing in writing. The Director may extend the thirty (30) day period.

003.04 If any written comment received during the public comment period raises substantial issues concerning the draft general permit, the Director may revise the draft general permit and issue a public notice on the revised draft general permit.

003.05 Following the close of the public comment period and any public hearing, the Director may issue a general permit.

003.06 The owner of a dwelling or non-dwelling facility will be authorized to construct, modify, repair, and operate an onsite wastewater treatment facility under a general permit if they meet the conditions of the permit and are in compliance with this title.

003.07 The owner of a dwelling or non-dwelling facility that constructs or operates under general permit coverage may be subject to an enforcement action for constructing without a construction permit or operating without an operating permit if the owner is later determined not to qualify for the general permit.

004 Construction and Operating Permit Application

004.01 The construction permit and the operating permit for a single system are covered by one application.

004.02 The owner of a dwelling or non-dwelling facility will submit a complete permit application on a form provided by the Department and include any supporting documents or reports requested.

004.03 The plans, specifications, reports, and other technical documents submitted as part of the application will be prepared and properly stamped and signed by a Professional Engineer.

004.04 The Department may require additional information to ensure proper engineering design and operation.

0040.05 The permit application fee (see Appendix A) is to be submitted to the Department with the application. For subdivisions, a fee will be due for each lot subject to approval.

005 Construction Permit

005.01 The owner of a dwelling or non-dwelling facility or the owner's designee, proposing to construct, reconstruct, alter, modify, or make a repair not exempted in Chapter 2 to an onsite wastewater treatment system not covered by a general permit will apply for and obtain a construction permit from the Department prior to construction of the system.

005.02 The design of all onsite wastewater treatment systems not covered by a general permit will be approved by the Department prior to issuance of a construction permit.

005.03 Onsite wastewater treatment systems will be designed in a manner and using engineering standards, as determined by the Department, necessary to protect public health, the environment, surface water, and groundwater.

005.03A Tank Design. Considerations the Department will use when approving tank design will include, but not be limited to, the type of facility that the system will serve, the character of the wastewater the system will receive, and the capacity required for proper operation.

005.03A3 Concrete block and metal are not acceptable materials for new tank construction. When an existing system is being replaced, reconstructed, altered, or modified and there is an existing concrete block or metal tank that is part of the system, the tank is to be inspected. The existing tank is to be replaced with a tank which has been permitted by the Department unless the existing tank is determined to be structurally sound and watertight.

005.03A4 The tank will be designed to withstand soil pressures when empty and not collapse or undergo excessive deflection which would prevent the proper operation of the system, crack or distort components of the system such as the baffles, prevent proper sealing of lids over manholes and inspection ports, reduce capacity below the required minimum tank design capacity, or reduce the design working volume of the system.

005.03A7 An existing restaurant or non-dwelling facility involved in food preparation that is replacing or modifying its onsite wastewater treatment system may install an additional septic tank in the waste line in lieu of a grease trap tank provided the following conditions are met:

005.03A7a The restaurant or non-dwelling facility was constructed before August 11, 2012;

005.03A7b The current kitchen and non-kitchen waste streams are not separated;

005.03A7c The additional septic tank is sized following Section 005.03A8 below; and

005.03A7d The additional tank is placed in series with other tanks and all tanks comply with all other requirements of this Title.

005.03A8 The minimum capacity of any grease trap tank is to be 750 gallons. A grease trap tank is to provide twenty four hours of detention time for the average daily flow.

005.04 A construction permit will be issued in the name of the facility owner for the legal location of the facility.

005.05 A construction permit is valid for two years from date of issuance. Prior to expiration, the owner may submit a written request for reauthorization or extension from the Department. If approved, the reauthorization or extension will be subject to requirements of regulations in effect at the time the reauthorization or extension is issued, and such reauthorization or extension will be valid for no more than one year from date of reissuance. Additional reauthorization or extension may be requested in writing prior to expiration.

005.06 The onsite wastewater treatment system will be constructed, reconstructed, altered, or modified according to the Department approved design and standards contained in the construction permit.

005.07 The owner is to notify the Department of any changes to the approved design or changes in wastewater characteristics (quality or quantity) and obtain Department approval prior to changes being made in the system. If the Department determines that any such changes are significant modifications to the previously approved design, the Department may require submittal of a new application and application fee. If a new construction permit is issued, the previous construction permit will become null and void.

005.08 The Department may require, as a construction permit condition, submittal of an operation and maintenance manual or plan to provide for the proper operation of the onsite wastewater treatment system.

005.09 The Department may require, as a construction permit condition, submittal of a groundwater monitoring plan for an onsite wastewater treatment system if there is a potential for groundwater pollution.

006 Operating Permit

006.01 An operating permit may be issued when construction that complies with the approved construction permit documents has been completed and:

006.01A The Professional Engineer who designed the system submits a completed form provided by the Department which notifies the Department of construction completion

006.01B The system registration form, system registration fee, and any applicable late fee have been received by the Department.

006.02 The Department may require, as an operating permit condition, groundwater monitoring for any onsite wastewater treatment system if there is a potential for groundwater pollution.

006.03 The Department may require, as an operating permit condition, implementation of a Department approved operation and maintenance plan to ensure proper operation of the onsite wastewater treatment system.

006.04 The permittee will operate and maintain the onsite wastewater treatment system in compliance with any permit conditions, these regulations and the Nebraska Environmental Protection Act §§81-1501 et seq.

007 Any permit or coverage under a general permit may be denied, suspended, or revoked, after notice and opportunity for public hearing according to NAC Title 115, for cause, including, but not limited to:

007.01 Violation of any term or condition of a permit or general permit.

007.02 Obtaining or attempting to obtain a permit by misrepresentation of any relevant facts or failure to disclose fully all relevant facts.

007.03 Information indicating that the onsite wastewater treatment system is likely, in the Department's judgment, to adversely affect human health or that a potential for ground or surface water pollution exists.

007.04 The existence of factors arising after permit or general permit issuance which would have required limitations or a denial of permit application or coverage under a general permit.

007.05 Adverse changes in use, such as flow greater than design, or type of wastewater.

007.06 Adverse changes in site conditions created or caused by the system owner such as an encroachment on setback distances, placement of fill or an impermeable surface over the soil absorption system, vehicular traffic or other soil compacting activities over the soil absorption system, or reduction in the size of a lot where a lagoon is installed to an area less than three acres.

007.07 The performance of any siting, layout, construction, reconstruction, alteration, modification, repair, or pumping of the onsite wastewater system, on or after January 1, 2004, by any person who is not a professional engineer, a registered environmental health specialist, or certified professional holding a valid certificate in accordance with this Title in the category of work performed.

007.08 Failure to have registered with the Department an onsite wastewater system that was constructed, reconstructed, altered, or modified on or after January 1, 2004.

008 Transferability of Permits and Coverage under General Permits

008.01 Any transfer of ownership of a permitted system or system covered under a general permit will automatically authorize the new owner to operate under the existing permit or general permit.

008.02 A subsequent owner is under the same obligations and conditions of the permit or general permit as was the original or previous owner.

009 Operating an onsite wastewater system is prohibited if:

009.01 The system was constructed, reconstructed, altered, or modified under a construction permit and there is no operating permit or the operating permit has been denied, suspended, or revoked;

009.02 The system was constructed, reconstructed, altered, or modified under general permit and the general permit has been suspended or revoked;

009.03 The system was constructed, reconstructed, altered, or modified without a construction permit and did not obtain coverage under a general permit; or

009.04 The system endangers public health, has failed, or if operation of the system results in a prohibited discharge.

Enabling Legislation: Neb. Rev. Stat. §81-1505(8), §81-1506, §81-15,237, §81-15,247, §81-15,248.

NEBRASKA ADMINISTRATIVE CODE

Title 124 - Onsite Wastewater Treatment Systems

Chapter 4 - SUBDIVISIONS

001 Subdivision Review and Approval Application

001.01 Prior to construction of a development area where an onsite wastewater treatment system is proposed on any lot less than three acres in size, the owner of the development area will submit an application for subdivision review and receive Department approval for the use of onsite wastewater treatment systems for the development area on a form provided by the Director and include any additional information as requested. The Department will review the application and determine the acceptability of onsite wastewater treatment systems for the development area. The Department will either approve or deny the use of onsite wastewater treatment systems for the development area. Approval will be based upon an evaluation of the submitted information to meet design requirements of this Title.

001.02 Once the Department has issued a subdivision approval, any subsequent change may be considered a new application and subject to the subdivision review and approval application and fee requirements.

001.03 A subdivision approval expires ten years from the date the approval is issued by the Department unless the owner submits a written request for reauthorization or extension from the Department prior to the expiration date and the reauthorization or extension is approved by the Department. Such reauthorization or extension will be subject to requirements in effect at the time the reauthorization or extension is issued, and such reauthorization or extension will be valid for no more than one year from the date of issuance. Additional reauthorization or extension may be requested in writing prior to expiration.

Enabling Legislation: Neb. Rev. Stat. §81-1505(8), §81-15,237, §81-15,247, §81-15,248.

NEBRASKA ADMINISTRATIVE CODE

Title 124 - Onsite Wastewater Treatment Systems

Chapter 5 - MAINTENANCE OF SEPTIC SYSTEMS AND LAGOONS

001 The owner of a septic tank will have a Master or Journeyman Pumper, a professional engineer, or a registered environmental health specialist periodically inspect the septic tank and remove septage from the tank whenever 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.

002 Pumping and disposal of domestic septage will be in accordance with this Title.

003 The owner of a lagoon will operate and maintain the lagoon in the following manner:

003.01 The liquid level in a lagoon will be maintained at a minimum depth of two feet. Additional water will be added as necessary to maintain the two foot minimum depth.

003.02 The lagoon area will be mowed to keep grass and other plants at six inches or less in height on the lagoon slopes and top of dike.

003.03 The lagoon will be operated to prevent the liquid level from encroaching on the one foot freeboard requirement of the lagoon.

003.04 Solids will be removed from the lagoon if needed through the services of a Master or Journeyman Pumper, a professional engineer, or a registered environmental health specialist and disposed of in accordance with this Title.

004 All dike surface areas from the design high operating waterline to the outside toe of the dike and all other areas which were disturbed during construction will be seeded or sodded, and a grass cover maintained to prevent soil erosion. Short grasses, such as blue grass are preferred and will be mowed frequently to prevent overhanging vegetation. Alfalfa and long rooted grasses which might damage the integrity of the lagoon will not be used. Weeds, cattails, reeds, and other wetland plants will be removed by physical or chemical treatment as they emerge. Trees will not be allowed to grow within a horizontal distance of at least 50 feet as measured from the high water mark for the maximum operating depth of the lagoon, but not less than 10 feet horizontal distance from the outer dike toe of the lagoon.

005 The integrity of fencing around lagoons will be maintained. The lagoon will be fenced with a four foot high woven wire, welded wire, or seven strand barbed wire with the first strand starting three inches from the ground and the following strands spaced evenly. The fence will be equipped with a standard main gate that is kept locked. The fence will be placed on the outside edge of the top of the dike or four feet outside the toe of the dike. A sign no less than 12 inches

by 24 inches bearing the clearly-readable words "NO TRESPASSING - WASTEWATER LAGOON" will be located on the gate.

Enabling Legislation: Neb. Rev. Stat. §81-1505(8).

NEBRASKA ADMINISTRATIVE CODE

Title 124 - Onsite Wastewater Treatment Systems

Chapter 6 - WASTE PROHIBITIONS

001 The type of waste that can be directed to an on-site wastewater treatment system is limited to domestic wastewater. The following wastes are prohibited from entering an onsite wastewater treatment system unless approved in an operating permit issued for the system.

001.01 Cooling water, groundwater infiltration, discharge from roof drains, discharge from foundation tile drains, swimming pool wastewater, or other clear water discharges.

001.02 Hazardous waste: Any chemical substance or material, gas, solid, or liquid designated as hazardous in accordance with NAC Title 128.

001.03 Those pollutants or combination of pollutants or disease causing agents, which after discharge and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will on the basis of information available to the Department cause either death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunction in reproduction), or physical deformations on such organism or its offspring.

002 The discharge of motor vehicle wastes to a septic system is prohibited. For the purposes of these regulations, “motor vehicle” means mechanized equipment used in agriculture, construction, industrial activities, maintenance, recreation, or transportation.

003 The discharge to a septic system of wastewater containing high strength disinfectants, biological inhibitors, or deodorants or similar chemicals (such as those used in camper waste tanks, laboratories, medical or veterinary facilities, or industrial facilities) is prohibited unless approved in an operating permit issued for the system.

Enabling Legislation: Neb. Rev. Stat. §81-1505(8).

NEBRASKA ADMINISTRATIVE CODE

Title 124 - On-site Wastewater Treatment Systems

Chapter 7 - CLOSURE OF SEPTIC TANK AND LAGOON SYSTEMS

001 Whenever the use of an onsite wastewater treatment system is discontinued following the connection to a sanitary sewer or following condemnation or demolition of a building or property or due to the construction of another onsite wastewater treatment system, the onsite wastewater treatment system will be properly closed and any further use of the system for any purpose will be prohibited.

002 One of the following two methods will be used for closure of a septic tank or holding tank:

002.01 Pump and Fill Method: The tank will be pumped of all liquids and solids and then filled with soil or sand. If soil is used it will be tamped completely so as to prevent voids which would occur as the result of settling; or

002.02 Pump and Remove Method: The tank will be removed after being pumped of all liquids and solids and the void left from the tank removal will be filled in with soil. The soil or sand will be mounded to provide for future settling.

003 The following method will be used for closure of a wastewater lagoon:

003.01 The lagoon will be pumped or allowed to evaporate until there is no liquid remaining;

003.02 The fence will be removed and the settled solids and liner material at the bottom of the lagoon will be scraped out and properly disposed;

003.03 If a lagoon has received only domestic wastewater, a sludge layer less than six-inches thick may be buried on-site during the regrading of lagoon dikes and the surrounding area. The sludge will be incorporated into the soil or receive at least one foot of cover material; and

003.04 The lagoon area will be leveled and filled with clean soil. The soil will be mounded over the lagoon area to provide for future settling and to prevent water from ponding.

Enabling Legislation: Neb. Rev. Stat. §81-1505(8).

NEBRASKA ADMINISTRATIVE CODE

Title 124 - Onsite Wastewater Treatment Systems

Chapter 8 - FLOOR DRAINS

001 A floor drain in a dwelling garage may be connected to an onsite wastewater treatment system provided the drain does not receive petroleum products, paint, organic solvents, antifreeze, or hazardous materials and meets design requirements of Section 002. These drains are designed to handle snow and ice melt along with occasional exterior vehicle washing.

002 A floor drain in a dwelling garage that is connected to an onsite wastewater treatment will meet the following design requirements:

002.01 The drain will have an integral mud trap and oil separator; and

002.02 The drain will be equipped with a watertight cap or a valve will be located immediately following the drain. The cap will normally be left secured on the drain or the valve will normally be left closed.

003 The design flow of the onsite wastewater treatment system will be increased at least 100 gallons to account for a dwelling garage floor drain connection to the system.

004 A permanent sign will be placed within view of the drain. The sign will remind current and future owners that the garage drain leads to an on-site wastewater treatment system and should only accept water.

005 The discharge of motor vehicle wastes or maintenance shop wastes to a septic system or to a soil absorption system is prohibited. The connection of a floor drain from a maintenance shop or a non-dwelling garage to a septic system or soil absorption system is prohibited.

Enabling Legislation: Neb. Rev. Stat. §81-1505(8).

NEBRASKA ADMINISTRATIVE CODE

TITLE 124 – Onsite Wastewater Treatment Systems

Chapter 9 - CERTIFICATION REQUIREMENTS

001 Only a certified professional, a professional engineer, a registered environmental health specialist, or a person under their direct supervision may engage in the inspection, pumping, siting, layout, construction, reconstruction, alteration, modification, repair, closure or otherwise changing of an onsite wastewater treatment system. For the purposes of these regulations, "direct supervision" means the person overseeing the work is physically present on the site where the work is being done and has control over, responsibility for, and professional knowledge of the work being done. The certification requirement does not apply to a private onsite wastewater treatment system at an electric generation facility site owned by a district organized under Nebraska Revised Statutes, Chapter 70, article 6.

002 Certified professionals must hold a valid certificate by examination in accordance with this Title or a hardship certificate in one or more of the following categories:

002.01 Master Installer
002.02 Journeyman Installer
002.03 Soil Evaluator
002.04 Inspector
002.05 Master Pumper
002.06 Journeyman Pumper

003 Authorization to Practice

003.01 Authorization to Practice under Certificates by Examination:

003.01A A Master Installer or Journeyman Installer is authorized to engage in the siting, layout, construction, reconstruction, alteration, modification, repair, inspection, or closure of onsite wastewater systems, except that a Journeyman Installer is only authorized to engage in any of these activities in accordance with the following restrictions:

003.01A.1 The Journeyman Installer is employed by a Master Installer, a professional engineer, or a registered environmental health specialist who is responsible for the work, or

003.01A.2 The Journeyman Installer is employed by a business or government entity that has a Master Installer, a professional engineer, or a registered environmental health specialist as an owner, officer, or

employee of the business or of a government entity who is responsible for the work.

003.01B A Soil Evaluator is authorized to engage in the soil evaluation of onsite wastewater systems.

003.01C An Inspector is authorized to engage in the inspecting or soil evaluation of onsite wastewater systems.

003.01D A Master Pumper or Journeyman Pumper is authorized to engage in the pumping or repair of onsite wastewater systems, except that a Journeyman Pumper is only authorized to engage in this activity in accordance with the following restrictions:

003.01D.1 The Journeyman Pumper is employed by a Master Pumper, a professional engineer, or a registered environmental health specialist who is responsible for the work; or

003.01D.2 The Journeyman Pumper is employed by a business or government entity that has a Master Pumper, a professional engineer, or a registered environmental health specialist who is an owner, officer, or employee of the business or government entity and responsible for the work.

003.02 Authorization to Practice under Hardship Certificates - A person holding a valid Hardship Certificate is authorized to practice in those categories listed on the certificate in accordance with Authorizations to Practice under Certificates by Examination of this Section.

004 No person will engage in the siting, layout, construction, reconstruction, alteration, modification, repair, closure, or otherwise changing of a private onsite wastewater system unless a Master Installer, a Journeyman Installer, a professional engineer, or a registered environmental health specialist who is responsible for such work is physically present at the site where such work is being performed and is supervising the work, except that a Soil Evaluator or an Inspector may perform soil evaluation for the purpose of aiding in siting and layout.

005 No person will engage in the pumping of a private onsite wastewater system unless a Master Pumper, a Journeyman Pumper, a professional engineer, or a registered environmental health specialist who is responsible for such work is physically present at the site where such work is being performed and is supervising the work.

006 No person will engage in the inspecting of a private onsite wastewater system unless an Inspector, Master Installer, a professional engineer, or a registered environmental health

specialist who is responsible for the work is physically present at the site where such work is being performed and is supervising the work.

007 Hardship Certificate. A Hardship Certificate may be issued to an individual upon submittal of a complete application and an application fee in accordance with the fee schedule in Appendix A. The purpose of a Hardship Certificate is to waive PDH requirements.

007.01 Submittal of a request for certification by hardship will include the words "Application for Onsite Hardship Certification" and state the conditions of the hardship and include evidence supporting competency in the categories in which the individual is seeking certification. The request will include: (1) the applicants name and license number, (2) the number of PDH for which the hardship is sought, (3) a narrative explaining what circumstances beyond the applicants control prevented completion of all or part of the continuing education requirements including but not limited to: pertinent dates and identification of persons by name, address, and telephone number, who have direct knowledge of the grounds claimed for waiver, and (4) documentation of the circumstances which prevented the licensee from fulfilling the PDH requirements.

007.02 A separate hardship application with application fee will be required for each category of certificate that the applicant applies for.

007.03 A hardship certificate expires 180 days after the date of issuance.

008 Certificate by Examination

008.01 To obtain a certificate by examination in any category, an applicant must pass an examination administered by the Department.

008.02 All certificates by examination expire December 31 of every odd-numbered year unless renewed in accordance with this Chapter.

008.03 Application for Certificate by Examination. An applicant for certification by examination is to submit the following to the Department: a certificate application fee and an examination fee in accordance with Appendix A and a complete application on a form provided by the Department

008.03A The Director may waive certification and examination fees pursuant to Neb. Rev. Sta. § 81-15,248(4).

008.03A.1 The application for certification or for certificate renewal for which the fee waiver is requested will include verification of employment as an inspector of onsite wastewater treatment systems by a local governmental agency or subdivision.

008.03A.2 The Department may request additional information as needed to verify employment or to determine that the local inspection program is at least as stringent as the requirements in this Title.

008.03A.3 An Inspector who is granted this fee waiver will be limited to inspecting as a government employee within the jurisdiction and under the authority of that local governmental agency or subdivision.

008.03B All applications received less than five days prior to a scheduled examination date may be held for the next scheduled examination date.

008.03C An individual seeking certification by examination in multiple categories of certification may submit a single application for certification by examination with one application fee for one or more categories, but must submit the examination fee for each examination to be taken. A separate examination is required for each category sought. Where application is made for multiple categories and certification application fees for the categories are different, the applicant will submit the highest fee.

008.03D An applicant who fails an examination will be permitted to be re-examined at a subsequent examination. An applicant who desires to be re-examined will submit an application for certification by examination as identified in 008.03 above and the examination fee in accordance with the fee schedule (Appendix A). The certificate application fee is not required for re-examination within two years of initial application as noted below. An applicant who fails three examinations in succession will obtain a minimum of six hours of approved continuing education prior to re-examination. Failure to pass the examination within two years of the date the initial application for certification by examination was received will result in the rejection of the application. An individual whose application has been so rejected who desires certification will submit a new application for certification by examination and the applicable examination and application fees.

008.03E Adding Categories to Current Certificates

008.03E.1 A certified professional holding a valid certificate by examination in the Master Installer, Master Pumper, Inspector, or Soil Evaluator category may apply for addition of other categories to the certificate by submitting an application for certification by examination as identified in 008.03 above and the examination fee for each additional category and passing the appropriate exam.

008.03E.2 A certified professional holding a valid certificate by examination in the Journeyman Installer category may apply to add the

Journeyman Pumper category, and a certified professional holding a valid certificate by examination in the Journeyman Pumper category may apply to add the Journeyman Installer category to the certificate by submitting an application for certification by examination and the examination fee for the additional category and passing the appropriate exam.

008.03E.3 A certified professional holding a valid certificate by examination in the Journeyman Installer category may apply for certification in the category of Master Pumper, Inspector, or Soil Evaluator by submitting a new application for certification by examination and the examination fee for each additional category, and submit the difference in certificate fees between the Journeyman Installer certificate fee and the Master Pumper, Inspector, or Soil Evaluator certificate fee and passing the appropriate exam.

008.03E.4 A certified professional holding a valid certificate by examination in the Journeyman Pumper category may apply for certification in the category of Master Installer, Inspector, or Soil Evaluator by submitting a new application for certification by examination and the examination fee for each additional category, and submit the difference in certificate fees between the Journeyman Pumper certificate fee and the Master Installer, Inspector, or Soil Evaluator certificate fee and passing the appropriate exam.

008.03E.5 A certified professional holding a valid certificate by examination in the Journeyman Installer category may upgrade to a Master Installer category, and a certified professional holding a valid certificate by examination in the Journeyman Pumper category may upgrade to a Master Pumper category, by submitting a completed application for certification by examination and the difference in certificate fees between the two certificates.

008.04 Renewal of Certificates. To renew a valid certificate, the certified professional will submit to the Department a certificate renewal fee in accordance with the fee schedule (Appendix A) and a complete application for renewal, including the certified professional's record of continuing education, on a form provided by the Department.

008.04A If the Department does not receive the application for renewal, which includes the renewal fee and record of continuing education, prior to the expiration date of the certificate, the certificate will expire.

008.04B The certificate of any certified professional who fails to comply with the continuing education requirements of this Chapter will expire on the expiration date of the certificate.

008.04C Late Renewal of Expired Certificate

008.04C.1 A person may late renew their expired certificate within 60 days after the certificate has expired by submitting to the Department a properly completed application for onsite certificate renewal , record of continuing education, the certificate renewal fee (Appendix A), and a $50 late renewal penalty.

008.04C.2 The late renewal application (which includes the record of continuing education, certificate renewal fee, and late penalty) must be received by the Department no later than 60 days after the certificate has expired.

008.04C.3 Once the 60 day late renewal period has expired, in order to obtain certification the individual is to submit an application for certification by examination, including the application fee along with the examination fee for each category, and pass the examination for each category desired.

008.04D The Department will not renew a certificate or issue a new certificate to an individual whose certificate has been revoked until at least one year has passed since the date of revocation.

005.04E If insufficient PDH are obtained prior to renewal, the person may renew by examination. To renew by examination the person will submit: certification examination fee, certificate of renewal fee, and a completed application form. In addition, the person must pass the appropriate exam administered by the Department.

008.05 Examination Development and Administration

008.05A Examinations for certification will be developed and administered by the Department.

008.05B Examinations for certification will be designed to test the general knowledge of the applicants regarding onsite wastewater construction standards, soils and geology of the state, rules and regulations of this Title, and any other knowledge the Department deems essential to the successful practice of the profession for which certification is requested.

008.05C The examinations will be by open book testing. The Department will make available to each examinee at the test site a copy of this Title and other documents which cover the subject matter tested in the exam. Any materials brought by examinees to the examination site for use in completing the

examination may be subject to inspection by examination proctors and subject to confiscation or exclusion from the examination area for the duration of the exam without advance notice to examinees.

008.05D The Department may provide for special arrangements in administering the examinations to accommodate special circumstances without compromising the examination purposes or integrity. Such special circumstances may include but not be limited to reading difficulties, physical skills limitations or absence from the state during regular examination dates. Accommodations may include special proctors or readers, oral examination, dictation of answers or use of non-resident proctors.

008.05E Applicants must show photographic identification at the examination site to be admitted for examination.

008.05F All applicants will be notified in writing regarding examination results. Results will be reported as either pass or fail.

008.05G Applicants who pass an examination in any category will be issued a certificate in that category. A passing grade of 80 percent will be required for certification in any category.

009 Professional Development Hours (PDH)

009.01 Required PDHs for Certificate Renewal. A certified professional will successfully complete a minimum of 12 PDHs of continuing education during every two-year certificate period.

009.01A For a certificate issued in the first or even numbered year of the two-year certificate period a certified professional will successfully complete a minimum of 12 PDHs of continuing education during the first certificate period.

009.01B For certificates issued in the second or odd numbered year of the two-year certificate period there are no PDH requirements until the next 2-year cycle.

009.01C PDHs completed within 30 days prior to obtaining initial certification by examination will be accepted for the purposes of complying with the PDH requirement for certificate renewal.

009.02 A PDH is to be recorded to the nearest quarter-hour (15 minutes).

009.03 A maximum of six PDHs acquired in excess of the minimum hours required during any certificate cycle may be carried over into the next two-year certificate cycle. If

a certificate has expired and the late renewal period has lapsed there can be no carryover of PDHs.

009.04 All PDHs for certificate renewal will be from courses or programs approved by the Department. These courses or programs must be appropriate, directly associated with the onsite wastewater industry or related workplace safety, cover topics related to the responsibilities carried on by the certified professional, and provide information or training that serves to enhance a certified professional's knowledge of and ability to perform activities that protect the public health and the environment.

009.04A Any person may submit to the Department a proposed program or course for approval to be counted as PDHs. The submission of a proposed course or program is to be at least 60 days prior to the date the proposed program or course is offered for presentation. The Department may request additional information as determined necessary to fully evaluate the proposed course or program. The Department will evaluate and determine the number of professional development hours that a certified professional can claim for successful, documented completion of the course or program.

009.04B A maximum of two professional development hours in each two-year certification cycle may be from pre-approved courses peripheral to the actual activity of the onsite wastewater industry such as business tax law, accounting, insurance, or first aid training. For the purposes of PDHs, work place safety and protection of work activities will be considered directly related to the actual activity of the onsite wastewater industry.

009.05 Continuing education records are to be maintained by the certified professional and submitted to the Department as part of application for certificate renewal. Continuing education records including evidence of participation are to be retained by the certified professional for a minimum of three years and are to be submitted to the Department upon request.

009.06 The Department may waive or exempt a certified professional from continuing education requirements or extend the period for completion of the required continuing education, in whole or in part, for any period for which the certified professional submits documentation supporting an exemption for circumstances beyond his or her control which prevented completion of such requirements.

010 Certification Endorsement

010.01 An endorsement may be issued, upon successful completion of examination, authorizing the certified professional so endorsed to engage in special activities or procedures that require advanced training or skills identified in this Title as requiring an endorsement to perform.

010.02 An endorsement to engage in a special activity or procedure will only be issued to a person holding a valid certificate in the appropriate category.

010.03 Application and Examination for Endorsement. Application for endorsement is to include submittal of a completed form provided by the Department and submittal of the endorsement application fee and the examination fee in accordance with the fee schedule (Appendix A). A separate application and examination fee will be required for each endorsement examination.

010.03A Any application received less than five days prior to a scheduled examination date may be held for the next scheduled examination date.

010.03B Applicants will be required to show photographic identification at the examination site to be admitted for examination.

010.03C Applicants will be notified in writing regarding examination results. Results will be reported as either pass or fail.

010.03D Applicants who pass an examination for endorsement will be issued an endorsement to their certificate.

010.03E Applicants who fail and desire to be re-examined for endorsement are to submit an application and the examination fee as specified in 010.03 above.

010.04 An endorsement will automatically renew upon the renewal of the certificate to which it is attached.

010.05 An endorsement expires upon the expiration, suspension, or revocation of the certificate to which it is attached, except that an endorsement may be late renewed in conjunction with late renewal of the certificate to which it is attached. An individual whose endorsement has expired who desires to obtain a new endorsement is to re-apply and meet all requirements for endorsement by examination in accordance with requirements of this section.

011 All fees are nonrefundable.

0012 A certified professional may only practice in the categories in which they hold a valid certificate.

013 Notice of a disciplinary action taken in accordance with Neb. Rev. Stat. § 81-15,249 will be issued by the director through certified mail to the affected certificate holder at that individual's last known address. That notice will state the reason(s) for the action, the effective date of the action, and the steps the certificate holder may take to contest the action.

Enabling Legislation: Neb. Rev. Stat. §81-15,244; 81-15,247; 81-15,248; & 81-15,252.

NEBRASKA ADMINISTRATIVE CODE

TITLE 124 – Onsite Wastewater Treatment Systems

Chapter 10 - REGISTRATION OF ONSITE WASTEWATER TREATMENT SYSTEMS

001 On or after January 1, 2004, any onsite wastewater treatment system constructed, reconstructed, altered, modified, or otherwise changed by a certified professional, professional engineer, or registered environmental health specialist will be registered in accordance with Neb. Rev. Stat, § 81-15,248(2).

002 The registration fee will be as prescribed in the fee schedule of Appendix A.

003 Onsite wastewater treatment systems not registered within 45 days will be subject to the initial late registration fee or final late registration fee if registered 91 or more days after completion of the system. Late registration fees will be in addition to the system registration fee as prescribed in the fee schedule of Appendix A.

004 The certified professional, professional engineer, or registered environmental health specialist will provide a copy of the system registration form to the system owner.

005 A certified professional, professional engineer, or registered environmental health specialist is to keep records of all onsite wastewater treatment systems constructed, reconstructed, altered, modified, or otherwise changed and make the records available to the Department upon request.

Enabling Legislation: Neb. Rev. Stat. §81-15,244; 81-15,247; 81-15,248; & 81-15,252.

NEBRASKA ADMINISTRATIVE CODE

Title 124 - Onsite Wastewater Treatment Systems

Chapter 11 – TANK PUMPING AND DOMESTIC SEPTAGE DISPOSAL

001 Domestic septage will be removed from a septic tank whenever the top of the sludge layer is less than 12 inches below the bottom of the outlet baffles, whenever the bottom of the scum layer is less than three inches above the bottom of the outlet baffle, or whenever the top of the scum layer is within one inch of the top of the outlet baffle.

002 Domestic septage will be removed from a holding tank whenever the liquid level reaches 90 percent of effective tank capacity.

003 Tank contents will be stirred, mixed, or agitated to suspend all solids in the liquid prior to removing the contents for disposal.

004 The entire contents of the tank, liquids and solids, will be removed. If tank is refilled after pumping, it will be filled with clear water.

005 Tank contents will be pumped through the access manhole. Pumping of tank through baffle inspection ports is prohibited unless no other access port or manhole exists and the integrity of the baffle is maintained.

006 Disinfectant or anti-bacterial products will not be used to clean the tank except as an optional step in preparing the tank for closure.

007 The allowable methods for disposal of domestic septage will be discharge to a publicly owned wastewater treatment facility, land application as provided for in this chapter, or other methods approved by the Department. Land application of wastewater containing high strength disinfectants, biological inhibitors, or deodorants or similar chemicals (such as those used in camper waste tanks, laboratories, medical or veterinary facilities, or industrial facilities) is prohibited.

008 Domestic septage may be discharged to a publicly owned wastewater treatment facility that has a designated or certified operator certified with the Department provided that the septage is discharged with written permission of and under all rules, regulations, guidelines, directions, and requests of the facility owner or operator.

009 Domestic septage may be land applied under the following conditions:

009.01 Only non-public contact sites such as agricultural land, forests, and reclamation land are to be used for land application of domestic septage.

009.02 Land application of domestic septage without the landowner’s written permission is prohibited.

009.03 Land application of domestic septage is prohibited within the setback distances in Table 23.1.

TABLE 23.1

Feature	Minimum Setback
Surface Water:	100 ft. (30 m.)
Public Drinking Water Supply Wells:	1000 ft. (300 m.)
All Other Water Wells:	200 ft. (60 m.)
Water Lines:	50 ft. (15 m.)
Property Line:	200 ft. (60 m.)
Public Road Right-of Way:	200 ft. (60 m.)
Buildings used for human occupancy:	500 ft. (150 m.)

009.04 Vector Attraction Reduction

009.04A Untreated domestic septage is to be injected below the surface of the land and no significant amount of septage is to be present on the land surface within one hour after injection, or

009.04B Untreated domestic septage will be incorporated into the soil by disking or plowing within six hours after application.

009.04C Domestic septage that is applied to the land surface and is not injected or plowed-in within six hours will be treated prior to application by raising and holding its pH at a level of 12 or higher for a minimum of 30 minutes. The minimum treatment method for raising the pH of the domestic septage will be the addition and thorough mixing of no less than 50 pounds of hydrated lime per 1,000 gallons of septage.

009.05 Crop, Grazing and Site Restrictions, and Pathogen Reduction

009.05A Land application of domestic septage is prohibited:

009.05A.1 On land from which human food crops with harvested parts below the ground will be harvested in the next 38 months after application;

009.05A.2 On land from which human food crops with harvested parts touching the ground surface will be harvested in the next 14 months after application;

009.05A.3 On land from which human food crops with harvested parts that do not touch the ground surface will be harvested in the next 30 days after application;

009.05A.4 On land from which crops grown for animal food or fiber will be harvested in the next 30 days after application;

009.05A.5 On land on which turf grass is grown for transplantation to lawns and other areas with potential for frequent human contact;

009.05A.6 On land on which livestock will be grazed in the next 30 days after application; and

009.05A.7 In areas readily accessible or frequently used by the public.

009.05B Public access to land where domestic septage is applied is to be restricted by fencing, no-trespassing signs, or remoteness for a minimum of 30 days after application of septage.

009.05C The Master Pumper, Journeyman Pumper, registered environmental health specialist, or professional engineer applying the domestic septage is to inform the land owner of all harvesting, grazing, and site access restrictions.

009.06 Land application of domestic septage may not be applied at a rate that exceeds the amount of nitrogen required by the crop or vegetation. When calculating maximum nitrogen application rates, all other sources of nitrogen such as livestock manure or commercial fertilizer are to be deducted from total nitrogen requirement.

009.07 Domestic septage is to be spread, sprayed, or injected in a manner that does not cause localized pooling, ponding, or runoff. Application of septage is not to be at a rate or of a method that creates a layer of septage exceeding one-quarter inch thick at any location on the ground surface immediately following application.

009.08 Domestic septage is not to be land applied on saturated, frozen, or snow-covered ground except as provided for below in an emergency situation where the air temperature is below 10 degrees Fahrenheit, the distance to a suitable storage facility or publicly owned wastewater treatment facility for proper storage or disposal is more than 30 miles, and no other reasonable disposal or storage method is available.

009.08A The ground slope of the land application site is not to exceed five percent and the site is to be covered with dense perennial vegetation;

009.08B The waste is to be treated as provided for in 009.04C above and the land application rate is not to exceed 10,000 gallons per acre regardless of the nitrogen content of the waste;

009.08C The minimum setback requirements in Table 23.1 will be doubled;

009.08D The recorded information is to include a description of the emergency situation and include air temperature, distance to nearest suitable storage facility or publicly owned wastewater treatment facility, and a description of the soil conditions; and

009.08D All other requirements of this Chapter are to be met.

010 Record Keeping

010.01 The Master Pumper, Journeyman Pumper, registered environmental health specialist, or professional engineer will keep records of all domestic septage pumped for a minimum of five years and will make the records available to the Department upon request.

010.02 When domestic septage is disposed of at a publicly owned wastewater treatment facility, the following information will be recorded for each load disposed:

010.02A Date of disposal.

010.02B Name and location of treatment facility.

010.02C Total gallons disposed per load.

010.02D Date of pumping of each tank pumped per load.

010.02E Sources (owner name and address of each tank pumped per load).

010.02F Gallons pumped from each source per load.

010.02G Name, certificate or license number, and signature of the Master Pumper, Journeyman Pumper, registered environmental health specialist, or professional engineer who performed the pumping.

010.03 When domestic septage is disposed of by land application, the following information is to be recorded for each land application site:

010.03A Location and legal description of application site.

010.03B Name and address of application site owner and the landowner's written permission to use the site for the land application of domestic septage.

010.03C Acreage of site to which domestic septage was applied.

010.03D Type of crop or vegetation, expected yield, and annual nitrogen requirement.

010.03E Maximum rate of septage application based on nitrogen requirement (gallons per year).

010.03F Harvesting or grazing schedule for site.

010.03G Certification statement that pathogen reduction and vector attraction reduction requirements have been complied with.

010.03H For each load of septage applied to the site, the following will be recorded:

010.03H.1 Date of application.

010.03H.2 Gallons of septage applied.

010.03H.3 Total gallons of septage applied year-to-date at site.

010.03H.4 Sources (owner name and address of each tank pumped).

010.03H.5 Gallons pumped from each source.

010.03H.6 Method of application (surface application, surface application plowed in within six hours, or direct subsurface injection).

010.03H.7 Method of treatment (none, pH adjustment).

010.03H.8 If treated by pH adjustment, pounds of hydrated lime used.

010.03H.9 Name, certificate or license number, and signature of the Master Pumper, Journeyman Pumper, registered environmental health specialist, or professional engineer who applied the septage.

Enabling Legislation: Neb. Rev. Stat. §81-1505; 81-15,251.

Title 124

Appendix A

FEE SCHEDULE

Category	Fee
Certification Examination (testing fee)	$50
Certificate by examination for Master Installer, Master Pumper, Soil Evaluator, or Inspector.	$300
Certificate by examination for Journeyman Installer or Journeyman Pumper	$100
Certificate by hardship for Master Installer, Master Pumper, Soil Evaluator, or Inspector	$300
Certificate by hardship for Journeyman Installer or Journeyman Pumper	$100
Renewal of Master Installer, Master Pumper, Soil Evaluator, or Inspector Certificate	$300
Renewal of Journeyman Installer or Journeyman Pumper Certificate	$100
Fee for Late Certification Renewal (no later than 60 days after certificate has expired, sufficient PDH)	$50
Registration of Onsite System	$140
Initial Late System Registration (46 to 90 days late)	$150
Final Late System Registration (91 or more days late)	$450
Application for Permit	$450
Application for Subdivision Review and Approval – Fee is for Each Lot Subject to Approval	$450 per lot

NOTES: All fees apply on the effective date. All fees are non-refundable. Fees apply to any documents received by the Department on or after, the effective date.

Title 124 referenced statutes

Definitions

"Waters of the state" means all waters within the jurisdiction of this state, including all streams, lakes, ponds, impounding reservoirs, marshes, wetlands, water courses, waterways, wells, springs, irrigation systems, drainage systems and all other bodies or accumulations of water, surface or underground, natural or artificial, public or private, situated wholly or partly within or bordering upon the state is defined at Neb. Rev. Stat. § 81-1502(21).

Statute:

81-1502(21)Waters of the state shall mean all waters within the jurisdiction of this state, including all streams, lakes, ponds, impounding reservoirs, marshes, wetlands, watercourses, waterways, wells, springs, irrigation systems, drainage systems, and all other bodies or accumulations of water, surface or underground, natural or artificial, public or private, situated wholly or partly within or bordering upon the state;

Addition. Reference State Statute for additional definitions

Additional definitions can be found in Neb. Rev. Stat. § 81-15,239 – 244.

Statute

Neb. Rev. Stat. § 81-15,239; Advisory committee means the Private Onsite Wastewater Treatment System Advisory Committee.

Neb. Rev. Stat. § 81-15,240; Certified professional means a private onsite wastewater treatment system professional certified under the Private Onsite Wastewater Treatment System Contractors Certification and System Registration Act to perform the tasks for which the certification has been issued.

Neb. Rev. Stat. § 81-15,241; Council means the Environmental Quality Council.

Neb. Rev. Stat. § 81-15,242; Department means the Department of Environment and Energy.

Neb. Rev. Stat. § 81-15,243; Director means the Director of Environment and Energy.

Neb. Rev. Stat. § 81-15,244; Private onsite wastewater treatment system means any system of piping, treatment devices, or other appurtenances that convey, store, treat, or dispose of domestic or nondomestic wastewater, but not including wastewater from a livestock waste control facility, on the property where it originates or on nearby property under the control of the user, which system is not connected to a public sewer system.

Certification Requirements

The Director may waive certification and examination fees pursuant to Neb. Rev. Sta. § 81-15,248(4).

Statute:

Neb. Rev. Stat. § 81-15,248(4); The director may waive certification and examination fees for inspectors employed by a governmental agency or subdivision which has adopted and has the authority to enforce an inspection and compliance program at least as stringent as the standards for siting, layout, construction, closure, reconstruction, alteration, modification, repair, inspection, and pumping provided by the Private Onsite Wastewater Treatment System Contractors Certification and System Registration Act and rules and regulations under the act adopted and promulgated by the council.

Revocation, Suspension or Refusal to Grant Certificatication

Statute:

Neb. Rev. Stat. § 81-15,249; The director may revoke, suspend, or refuse to grant or renew a certificate issued pursuant to the Private Onsite Wastewater Treatment System Contractors Certification and System Registration Act, following opportunity for hearing, upon any reasonable ground, including, but not limited to, the following: (1) The certificate holder has engaged in fraud or deception; (2) the certificate holder has failed to meet the requirements of the act, the Environmental Protection Act, or rules and regulations of the council; (3) the certificate holder is unable to properly perform duties required by the Private Onsite Wastewater Treatment System Contractors Certification and System Registration Act; (4) the certificate holder has failed to maintain the minimum requirements of a certificate holder under the act; (5) the certificate holder has failed to demonstrate the required continuing education proficiency under the act; or (6) the certificate holder has failed to perform any other requirements of a certificate holder in accordance with the act or the rules and regulations adopted under the act.

Registration of Onsite Wastewater Systems

On or after January 1, 2004, any onsite wastewater treatment system constructed, reconstructed, altered, modified, or otherwise changed by a certified professional, professional engineer, or registered environmental health specialist shall be registered in accordance with Neb. Rev. Stat, § 81-15,248(2).

Statute:

Neb. Rev. Stat. § 81-15,248(2); Any private onsite wastewater treatment system constructed, reconstructed, altered, or modified by a certified professional, professional engineer licensed in Nebraska, or registered environmental health specialist registered in Nebraska shall be registered with the department by the certified professional, professional engineer, or registered environmental health specialist within forty-five days of completion of the construction, reconstruction, alteration, or modification. The certified professional, professional engineer, or registered environmental health specialist shall submit the registration on forms provided by the department and shall include the registration fee. The registration fee shall be fifty dollars until rules and regulations adopted and promulgated under the act provide a schedule of system registration fees adequate to cover direct and indirect program costs.

Private Onsite Wastewater Treatment System Advisory Committee

Members of the Private Onsite Wastewater Treatment System Advisory Committee, as created by Neb. Rev. Stat. **§ 81-15,24**5, who are appointed by the Director, will serve at the pleasure of the Director, but not for more than two four year terms unless a replacement member cannot be found. The Director will appoint a replacement for any member who resigns or otherwise concludes his or her term on the committee for any position which the Director made the initial appointment.

Statute

Neb. Rev. Stat. § 81-15,245; The Private Onsite Wastewater Treatment System Advisory Committee is created. The advisory committee shall be composed of the following eleven members:(1) Seven members appointed by the director as follows:(a) Five private onsite wastewater treatment system professionals; and(b) Two registered environmental health specialists or officials representing local public health departments which have established programs for regulating private onsite wastewater treatment systems;(2) The chief executive officer of the Department of Health and Human Services or his or her designee;(3) The Director of Environment and Energy or his or her designated representative; and(4) One representative with experience in soils and geology and one representative with experience in biological engineering, both of whom shall be designated by the vice chancellor of the University of Nebraska Institute of Agriculture and Natural Resources. Members shall be reimbursed for expenses as provided in sections 81-1174 to 81-1177. The department shall provide administrative support for the advisory committee.

NEBRASKA
Good Life. Great Resources.
DEPT. OF ENVIRONMENT AND ENERGY

Pete Ricketts, Governor

PRIVATE ONSITE WASTEWATER TREATMENT FACILIITY GENERAL CONSTRUCTION and OPERATION PERMIT

PERMIT NUMBER: GTS220000
Permit Name: Septic Tank and Subsurface Leach Field

Project Description: Private Onsite Wastewater Treatment System (Septic Tank System)

Revised or Superseded Construction Permits: none

Pursuant to Nebraska Administrative Code Title 124, this general construction permit approves the construction of specific types of onsite wastewater treatment systems. This permit document and the associated onsite wastewater treatment system registration form make up the complete permit for the owner of the dwelling/non-dwelling facility identified in the registration.

Compliance with this permit will not be a defense to any enforcement action resulting from endangering the environment, health and human safety, or violating any State statute, regulation, or local ordinance. The permit holder will assure that the installation, operation, and maintenance of all equipment is in compliance with all of the conditions of this permit.

Pursuant to a Delegation Memorandum dated July 1, 2021, and signed by the Director, the undersigned herby issues this permit on behalf of the Director under the authority of Nebraska Administrative Code Title 124 – On-site Wastewater Treatment Systems.

6/27/2022
Date

Shelley Schneider
Permitting and Engineering Division Administrator

Department of Environment and Energy
P.O. Box 98922
Lincoln, Nebraska 68509-8922

Jim Macy, Director
OFFICE 402-471-2186 FAX 402-471-2909
ndeq.moreinfo@nebraska.gov

Table of Contents

I. Definitions

"**Baffle**" means a partition installed in a septic tank for proper operation of the tank and to provide maximum retention of solids, and includes sanitary tees.

"**Bed or seepage bed**" means an excavated or below-grade soil absorption system containing treatment material and an effluent distribution system where the treatment material is wider than 36 inches where pipes are used for distribution or wider than five feet where chambers are used for distribution. The maximum width of a bed is limited to 20 feet.

"**Bedrock**" means solid rock exposed at the surface of the earth or overlain by unconsolidated material.

"**Bedroom**" means any room within a dwelling that might reasonably be used as a sleeping room.

"**Bentonite**" means high swelling clay derived from a chemically altered volcanic ash.

"**Blackwater**" means wastes carried off by toilets, urinals, and kitchen drains. Blackwater is wastewater for the purposes of these regulations.

"**Building drain**" means that portion of the lowest horizontal piping of a drainage system which receives the wastewater discharge from within the walls of the building and conveys it to the building sewer beginning 30 inches outside the building footings.

"**Building sewer**" means that part of the drainage system extending from the end of the building drain to a treatment system or other approved point of disposal.

"**Certified Professional**" means a private onsite wastewater treatment system professional certified under the Private Onsite Wastewater Treatment System Contractors Certification and System Registration Act to perform the tasks for which the certification has been issued.

"**Chamber or chambers**" means a pre-formed manufactured conduit with an open-bottom configuration used to distribute effluent in a soil absorption system.

"**Closure or close**" means the proper cleanup and decommissioning of an onsite wastewater treatment system after its use has been discontinued.

"**Construction**" means the installation of an onsite wastewater treatment system or the replacement, reconstruction, alteration, modification, expansion, or closure of an existing system

including the installation of required wastewater lagoon fencing. Construction includes excavation or similar activity related to the installation, replacement, reconstruction, alteration, modification, or expansion of an onsite system, or closure of an onsite system. For the purposes of subdivision review and approval, "construction" means physical activity on a development area including the building of roads, cut and fill, grading, installation of utilities, construction of any foundations, buildings or structures for the development, and construction work on drainage, piping, trenching, lighting, foundations, or other site activities. Construction does not include siting, soil percolation testing, or soil boring.

"**Department**" means the Nebraska Department of Environment and Energy.

"**Depth marker or depth gauge**" means a device used to measure the liquid level present in a septic tank, wastewater lagoon, or other onsite wastewater treatment system.

"**Design flow**" means the maximum volume of wastewater estimated to be generated by a dwelling or non-dwelling facility in a twenty-four-hour period. It includes both a typical operating capacity and a surge capacity for the system during periodic heavy use events. The sizing and design of the onsite wastewater treatment system components are based on the design flow.

"**Director**" means the Director of the Department of Environment and Energy.

"**Distribution box**" means a watertight box that receives effluent from a wastewater treatment component and distributes the flow by gravity to each individual section of a soil absorption system at a rate proportional to the bottom surface area of that section.

"**Distribution system**, distribution piping, or distribution line" means piping or other devices which distribute effluent within a soil absorption system either by gravity (gravity distribution system) or pressure (pressure distribution system).

"**Domestic waste or domestic wastewater**" means human body waste and household type wastes including bath and toilet wastes, household laundry wastes, household kitchen wastes, and other similar wastes from a dwelling or a non-dwelling facility. Domestic waste or wastewater does not include drainage from roofs; footing or foundation drains; process waste from any industrial, agricultural, or commercial establishment; automotive or industrial chemicals or petroleum products; kitchen waste or wastewater from a restaurant or food preparation facility; water carrying animal waste or commercial process water or wastewater; or similar waste.

"**Dose or dosing**" means the use of a pump or siphon device to convey intermittent discharges of effluent by gravity or pressure distribution to a soil absorption system. Dosing is characterized by brief periods of high flow followed by long periods of no flow.

"**Dosing chamber or dosing tank**" means a watertight receptacle containing a pump or siphon device and that retains effluent until it is intermittently pumped or siphoned to the distribution system or soil absorption system.

"**Drop box**" means a watertight box that receives the discharge of effluent from a septic tank and provides serial or sequential distribution of effluent by gravity to each soil absorption system trench where such trenches are installed at progressively lower elevations.

"**Dwelling**" means a building, structure, or place used or intended to be used for human occupancy as a single family or multi-family residence and which generates domestic wastewater. If any portion of the wastewater generated at such a building, structure or place is a non-domestic wastewater, the facility shall be considered a non-dwelling facility.

"**Effluent**" means the liquid flowing out of a septic tank or other treatment component of an onsite wastewater treatment system.

"**Encroachment**" means an intrusion on a required setback distance.

"**Failed or Failing**" means an unauthorized discharge of effluent or wastewater: on the surface of the ground; or to a cesspool, seepage pit, dry well, or leaching pit; or to a soil absorption system with less than four feet to groundwater or other limiting soil characteristics; or which threatens to cause pollution of any air, water, or land of the State; or which threatens public health.

"**Fill**" means soil, rock, gravel, or waste material which has been placed over the original soil or bedrock and is characterized by a lack of distinct horizons or color patterns as found in naturally developed, undisturbed soils.

"**Filter material or filter media or treatment media**" means washed-gravel, rock, crushed stone, slag, clean gravel, or tire chips, any of which that range in size from one-quarter inch to 2½ inches. The filter media shall be free of clay, silt, rubber crumbs, and other fine material. Flat slabs of tire are not acceptable for use as tire chips. Crushed stone shall be durable and non-calcareous.

"**Gravelless distribution system**" means a distribution pipe, chamber, or other conduit designed for use in a soil absorption system without filter material.

"**Gravity Distribution or Gravity Dosing**" means to intermittently discharge effluent using the force of gravity to distribute effluent to a soil absorption system.

"**Graywater**" means all domestic waste excluding blackwater and including bath, lavatory, laundry, and sink waste except kitchen sink waste. Graywater is wastewater for the purposes of these regulations.

"**Groundwater**" means water occurring beneath the surface of the ground that fills available openings in rock or soil materials such that they may be considered saturated.

"**Holding tank**" means a tank for the storage of wastewater until it can be transported to a point for proper disposal.

"**Industrial waste**" means wastewater not otherwise defined as domestic wastewater, including the runoff and leachate from areas that receive pollutants associated with industrial or commercial storage, handling, or processing.

"**Influent**" means wastewater flowing into an on-site wastewater treatment system component or device.

"**Layout**" means the practice of determining wastewater design flows and loadings, selecting system type, sizing and selecting system components, or locating system components for the purpose of construction, reconstruction, alteration or modification of an onsite wastewater system.

"**Liner**" means the material or substance used to line the bottom of a wastewater lagoon, sand filter, wetlands cell, or other onsite wastewater treatment system so that percolation of liquids through the soil is controlled.

"**Loamy sand**" means a soil material containing 70 to 85 percent sand, up to 30 percent silt, and up to 15 percent clay.

"**Native soil**" means soil that is naturally occurring, formed by normal geologic and biological processes, which is characterized by the distinct soil horizons or color patterns found in naturally developed, undisturbed soil.

"**Non-dwelling facility**" means a building, structure, place of business, place of gathering, or waste collection system which is not a dwelling and which generates wastewater.

"**Onsite wastewater treatment system**" means any system of piping, treatment devices, or other appurtenances that convey, store, treat, or dispose of domestic or non-domestic wastewater, but not including wastewater from a livestock waste control facility, on the property where it originates, or on nearby property under the control of the user, which system is not connected to a public sewer system. An onsite wastewater treatment system begins at the end of the building drain. A system using a lagoon is limited to a maximum design flow of 1,000 gallons per day to be considered an onsite wastewater treatment system. The word "onsite" used in this Title is equivalent to the word "on-site".

"**Percolation rate**" means the rate, usually expressed in minutes per inch or mpi, which is obtained from soil percolation tests conducted to help determine the amount of soil absorption area required for a soil absorption system.

"**Percolation test**" means the determination of the suitability of an area for subsurface wastewater effluent disposal by a standardized test of the rate at which the undisturbed soil in an excavated pit or hole of standard size will absorb liquid per unit of surface area.

"**Plastic limit**" means the water content where soil transitions between brittle and plastic behavior characterized by the point at which a thread of soil begins to crumble when rolled between hands to a diameter of one-eighth inch.

"**Pollution**" means the man-made or man-induced alteration of the chemical, physical, biological, or radiological integrity of water of the State.

"**Private well**" means a well which provides water supply to less than 15 service connections and regularly serves less than 25 individuals.

"**Pressure distribution or pressure dosing**" means the use of a pump to intermittently discharge effluent under positive pressure through a network of piping designed to evenly distribute the effluent throughout a soil absorption system.

"**Professional Engineer or P.E.**" means a person who is licensed as a professional engineer by the Nebraska Board of Engineers and Architects.

"**Professional development hour or PDH**" means at least 60 minutes spent in Department approved educational activity.

"**Pump tank**" means a watertight container with a capacity over 50 gallons which houses a pump or pump unit and associated appurtenances used to convey effluent or sewage. The capacity of a pump tank is measured at the normal high (pump start) operating level. The

capacity of a tank housing a pump or used as a pump tank is not considered part of the treatment volume required for a septic tank for the purposes of these regulations.

"**Pump chamber or pump basin**" means a watertight container with a capacity of 50 gallons or less and which houses a float or liquid level activated pump and associated appurtenances used to convey sewage or effluent. The capacity of a pump chamber is measured at the normal high (pump start) operating level. The capacity of a chamber housing a pump or used as a pump basin is not considered part of the treatment volume required for a septic tank and is not subject to tank setbacks for the purposes of these regulations.

"**Pumping**" means the practice of maintaining septic tanks, grease trap tanks, holding tanks, and any other components of onsite wastewater systems through the removal, transportation, and disposal of accumulated liquid and solid wastes.

"**Registered Environmental Health Specialist or REHS**" means a person who has the educational requirements and has had experience in the field of environmental sanitation required by Nebraska Revised Statutes §71-3703 and is registered with the Nebraska Board of Registration for Environmental Health Specialists in accordance with Nebraska Revised Statutes §71-3702 through §71-3715.

"**Repair**" means the correction of a mechanical, electrical, or minor structural defect in an existing onsite wastewater system component such as, but not limited to, sealing a crack in a tank lid, repairing or replacing a tank baffle or access manhole riser, repairing or replacing a pump or electrical switch, leveling a distribution box, replacing a building sewer pipe, or replacing a cracked pipe between the septic tank and soil absorption system. Repair does not include replacement, reconstruction or modification of a tank or soil absorption system; extension or enlargement of a soil absorption component and system; replacement of a distribution pipe; or repair or replacement of a metal or concrete block tank.

"**Sand**" means a soil material composed by weight of at least 90 percent of soil particles ranging in size between 0.05 and 2.0 mm or 0.002 inches and 0.08 inches.

"**Sandy soil**" means the soil having the following textures: sands, fine sands, loamy fine sands, and loamy very fine sands.

"**Septic system**" means an onsite wastewater treatment system that has a septic tank for primary treatment and a trench or bed soil absorption system for secondary treatment of wastewater.

"**Septic tank**" means a watertight covered receptacle designed and constructed to receive wastewater from a building sewer, attenuate flows, store digested solids through a period of

detention to allow settleable and floating solids to separate from liquids, allow digestion of organic matter by anaerobic bacteria, and allow the clarified liquid to discharge for additional treatment and final dispersal to a soil absorption system.

"**Sewage**" means any water carrying domestic waste exclusive of footing and roof drainage, from any industrial, agricultural, or commercial establishment or any dwelling or any other structures. Domestic waste includes but is not limited to liquid waste produced by bathing, laundry, cooking operations, and liquid waste from toilets and floor drains and specifically excludes animal waste and commercial process water.

"**Site**" means the area bounded by the dimensions required for the proper location of the soil absorption system.

"**Siting**" means the practice of the investigation, examination, and reporting of design-controlling physical characteristics of an area at which an onsite wastewater system is to be constructed, reconstructed, altered, or modified; including, but not limited to topography, drainage, landscape position, soil evaluation, location and type of wells, water lines, property lines, foundations, and surface water features.

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

"**Sludge**" means the accumulated settled solids deposited from wastewater and containing water to form a semi-liquid mass.

"**Soil absorption system**" means a drainfield, leaching area, or seepage bed, including the effluent application or distribution system used for the soil based dispersal and treatment of wastewater or effluent. The soil absorption system includes the infiltrative soil surface in the absorption trench, the undisturbed soil between and around the trenches, and a final cover of suitable soil to stabilize the completed installation, support vegetative growth and shed runoff. The soil absorption system is the part of the onsite wastewater treatment system that uses the soil to further treat and dispose of effluent from the onsite wastewater treatment system in a manner that does not result in a point source discharge and does not create a nuisance, health hazard, or ground or surface water pollution.

"**Soil Evaluation**" means the practice of the investigation, examination, testing, and reporting of design-controlling characteristics of the soil and subsurface features at an area at which an onsite wastewater soil absorption system is to be constructed, reconstructed, altered, or modified; including, but not limited to soil type, structure, permeability, absorption capacity, and percolation rate, and the depth to seasonal high groundwater, bedrock, or other subsurface barrier layers.

"**Tank**" means a watertight structure or container used to hold wastewater for such purposes as aeration, dilution, disinfection, equalization, mixing, sedimentation, storage, collection for transport, treatment, or addition of chemicals.

"**Trench or absorption trench**" means an excavation containing filter material and an effluent distribution system used for the distribution of effluent in a soil absorption system.

"**Wastewater**" means liquid and water borne wastes from a dwelling or non-dwelling facility. Wastewater includes both blackwater and graywater.

II. General Conditions

A. Coverage under this permit is granted to an owner of a dwelling/non-dwelling facility who sites, constructs, reconstructs, alters, or modifies a septic system provided:

1. The system is sited, constructed, reconstructed, altered, or modified according to the standards set forth in the Specific Conditions section;
2. The system is sited, constructed, reconstructed, altered, or modified by a certified professional authorized to perform the work in accordance with Title 124;
3. Within 45 days from the completion of construction, reconstruction, alteration, or modification, the system is registered and applicable fees are paid in accordance with Title 124;
4. A copy of the following information is kept on the premises of the facility using the onsite wastewater treatment system and made available to the Department by the owner or installer upon request:
    a. Certification signed by a professional engineer, registered environmental health specialist, or certified professional of compliance with the requirements found in the Specific Conditions section of this permit. A certification number must accompany the signature;
    b. An appropriately scaled drawing of the onsite wastewater treatment system, which specifies location, setbacks, capacity, materials of construction, and the construction details for all components of the system, including pump and pump tank or pump chamber specifications for any system using a pump. The scaled drawing must be on no less than 8.5 by 11 inch paper and must be neatly drawn with appropriate dimensions and fixed reference point indicated;
    c. Data and results for soil percolation tests or seepage tests performed in accordance with Title 124; and
5. Upon review of the system registration and any additional documentation if requested, the Department determines the system qualifies for coverage under this permit.
6. The system is operated in accordance with the conditions of this permit and Title 124.

B. Coverage under this permit is granted to the owner of the dwelling/non-dwelling facility identified in the registration.

1. Coverage under this permit will transfer from the owner identified in the registration to any subsequent owner of the facility.
2. Subsequent owners maintaining coverage under this permit are subject to all obligations and conditions described in this permit.

C. Coverage under this permit may be revoked for cause in accordance with Title 124.

D. Coverage under this permit does not relieve an owner or certified professional from the responsibility to comply with all applicable portions of Title 124, *On-site Wastewater Treatment Systems* and any other requirements under local, State, or Federal law.

1. Nothing in this permit will prevent more stringent local requirements from applying.

E. Any permit noncompliance will constitute a violation of the Private Onsite Wastewater Treatment System Contractors Certification and System Registration Act and/or the Nebraska Environmental Protection Act, and is grounds for enforcement action or permit revocation.

F. Any owner or operator who failed to submit any relevant facts or who submitted incorrect information in a general permit application, upon becoming aware of such failure or incorrect submittal, must promptly notify the Department, and if ineligible for coverage under this general permit, must submit a construction permit application under the provisions of Title 124.

G. The owner of a facility must allow a Department representative to enter upon the premises at reasonable times in order to inspect the onsite wastewater treatment system and to sample and monitor any area affected by the system.

H. This permit may be revoked in accordance with Title 124.

III. Specific Conditions

A. **Site Evaluation**. Each proposed site for the location of an onsite wastewater treatment system must be evaluated by a professional engineer, registered environmental health specialist, Journeyman Installer, or Master Installer, and the following information must be recorded and provided to the Department on request.

1. The type, size, location, and elevation of the proposed system, clearly identified on a scaled drawing of sufficient size which will include: the legal description and survey of the lot and immediate vicinity property lines, buildings, water supply wells, buried water pipes and utility lines, the ordinary high water mark of lakes, rivers, streams, and the location and the type of water supply wells within 1000 feet of the proposed onsite wastewater treatment system.
2. Depth to the seasonal highest measured or estimated groundwater table and to the bedrock or other barrier layer surface, if this depth is less than the depth of the seasonal high groundwater table, along with a detailed description of the method used to determine depth. If the depth to seasonal high groundwater or to the bedrock or other barrier layer is less than 10 feet, soil borings or other site specific methods are required to be used.
3. Direction of groundwater flow.
4. Soil conditions, properties, and soil percolation test locations, data and results

5. Additional information may be required as part of the application process for a permit or subdivision approval.

B. Design Flow. The design flow for the system must:

1. Be less than 1,000 gallons of domestic wastewater per day.
2. Not include wastewater other than domestic wastewater
3. For a single-family dwelling, the design flow shall not be less than 100 gallons per day plus 100 gallons per day per bedroom. (See Table 1)
4. For a multi-family dwelling or multiple single-family dwellings connected to a common onsite wastewater system component, the design flow shall not be less than 100 gallons per day per dwelling unit plus 100 gallons per day per bedroom based on the total number of bedrooms. (See Table 2)
5. For a non-dwelling facility, the design flow shall not be less than the highest daily wastewater flow that is calculated to be generated based on the characteristics of the occupancy and use of the facility.
    a. For non-dwelling facilities, the quantity of flow generated for various occupancy and uses shall be consistent with nationally recognized data published by the United States Environmental Protection Agency, state onsite wastewater regulatory agencies, or nationally recognized plumbing codes. If use of a non-dwelling facility includes residential occupancy, the estimated flow from the non-residential use shall be added to a residential design flow of 100 gallons per day plus 100 gallons per day per bedroom.

Table 1 – Design Flow for Single Family Dwelling

Number of Bedrooms*	1	2	3	4	5	6	7	8	9
Design Flow, Gallons per Day	200	300	400	500	600	700	800	900	1,000

Table 2 – Design Flow for Multi-Family Dwelling

Number of Dwelling Units	Total Number of Bedrooms						
	2	3	4	5	6	7	8
	Design flow in Gallons per Day						
2	400	500	600	700	800	900	1,000
3	500	600	700	800	900	1,000	**
4	600	700	800	900	1,000	**	**
5	700	800	900	1,000	**	**	**

C. **Groundwater Table.** The seasonal high water elevation of the groundwater table must be at least four feet below the bottom of the infiltrative surface of the soil absorption system in order to provide adequate filtration through the soil and avoid pollution of the groundwater. One or more of the following sources or types of information shall be used to determine the seasonal high water elevation of the groundwater.

1. U.S. Department of Agriculture Natural Resources Conservation Service soils maps and soil interpretation records.
2. Evaluation of soil color and the presence or absence of mottling.
3. Evaluation of impermeable or semi-permeable soil layers.
4. Measured water levels from nearby test holes, observation wells, or water wells.

D. **Setback Distances.** The installation of a system components is prohibited within the horizontal setback distances in Table 2.1 in Title 124. (See following page)

Lagoon, Tank and Soil Absorption System Setbacks (Ref. Title 124, Table 2.1)

	Minimum Setback Distance feet (meters)		
Item	Tanks	Absorption, Infiltrative, and Evaporative Systems	Lagoons
Surface Water	50 ft. (15.2 m)	50 ft. (15.2 m)	50 ft. (15.2 m)
Private Drinking Water Wells	50 ft. (15.2 m)	100 ft. (30.5 m)	100 ft. (30.5 m)
Public Drinking Water Supply Wells:			
Non-Community System*	50 ft. (15.2 m)	100 ft. (30.5 m)	100 ft. (30.5 m)
Community System	500 ft. (152.4 m)	500 ft. (152.4 m)	1000 ft. (304.8 m)
Community System when a septic system or soil absorption system of > 1000 gpd is installed	500 ft. (152.4 m)	1000 ft. (304.8 m)	N/A
Horizontal Closed Loop Geothermal Wells (trenched or dug and above the ground water table)	25 ft. (15.2m)	25 ft. (15.2m)	25 ft. (15.2m)
All Other Water Wells	50 ft. (15.2 m)	100 ft. (30.5 m)	100 ft. (152.4 m)
Water Lines:			
Pressure Main/Service Connection/Suction Lines	10 ft. (3.1 m)	25 ft. (7.6 m)	25 ft. (7.6 m)
Property Lines	5 ft. (1.5 m)	5 ft. (1.5 m)	50 ft. (15.2 m)
Trees	NA	NA	50 ft. (15.2 m)
Parking area, driveway, sidewalk, or other impermeable surface or cover	5 ft. (1.5 m)	5 ft. (1.5 m)	50 ft. (15.2 m)
Foundation:			
Class 1	15 ft. (4.6 m)	30 ft. (9.1 m)	100 ft. (30.5 m)
Class 2	10 ft. (3.1 m)	10 ft. (3.1 m)	100 ft. (30.5 m)
Class 3	7 ft. (2.1 m)	10 ft. (3.1 m)	50 ft. (15.2 m)
Neighbor's Foundation:			
Class 1	25 ft. (7.6 m)	40 ft. (12.2 m)	200 ft. (61.0 m)
Class 2	20 ft. (6.1 m)	30 ft. (9.1 m)	200 ft. (61.0 m)
Class 3	15 ft. (4.6 m)	20 ft. (6.1 m)	100 ft. (30.5 m)

*See NAC Title 179 – Public Water Supply Systems, 7-010, for a complete definition for Non-community systems. It should be noted that some non-community systems may have more stringent setback requirements, per Title 179.

* Class 1 means a basement, a non-basement footing, swimming pool, or slab-on-grade living quarters where any portion of the living quarters basement, footing, or slab is lower in elevation than the onsite wastewater treatment system component.

* Class 2 means a basement, a non-basement footing foundation, trailer house, swimming pool, or slab-on-grade living quarters higher in elevation than the on-site wastewater treatment system. Any other foundation that is not a Class 1 or Class 3 is a Class 2 Foundation

* Class 3 means slab-on-grade construction that is not used as living quarters.

E. Soil Percolation. Soil percolation tests must be conducted in the area where the soil absorption system will be located. Such tests shall not be made on disturbed ground or frozen ground. Where fissured or creviced formations are encountered below the ground surface, the Department will be consulted for assistance. Soil percolation tests must be conducted by a professional engineer, registered environmental health specialist, or a certified professional holding a certificate in the category of Inspector, Soil Evaluator, Master Installer, or Journeyman Installer, and using a methodology approved by the Department. The Department may require verification of percolation rates when submitted results are inconsistent with other known data.

1. Soil is unsuitable for a soil absorption system if the percolation rate is faster than five minutes per inch or is slower than 60 minutes per inch, except as provided for below.
2. Soils with a percolation rate faster than five minutes per inch are acceptable if a 12-inch thick loamy sand soil liner with a percolation rate of 15 to 20 minutes per inch is installed in the trench or bed in accordance with Section K. The trench or bed is then sized based on this soil liner percolation rate.

F. Tank Construction.

1. A septic, holding, dosing, pumping, or other tank used in an onsite wastewater treatment system must be constructed of materials not subject to excessive corrosion or decay and must be watertight. Acceptable tank construction materials are concrete, fiber reinforced plastic, high density plastic, and fiberglass.
2. When precast and cast in place reinforced concrete tanks are used, they must be properly cured and of watertight construction.
3. All concrete interior surfaces of a tank that are exposed to air must be coated with a bitumastic or similar protective compound beginning at an elevation 3 inches below the normal effluent operating level to minimize corrosion and degradation of the concrete.
4. Concrete block, brick and metal are not acceptable materials for new tank construction.
5. The tank must be designed to withstand soil pressures when empty and not collapse or undergo excessive deflection which would prevent the proper operation of the system, crack or distort components of the system such as the baffles, prevent proper sealing of lids over manholes and inspection ports, reduce capacity below the required minimum tank design capacity, or reduce the design working volume of the system.

6. All septic tanks must be permanently marked to specify the capacity in gallons, manufacturer, and the manufacturer's address. The gallon and manufacturing identification label must be located next to the manhole towards the inlet side.

G. Tank Design and Placement. For coverage under this permit, all septic tanks and holding tanks regardless of material or method of construction will conform to the following criteria.

1. The depth from the invert of the outlet to the floor of the tank (liquid depth) of any septic tank or compartment thereof must not be less than 36 inches and a liquid depth greater than 78 inches shall not be considered in determining tank capacity. The diameter of a septic tank shall not be less than 60 inches and the length must be approximately two times the width.
2. No septic tank or compartment thereof shall have an inside horizontal dimension less than 24 inches.
3. Inlet and outlet connections of the septic tank must be provided with baffles.
4. The space in the septic tank between the liquid surface and the top of the inlet and outlet baffles must be equivalent to at least 20 percent of the total required liquid capacity, except that in horizontal cylindrical tanks and tanks with other irregular, non-rectangular cross-sectional shapes this space must be equivalent to at least 15 percent of the total required liquid capacity.
5. Inlet and outlet baffles must be constructed of acid resistant concrete, acid resistant fiberglass, or plastic.
6. Sanitary tees must be affixed to the inlet or outlet pipes with a permanent waterproof adhesive. Baffles must be integrally cast with the septic tank, affixed with a permanent waterproof adhesive, or affixed with stainless steel connectors top and bottom.
7. The septic tank inlet baffle must extend at least six inches but not more than 20 percent of the total liquid depth below the liquid surface and at least one inch above the crown of the inlet sewer.
8. The septic tank outlet baffle and the baffles between compartments must extend below the liquid surface a distance equal to approximately 40 percent of the liquid depth, except that the penetration of the indicated baffles or sanitary tees for horizontal cylindrical tanks and tanks with other irregular, non-rectangular cross-sectional shapes must be approximately 35 percent of the total liquid depth. In no case shall the baffles or tees extend less than six inches above the liquid surface.
9. There must be at least one inch between the underside of the top of the septic tank and the highest point of the inlet and outlet devices.
10. The septic tank inlet invert must be at least one inch above the outlet invert.
11. The septic tank inlet and outlet must be located opposite each other along the axis of maximum dimension and must be constructed of non-corrosive materials. The

horizontal distance between the nearest points of the inlet and outlet devices must be at least four feet. A septic tank with two or more compartments may have the inlet and outlet located along the end of the tank or within 12 inches of the end of the tank as long as the inlet and outlet baffle requirements identified in this chapter are met.

12. Sanitary tees must be at least four inches in diameter. Inlet baffles must be located no less than six inches or no more than 12 inches measured from the end of the inlet pipe to the nearest point on the baffle. Outlet baffles must be located six inches measured from beginning of the outlet pipe to the nearest point on the baffle.
13. Septic Tank or Holding Tank Access
    a. There must be one or more access manholes at least 12 inches in diameter and located within six feet of all walls of the tank. Each access manhole must have a properly secured cover.
        i. The manhole must extend through the top of the tank to a point within 12 inches but at least six inches below grade for a tank with no manhole riser. The manhole cover must be covered with at least six inches of soil unless otherwise properly secured to prevent unwarranted access.
        ii. For a tank with a manhole riser, the riser must be sufficiently large to allow for access and removal of the manhole cover. The manhole riser may extend to or above the ground surface. The manhole riser must have a properly secured cover to prevent unwarranted access.
    b. Each septic tank must have an inspection pipe at least six inches in diameter over both the inlet and outlet devices. The inspection pipe must extend to or above the ground surface and be capped flush or above finished grade. The inspection pipe cap must be properly secured to prevent unwarranted access. A manhole access riser that meets the requirements of this Title may be used over both the inlet and outlet devices to satisfy the inspection pipe requirement.
14. Single Tank
    a. Where a septic system has a single septic tank larger than 3,000 gallons that is fabricated as a single unit, the tank must be divided into two or more compartments.
    b. When a septic tank is divided into two compartments, the volume in the first compartment in the direction of flow must not be less than one-half or more than two-thirds of the total volume of the tank.

c. When a septic tank is divided into three or more compartments, one-half of the total volume must be in the first compartment and the other half equally divided in the other compartments.
d. Connections between compartments must be baffled so as to obtain effective retention of scum and sludge. The submergence of the inlet and outlet baffles of each compartment must be as specified in g and h of this section.
e. Adequate venting must be provided between compartments by baffles or by an opening of at least 50 square inches near the top of the compartment wall.
f. Adequate access to each compartment must be provided by one or more manholes.

15. Multiple Tanks
    a. Where more than one septic tank is used to obtain the required liquid volume, the tanks must be connected in series.
    b. The first septic tank must not be smaller than any subsequent tanks in series.
16. Septic tanks must be bedded with at least six inches of sand or fine gravel where rock or other undesirable conditions are encountered. The tank must be placed level. Backfilling the excavation for the tank must be done in layers with sufficient compaction to avoid settling. Backfill material must be free of large stones and debris.
17. A tank subject to flotation, such as one located in an area where the seasonal high water table may be higher than the bottom of the tank, must be properly secured or ballasted to prevent flotation.

H. Tank Capacity.

1. Dwelling
    a. The minimum septic tank capacity for a single family or multi-family dwelling must be determined using the design flow and the tank capacity listed in Table 3. The capacity of any pump tank or pump chamber is not considered part of or applicable to the required minimum septic tank capacity.
    b. For a dwelling served by more than one septic system, the total design flow for the dwelling must be distributed between the separate systems based on the percentage of the design flow that will be conveyed to each system. The minimum septic tank capacity for each system must be as listed in Table 3. In no case shall the minimum septic tank capacity for any system be less than 1,000 gallons.

c. A pump tank serving a dwelling or non-dwelling must have a minimum storage capacity above the normal high (pump start) operating level for one day of flow at the design flow rate.

2. Non-dwelling facility
    a. The liquid capacity of a septic tank serving a non-dwelling facility must be at least equal to 1,125 gallons plus 0.75 times the design flow in gallons per day (gpd) for flows over 1,500 gpd. For flows of 1,500 gpd or less, 1.5 times the design flow may be used but a minimum of a 1,000 gallon tank is required. For a non-dwelling facility served by multiple septic systems, the minimum septic tank capacity for each system must be 1,000 gallons.
3. Septic tank capacity for a single compartment tank must be increased by 50 percent to provide adequate attenuation when a pump is used to deliver wastewater from the building, or after the building drain, into the septic tank.
4. The capacity of a septic tank means the interior volume of the tank below the level of the inside bottom of the outlet or effluent pipe. The capacity must not include the volume of the air space above the normal operating water level of the tank.
5. The capacity of a holding tank or a pump tank means the interior volume of the tank below the level of the inside bottom of the inlet or influent pipe. The capacity must not include the volume of the air space at the top of the tank.

Table 3 - Minimum Septic Tank Capacity for a Dwelling *

Design Flow in Gallons per Day	Septic Tank Capacity in Gallons		
	For Dwelling without a Garbage Grinder or a Large Capacity Tub	Dwelling with a Garbage Grinder or a Large Capacity Tub	Dwelling with a Garbage Grinder and a Large Capacity Tub
200	1,000	1,000	1,000
300	1,000	1,000	1,250
400	1,000	1,250	1,500
500	1,250	1,500	1,750
600	1,500	1,750	2,000
700	1,750	2,000	2,250
800	2,000	2,250	2,500
900	2,250	2,500	2,750
1,000	2,500	2,750	3,000

* A “large capacity tub” means any bathtub or similar fixture with a maximum working volume greater than 50 gallons. A “garbage grinder” is typically used or placed in the kitchen sink drain and may also be referred to as a garbage disposal or waste disposal.

I. Percolation Tests.

1. At least three test holes must be dug and spaced uniformly over the proposed absorption field site. If the difference between the fastest and the slowest measured percolation rate is greater than 20 minutes per inch, or there are other indications that soil conditions are highly variable, a minimum of four test holes and two test holes per lateral is required.
2. These holes must be dug or bored with horizontal dimensions of from four to twelve inches and vertical sides to the depth of the bottom of the proposed distribution trench. Holes can be bored with a posthole type auger.
3. Roughen or scratch the bottom and sides of the holes to provide a natural surface. Remove all loose material from the hole. Place about two inches of 1/4 to 3/4 inch gravel in the hole to prevent bottom scouring.
4. Fill the hole with clear water to a minimum depth of 12 inches over the gravel. By refilling, if necessary, or by supplying a surplus reservoir of water (automatic siphon), keep water in the hole for at least four hours and preferably overnight.

5. Soils with moderately slow permeability or that contain greater than 30 percent clay will require several days soaking to reach saturation, especially when the soil is dry, in order to obtain the required saturation prior to making measurements.
6. In sandy soils containing little or no clay, soaking is not necessary. If after filling the hole twice with 12 inches of water the water seeps completely away each time in less than 10 minutes then the test can proceed immediately and described in below.
7. Percolation rate measurements should be made on the day following the saturation process, except in highly permeable sandy soils with fast percolation rates as noted below or in less permeable soils with high clay content and slow percolation rates, as note above. For all soils, the percolation rate of the planned last test measurement for any one test hole should approach a uniform rate and not vary more than 10 percent from the previous measurement for that test hole.
8. If the water remains in the test hole after overnight saturation, adjust the water depth to a minimum of six inches over the gravel. From a fixed reference point, measure the drop in water level during an approximate 30 minute period.
9. If no water remains in the hole after overnight saturation, add clear water to a depth of six inches over the gravel. From a fixed referenced point, measure the drop in water level at approximate 30 minute intervals over a four hour period, refilling the hole to a depth of six inches as necessary after each 30 minute period. The drop which occurs during the final 30 minute period is used to calculate the percolation rate.
10. A shorter measurement time interval of 10 minutes may be used for sandy or coarse grained soils with fast permeability where the first six inches of water seeps away in less than 30 minutes even after the overnight saturation or swelling period. Six test measurements must be taken, one at the end of each 10 minute interval, refilling the hole to a depth of six inches as necessary after each interval. The drop that occurs during the final 10 minutes is used to calculate the percolation rate.
11. The percolation test data must be recorded and maintained on the premises, and made available to the Department by the owner or installer upon request.
12. Other methods of determining the percolation rate may be approved by the Department if the method is recognized as providing accurate and consistent results.
13. The percolation rate of a test hole (the time in minutes for the water level in the test hole to drop one inch) is determined by dividing the number of minutes elapsed by the water level drop in inches during the final measurement period. The design percolation rate for the soil absorption system must be determined by averaging the percolation rate of all the test holes unless the difference between the fastest and slowest measured rates in an area is more than 20 minutes per inch, in which case the slowest percolation rate must be used. If any percolation test is faster than five minutes per inch or slower than 60 minutes per inch, then see Section J.

J. Site Acceptability Based on Soil Conditions

1. Soil is unsuitable for a soil absorption system if the percolation rate is faster than five minutes per inch or is slower than 60 minutes per inch, except as provided for below.
2. Soils with a percolation rate faster than five minutes per inch are acceptable if a 12-inch thick loamy sand soil liner with a percolation rate of 15 to 20 minutes per inch is installed in the trench or bed in accordance with Section K. The trench or bed is then sized based on this soil liner percolation rate.
3. A soil absorption system must not be installed if the percolation rate is slower than 60 minutes per inch unless designed by a professional engineer and a construction permit is issued in accordance with Title 124.
4. Construction of a soil absorption system in fill is prohibited except as provided for in Section K.

K. Trench and Bed Soil Absorption Systems

1. The bottom of trenches and beds must be at least four feet above the seasonal high groundwater table or other barrier layer.
2. A soil absorption system must not be installed in fill, except when the fill material is sand, or when the bottom 12 inches or more of the trench or bed is located in undisturbed native soil below the fill. When constructing a system in sand fill, sufficient time must be allowed after placement of the fill, or sufficient compaction effort applied to the fill to prevent settlement after the system is installed.
3. When installing a trench or bed in soil that has a percolation rate faster than five minutes per inch, a 12-inch thick loamy sand soil liner designed to provide a percolation rate of 15 to 20 minutes per inch must be installed in the bottom and sides of the trench or bed. The loamy sand soil liner must cover the bottom of the trench or bed and extend up the sidewalls of the trench a minimum of nine inches for a soil absorption system that uses filter material. For a soil absorption system that does not use filter material, the liner must cover the bottom of the trench and extend up the sidewalls at least to the top of the slotted sidewalls on a gravelless chamber or to the top of the pipe on gravelless pipe. The loamy sand liner must be constructed to provide a percolation rate of 15 to 20 minutes per inch. The soil absorption area must be sized based on the soil liner percolation rate.
4. The bottom of the trench or bed excavation must be level. A trench or bed more than 100 feet in length must be installed using an instrument to insure that the trench or bed is level.
5. A trench or bed for a gravity distribution system must not exceed 150 feet in length. A trench or bed with pressure distribution is not restricted in length when an instrument is used to insure that the trench or bed is level. Dosing must be provided when the distribution system has more than 500 linear feet of distribution line.

6. The bottom and sides of the soil absorption system to the top of the filter material must be excavated in such a manner as to leave the soil in a natural, unsmeared, and uncompacted condition. Excavation shall be made only when the soil moisture content is at or less than the plastic limit.
7. When the percolation rate is slower than 10 minutes per inch, excavation equipment or other vehicles must not be driven on the soil absorption area.
8. The absorption trenches must follow the ground surface contours so that variations in trench depth are minimized.
9. When ground slope is less than 10 percent, there must be a minimum of four feet of undisturbed soil between adjacent trenches and between the septic tanks and the nearest trench. When ground slope is 10 to 20 percent, there must be a minimum of six feet of undisturbed earth between adjacent trenches and between the septic tanks and the nearest trench. When the slope exceeds 20 percent, there must be a minimum of 10 feet of undisturbed soil between adjacent trenches and between the septic tanks and the nearest trench.
10. The trenches or beds must be backfilled and crowned above finished grade to allow for settling. The top six inches of soil must have the same texture and density as the adjacent soil.
11. The minimum depth of cover over the distribution pipes must be at least eight inches. The maximum depth of cover over the distribution pipes must be no more than 36 inches.
12. A soil absorption system must not be installed in an area that has an impermeable surface or where the soil has been compacted excessively by vehicle traffic or parking. No parking area, driveway, or impermeable surface or cover shall be installed, created, or located by the owner, or anyone acting for the owner, over or within five feet horizontally an existing soil absorption system or reserve area.
13. Gravity Distribution Piping and Devices
    a. When a soil absorption system is either located in ground that slopes three percent or less, or, each absorption trench is excavated at the same elevation, septic tank effluent may be conveyed by gravity through piping to the soil absorption system through one of the following distribution devices: a distribution box, drop box or a header pipe.
    b. A soil absorption system in ground with greater than three percent slope must use either gravity distribution through a drop box or pressure distribution unless the bottom of each trench is excavated at the same elevation.
    c. Distribution pipes must be laid level or on a uniform slope away from the distribution device of no more than four inches per 100 feet.

d. Distribution pipes in a seepage bed must be uniformly spaced no more than five feet apart and not more than 30 inches from the side walls of the bed.

14. When a distribution box is used it can be an integral part of the septic tank or a separate unit set on solid ground and anchored in the drainfield. When a distribution box is used the following criteria must be followed.
    a. The distribution box must be set level and arranged so that effluent is either evenly distributed to each distribution line, or serially filling each distribution line consecutively.
    b. Each distribution line must connect individually to the distribution box.
    c. The pipe connecting the distribution box to the distribution line must be of a tight joint construction laid on undisturbed earth or properly bedded throughout its length.
    d. Distribution boxes must be constructed of a durable watertight, non-corrosive material. They must be designed to accommodate the necessary distribution lines.
    e. Distribution boxes must be provided with a minimum 12-inch diameter secured opening which will serve as access for inspection, cleaning, and general maintenance.
    f. The inverts of all outlets must be at the same elevation as measured from a liquid surface in the bottom of the box.
    g. The inlet invert must be at least one inch above the outlet inverts.
    h. The outlet inverts must be at least two inches above the distribution box floor.
    i. When septic tank effluent is delivered to the distribution box 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 flow line.
15. When a header pipe is used the following criteria must be followed.
    a. Header pipe must have a minimum diameter of four inches.
    b. The header pipe must be spaced evenly on both sides of the junction of the leader pipe to the header with an equal number of distribution lines of the same length on each side.
    c. The header pipe must be laid level with direct watertight connections to each drainfield line and the septic tank outlet pipe. The header pipe must be encased in filter material.
16. When a drop box is used the following criteria must be followed.
    a. The drop box must be watertight and constructed of durable materials not subject to excessive corrosion or decay.

b. The invert of the inlet pipe must be at least one inch higher than the invert of the outlet pipe to the next trench.
c. The invert of the outlet pipe to the next trench must be at least two inches higher than the invert of the outlet pipe of the trench in which the box is located.
d. When septic tank effluent is delivered to the drop box by a pump or siphon, the pump or siphon discharge must be directed against a wall or side of the box on which there is no outlet.
e. The drop box must have a removable cover. If the cover is located at or above finished grade it must be secured to help prevent unwanted access.

17. Soil Absorption Systems Where Filter Material Is Used
    a. The trenches must not be less than 18 inches nor more than 36 inches wide for pipe laterals and no more than five feet wide for chambers. For soil absorption systems where filter material is used, any trench wider than 36 inches for pipes and five feet for chambers must be considered a bed and have the required square footage of the soil absorption area or drainfield trench increased by the appropriate absorption bed multiplication factor from Table 4.
    b. There must be a layer of at least six but not more than 24 vertical inches of filter material in the bottom of the trenches and beds below the distribution piping or chamber extending uniformly to the width of the trench.
    c. Distribution pipes and gravity distribution
        i. Distribution pipes used in trenches or beds for gravity flow distribution must be at least four inches in diameter and constructed of sound and durable material not subject to corrosion or decay or to loss of strength under continuously wet conditions. When open joint tile is used, the tile sections must be spaced not less than one-quarter inch nor more than one-half inch apart.
        ii. Perforated pipe used for wastewater distribution pipes must have one or more rows of holes of no less than one-half inch in diameter and no more than three-quarter inch in diameter spaced no more than 36 inches apart. Holes must be spaced to prevent failure of pipe due to loads. Distribution pipes must have a load bearing capacity of more than 1,000 pounds per linear foot.
        iii. Half moon concrete chambers or plastic tile may be used for wastewater distribution and must be placed in trenches resting on concrete blocks suitably placed before filter material is added

unless specifically designed to be self supporting on the filter material.

iv. Plastic chambers meeting the requirements for gravelless chambers installed without filter material may be used for effluent distribution in a trench or bed with filter material and may be installed directly on the trench bottom. For such installations, the width for calculating the trench bottom area must be the width of the filter material covered trench.

v. Bundled expanded polystyrene synthetic aggregate contained in high-strength polyethylene netting in cylinders 9 to 12 inches in diameter specifically designed for use without filter material and meeting the requirements for bundles installed without filter material may be used for effluent distribution in a trench or bed with filter material and may be installed directly on the trench bottom. For such installations, the width for calculating the trench bottom area must be the width of the filter material covered trench.

d. The filter material must completely encase the distribution pipes, chambers, or synthetic aggregate bundles to a depth of at least two inches extending uniformly to the width of the trench.

e. The filter material must be covered with a permeable layer that prevents the movement of fine soil particles into the filter material. Geotextile fabric, or a two-inch layer of hay or straw or similar permeable material shall be used.

18. Soil Absorption Systems Where Filter Material Is Not Used

a. A gravelless distribution system may be used to distribute effluent for treatment in a soil absorption system under the following conditions.

i. The pipes, chambers, or other conduit must be of durable, non-degradable construction specifically designed for installation without filter material.

ii. The pipes, chambers, or other conduit must be able to meet load requirements of 1,000 pounds per linear foot.

b. Effective Soil Absorption System Trench Bottom Area When Filter Material Is Not Used

i. The effective width of the trench for a system using pipe wrapped with filter fabric, specifically designed for use without filter material, shall be 75 percent of the outside perimeter of the pipe, for up to a 12 inch diameter pipe. This permit does not apply and a construction permit is required when using pipe larger than 12 inches in diameter. The effective width calculation does not apply when filter material is used in the trench.

ii. The effective width of the trench for a system using gravelless chambers with at least six inches of slotted sidewall, specifically designed for use without filter material, may be up to 1.5 times the bottom width of the chamber, measured as the distance between the inside edges of the base flanges of the chamber. The effective width of the trench shall not exceed five feet for design purposes. The effective width calculation does not apply when filter material is used in the trench.

iii. The effective width of the trench for a system using bundled expanded polystyrene synthetic aggregate contained in high-strength polyethylene netting in cylinders 9 to 12 inches in diameter specifically designed for use without filter material may be up to 1.5 times the maximum external width of the synthetic aggregate bundle. The trench may contain multiple bundles but at least one bundle length in the trench must include perforated distribution pipe. The effective width of the trench shall not exceed five feet for design purposes. The effective width calculation does not apply when filter material is used in the trench.

iv. For soil absorption systems that do not use filter material, any trench wider than 36 inches for pipes and five feet for chambers shall be considered a bed and have the required square footage of the absorption area or drainfield trench increased by the appropriate multiplication factor from Table 4.

19. Absorption Trench Sizing

a. The required square footage for an absorption trench for a dwelling must be determined by use of Table 5 when a percolation test was performed.

b. The required square footage for a non-dwelling facility must be determined by use of the appropriate wastewater flow rate in Table 5 or by use of the following equation: The daily design flow multiplied by (0.20 multiplied by the square root of the percolation rate).

$$sq.ft. = design.flow(gpd) \times 0.20 \times \sqrt{percolation(\min/in)}$$

c. The required soil absorption area for a bed must be calculated by determining the required square footage for a trench and multiplying that area by the soil absorption bed multiplication factor from Table 4.

20. Dosing

a. Dosing of the soil absorption system is required when the total length of distribution line is greater than 500 linear feet. Dosing may be accomplished by either pumps or siphons. The discharge from the pump or siphon must be to a device designed to dissipate the velocity of the

discharge and prevent erosion or disruption of the filter material or soil in the soil absorption system.

b. When the design wastewater flow requires more than 1,000 linear feet of distribution line, the soil absorption system must be divided into two equal portions and each half dosed alternately with equal volumes of effluent.
c. The system must be designed so that the soil absorption system, or each half if divided into equal portions, is dosed at least once per day but not more than four times per day based on the design flow.
d. The volume of each dose for an undivided system must be the greater of the volume from one day of design flow (the wastewater daily design flow divided by the daily dosing frequency), or an amount equal to approximately three-fourths of the internal volume of the distribution lines being dosed (approximately 0.5 gallons per linear foot of four-inch pipe) to ensure distribution over the entire system. The volume of each dose for a divided system must be half the amount determined for an undivided system.
e. When a dosing pump or siphon device is installed directly in a tank or tank compartment, the volume of that tank or tank compartment shall not be used to meet, or be considered part of, the minimum septic tank capacity requirement of this Title.

21. Pressure Dosing and Pressure Distribution. Construction of an onsite wastewater treatment system with a pressure dosed soil absorption system is not covered under this general permit.

Table 4 - Soil Absorption Bed Multiplication Factor

Wide of Bed, feet	Multiplier
> 3 to 10	1.25
> 10 to 15	1.33
> 15 to 20	1.50
> 20	Unacceptable

Table 5 - Soil Absorption System Requirement, square feet

Percolation Rate, mpi	200 gpd	300 gpd	400 gpd	500 gpd	600 gpd	700 gpd	800 gpd	900 gpd	1,000 gpd
< 5	Design for a 12 inch loamy sand liner with a percolation rate of 15 to 20 minutes per inch and use the 11-20 mpi design below								
>5 to 10	165	330	495	660	825	990	1155	1320	1485
>10 to 20	210	420	630	840	1050	1260	1470	1680	1890
>20 to 30	250	500	750	1000	1250	1500	1750	2000	2250
>30 to 40	275	550	825	1100	1375	1650	1925	2200	2475
>40 to 50	330	660	990	1320	1650	1980	2310	2640	2970
>50 to 60	350	700	1050	1400	1750	2100	2450	2800	3150
> 60	Ineligible for general permit when percolation rate is slower than 60 mpi.								

L. Floor Drains

1. A floor drain in a dwelling garage may be connected to an onsite wastewater treatment system provided the drain does not receive petroleum products, paint, organic solvents, antifreeze, or hazardous materials and meets design requirements of this section. These drains are designed to handle snow and ice melt along with occasional exterior vehicle washing.
2. A floor drain in a dwelling garage that is connected to an onsite wastewater treatment must meet the following design requirements:
    a. The floor drain must have an integral mud trap and oil separator; and
    b. The floor drain must be equipped with a watertight cap or a valve must be located immediately following the drain. The cap must normally be left secured on the drain or the valve must normally be left closed.
3. The design flow of the onsite wastewater treatment system must be increased at least 100 gallons to account for a dwelling garage floor drain connection to the system.
4. A permanent sign must be placed within view of the drain in accordance with Title 124.
5. The discharge of motor vehicle wastes or maintenance shop wastes to a septic system or to a soil absorption system is prohibited. The connection of a floor drain from a maintenance shop to a septic system or soil absorption system is prohibited.

6. Discharge of a non-domestic waste to a septic system is also subject to the requirements of Nebraska Administrative Code Title 122 - Rules and Regulations for Underground Injection and Mineral Production Wells.

M. Maintenance Of Septic Systems

1. The owner of a septic tank must have a Master or Journeyman Pumper, a professional engineer, or a registered environmental health specialist periodically inspect the septic tank and remove septage from the tank whenever 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.
2. Disinfectant or anti-bacterial products must not be used to clean the tank except as an optional step in preparing the tank for closure.

N. Waste Prohibitions

1. The type of waste that can be directed to an on-site wastewater treatment system is limited to domestic wastewater. The following wastes are prohibited from entering an onsite wastewater treatment system unless approved and so stated in the operating permit issued for the system.
    a. Cooling water, groundwater infiltration, discharge from roof drains, discharge from foundation tile drains, swimming pool wastewater, or other clear water discharges.
    b. Hazardous waste: Any chemical substance or material, gas, solid, or liquid designated as hazardous in accordance with Title 128 – Nebraska Hazardous Waste Regulations.
    c. Those pollutants or combination of pollutants or disease causing agents, which after discharge and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will on the basis of information available to the Department cause either death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunction in reproduction), or physical deformations on such organism or its offspring.
2. The discharge of motor vehicle wastes to a septic system is prohibited. For the purposes of this permit, “motor vehicle” means mechanized equipment used in agriculture, construction, industrial activities, maintenance, recreation, or transportation.
3. The discharge to a septic system of wastewater containing high strength disinfectants, biological inhibitors, or deodorants or similar chemicals (such as those used in camper waste tanks, laboratories, medical or veterinary facilities, or industrial facilities) is prohibited.

NEBRASKA
Good Life. Great Resources.
DEPT. OF ENVIRONMENT AND ENERGY

Pete Ricketts, Governor

PRIVATE ONSITE WASTEWATER TREATMENT FACILIITY GENERAL CONSTRUCTION and OPERATING PERMIT

PERMIT NUMBER: GHT220000 **Permit Name: Holding Tank**

Project Description: Private Onsite Wastewater Treatment System (Holding Tank)

Revised or Superseded Construction Permits: none

Pursuant to Nebraska Administrative Code Title 124, this general construction permit approves the construction of specific types of onsite wastewater treatment systems. This permit document and the associated onsite wastewater treatment system registration form make up the complete permit for the owner of the dwelling/non-dwelling facility identified in the registration.

Compliance with this permit will not be a defense to any enforcement action resulting from endangering the environment, health and human safety, or violating any State statute, regulation, or local ordinance. The permit holder will assure that the installation, operation, and maintenance of all equipment is in compliance with all of the conditions of this permit.

Pursuant to a Delegation Memorandum dated July 1, 2021, and signed by the Director, the undersigned herby issues this permit on behalf of the Director under the authority of Nebraska Administrative Code Title 124 – On-site Wastewater Treatment Systems.

6/27/2022
Date

Shelley Schneider
Permitting and Engineering Division Administrator

Department of Environment and Energy
P.O. Box 98922
Lincoln, Nebraska 68509-8922

Jim Macy, Director
OFFICE 402-471-2186 FAX 402-471-2909
ndeq.moreinfo@nebraska.gov

Table of Contents

I. Definitions

"**Baffle**" means a partition installed in a septic tank for proper operation of the tank and to provide maximum retention of solids, and includes sanitary tees.

"**Bedroom**" means any room within a dwelling that might reasonably be used as a sleeping room.

"**Blackwater**" means wastes carried off by toilets, urinals, and kitchen drains. Blackwater is wastewater for the purposes of these regulations.

"**Building drain**" means that portion of the lowest horizontal piping of a drainage system which receives the wastewater discharge from within the walls of the building and conveys it to the building sewer beginning 30 inches outside the building footings.

"**Building sewer**" means that part of the drainage system extending from the end of the building drain to a treatment system or other approved point of disposal.

"**Certified Professional**" means a private onsite wastewater treatment system professional certified under the Private Onsite Wastewater Treatment System Contractors Certification and System Registration Act to perform the tasks for which the certification has been issued.

"**Construction**" means the installation of an onsite wastewater treatment system or the replacement, reconstruction, alteration, modification, expansion, or closure of an existing system including the installation of required wastewater lagoon fencing. Construction includes excavation or similar activity related to the installation, replacement, reconstruction, alteration, modification, or expansion of an onsite system, or closure of an onsite system. For the purposes of subdivision review and approval, "construction" means physical activity on a development area including the building of roads, cut and fill, grading, installation of utilities, construction of any foundations, buildings or structures for the development, and construction work on drainage, piping, trenching, lighting, foundations, or other site activities. Construction does not include siting, soil percolation testing, or soil boring.

"**Department**" means the Nebraska Department of Environment and Energy.

"**Depth marker**" or "**depth gauge**" means a device used to measure the liquid level present in a septic tank, wastewater lagoon, or other onsite wastewater treatment system.

"**Design flow**" means the maximum volume of wastewater estimated to be generated by a dwelling or non-dwelling facility in a twenty-four-hour period. It includes both a typical

operating capacity and a surge capacity for the system during periodic heavy use events. The sizing and design of the onsite wastewater treatment system components are based on the design flow.

"**Direct supervision**" means the person overseeing the work of others is physically present on the site where the work is being done and has control over, responsibility for, and professional knowledge of the work being done.

"**Domestic septage or septage**" means the liquid or solid material removed from a septic tank, holding tank, cesspool, portable toilet, Type III marine sanitation device, or similar treatment works that receives only domestic wastewater. Domestic septage does not include liquid or solid material removed from a septic tank, holding tank, cesspool, portable toilet, or similar treatment works that receives either commercial wastewater or industrial wastewater and does not include grease removed from a grease trap at a restaurant. Domestic septage does not include wastewater containing high strength disinfectants, biological inhibitors, or deodorants or similar chemicals such as those used in camper waste tanks, laboratories, medical or veterinary facilities, or industrial facilities.

"**Domestic waste or domestic wastewater**" means human body waste and household type wastes including bath and toilet wastes, household laundry wastes, household kitchen wastes, and other similar wastes from a dwelling or a non-dwelling facility. Domestic waste or wastewater does not include drainage from roofs; footing or foundation drains; process waste from any industrial, agricultural, or commercial establishment; automotive or industrial chemicals or petroleum products; kitchen waste or wastewater from a restaurant or food preparation facility; water carrying animal waste or commercial process water or wastewater; or similar waste.

"**Dwelling**" means a building, structure, or place used or intended to be used for human occupancy as a single family or multi-family residence and which generates domestic wastewater. If any portion of the wastewater generated at such a building, structure or place is a non-domestic wastewater, the facility shall be considered a non-dwelling facility.

"**Effluent**" means the liquid flowing out of a septic tank or other treatment component of an onsite wastewater treatment system.

"**Encroachment**" means an intrusion on a required setback distance.

"**Fill**" means soil, rock, gravel, or waste material which has been placed over the original soil or bedrock and is characterized by a lack of distinct horizons or color patterns as found in naturally developed, undisturbed soils.

"**Freeboard**" means the vertical distance between the design full liquid level and the level at which liquid will overflow from a lagoon.

"**Graywater**" means all domestic waste excluding blackwater and including bath, lavatory, laundry, and sink waste except kitchen sink waste. Graywater is wastewater for the purposes of these regulations.

"**Grease trap or grease trap tank or grease interceptor**" means a watertight tank designed for the collection and retention of fats, oils, and grease, and which is accessible for periodic removal of the contents.

"**Groundwater**" means water occurring beneath the surface of the ground that fills available openings in rock or soil materials such that they may be considered saturated.

"**Holding tank**" means a tank for the storage of wastewater until it can be transported to a point for proper disposal.

"**Industrial waste**" means wastewater not otherwise defined as domestic wastewater, including the runoff and leachate from areas that receive pollutants associated with industrial or commercial storage, handling, or processing.

"**Influent**" means wastewater flowing into an on-site wastewater treatment system component or device.

"**Layout**" means the practice of determining wastewater design flows and loadings, selecting system type, sizing and selecting system components, or locating system components for the purpose of construction, reconstruction, alteration or modification of an onsite wastewater system.

"**Native soil**" means soil that is naturally occurring, formed by normal geologic and biological processes, which is characterized by the distinct soil horizons or color patterns found in naturally developed, undisturbed soil.

"**Non-dwelling facility**" means a building, structure, place of business, place of gathering, or waste collection system which is not a dwelling and which generates wastewater.

"**Onsite wastewater treatment system**" means any system of piping, treatment devices, or other appurtenances that convey, store, treat, or dispose of domestic or non-domestic wastewater, but not including wastewater from a livestock waste control facility, on the property where it

originates, or on nearby property under the control of the user, which system is not connected to a public sewer system. An onsite wastewater treatment system begins at the end of the building drain. A system using a lagoon is limited to a maximum design flow of 1,000 gallons per day to be considered an onsite wastewater treatment system.

"**Pump tank**" means a watertight container with a capacity over 50 gallons which houses a pump or pump unit and associated appurtenances used to convey effluent or sewage. The capacity of a pump tank is measured at the normal high (pump start) operating level. The capacity of a tank housing a pump or used as a pump tank is not considered part of the treatment volume required for a septic tank for the purposes of these regulations.

"**Pumping**" means the practice of maintaining septic tanks, grease trap tanks, holding tanks, and any other components of onsite wastewater systems through the removal, transportation, and disposal of accumulated liquid and solid wastes.

"**Registered Environmental Health Specialist or REHS**" means a person who has the educational requirements and has had experience in the field of environmental sanitation required by Nebraska Revised Statutes §71-3703 and is registered with the Nebraska Board of Registration for Environmental Health Specialists in accordance with Nebraska Revised Statutes §71-3702 through §71-3715.

"**Repair**" means the correction of a mechanical, electrical, or minor structural defect in an existing onsite wastewater system component such as, but not limited to, sealing a crack in a tank lid, repairing or replacing a tank baffle or access manhole riser, repairing or replacing a pump or electrical switch, leveling a distribution box, replacing a building sewer pipe, or replacing a cracked pipe between the septic tank and soil absorption system. Repair does not include replacement, reconstruction or modification of a tank or soil absorption system; extension or enlargement of a soil absorption component and system; replacement of a distribution pipe; or repair or replacement of a metal or concrete block tank.

"**Sewage**" means any water carrying domestic waste exclusive of footing and roof drainage, from any industrial, agricultural, or commercial establishment or any dwelling or any other structures. Domestic waste includes but is not limited to liquid waste produced by bathing, laundry, cooking operations, and liquid waste from toilets and floor drains and specifically excludes animal waste and commercial process water.

"**Site**" means the area bounded by the dimensions required for the proper location of the soil absorption system.

"**Siting**" means the practice of the investigation, examination, and reporting of design-controlling physical characteristics of an area at which an onsite wastewater system is to be constructed, reconstructed, altered, or modified; including, but not limited to topography, drainage, landscape position, soil evaluation, location and type of wells, water lines, property lines, foundations, and surface water features.

"**Sludge**" means the accumulated settled solids deposited from wastewater and containing water to form a semi-liquid mass.

"**Surface waters**" means all waters within the jurisdiction of this state, including all streams, lakes, ponds, impounding reservoirs, marshes, wetlands, watercourses, waterways, springs, canal systems, drainage systems, and all other bodies or accumulations of water, natural or artificial, public or private, situated wholly or partly within or bordering upon the state. Impounded waters in this definition do not include areas designated by the Department as wastewater treatment or wastewater retention facilities or irrigation reuse pits.

"**Tank**" means a watertight structure or container used to hold wastewater for such purposes as aeration, dilution, disinfection, equalization, mixing, sedimentation, storage, collection for transport, treatment, or addition of chemicals.

"**Wastewate**r" means liquid and water borne wastes from a dwelling or non-dwelling facility. Wastewater includes both blackwater and graywater.

"**Wastewater works**" means facilities for collecting, transporting, pumping and treating wastewater and the disposal of treated effluent and sludge.

"**Waters of the state**" means all waters within the jurisdiction of this state, including all streams, lakes, ponds, impounding reservoirs, marshes, wetlands, water courses, waterways, wells, springs, irrigation systems, drainage systems and all other bodies or accumulations of water, surface or underground, natural or artificial, public or private, situated wholly or partly within or bordering upon the state.

II. General Conditions

A. Coverage under this permit is granted to an owner of a dwelling/non-dwelling facility who sites, constructs, reconstructs, alters, or modifies a septic system provided:

1. The system is sited, constructed, reconstructed, altered, or modified according to the standards set forth in the Specific Conditions section;
2. The system is sited, constructed, reconstructed, altered, or modified by a certified professional authorized to perform the work in accordance with Title 124;
3. Within 45 days from the completion of construction, reconstruction, alteration, or modification, the system is registered and applicable fees are paid in accordance with Title 124;
4. A copy of the following information is kept on the premises of the facility using the onsite wastewater treatment system and made available to the Department by the owner or installer upon request:
    a. Certification signed by a professional engineer, registered environmental health specialist, or certified professional of compliance with the requirements found in the Specific Conditions section of this permit. A certification number must accompany the signature;
    b. An appropriately scaled drawing of the onsite wastewater treatment system, which specifies location, setbacks, capacity, materials of construction, and the construction details for all components of the system, including pump and pump tank or pump chamber specifications for any system using a pump. The scaled drawing must be on no less than 8.5 by 11 inch paper and must be neatly drawn with appropriate dimensions and fixed reference point indicated;
    c. Data and results for soil percolation tests or seepage tests performed in accordance with Title 124; and
5. Upon review of the system registration and any additional documentation if requested, the Department determines the system qualifies for coverage under this permit.
6. The system is operated in accordance with the conditions of this permit and Title 124.

B. Coverage under this permit is granted to the owner of the dwelling/non-dwelling facility identified in the registration.

1. Coverage under this permit will transfer from the owner identified in the registration to any subsequent owner of the facility.
2. Subsequent owners maintaining coverage under this permit are subject to all obligations and conditions described in this permit.

C. Coverage under this permit may be revoked for cause in accordance with Title 124.

D. Coverage under this permit does not relieve an owner or certified professional from the responsibility to comply with all applicable portions of Title 124, *On-site Wastewater Treatment Systems* and any other requirements under local, State, or Federal law.

1. Nothing in this permit will prevent more stringent local requirements from applying.

E. Any permit noncompliance will constitute a violation of the Private Onsite Wastewater Treatment System Contractors Certification and System Registration Act and/or the Nebraska Environmental Protection Act, and is grounds for enforcement action or permit revocation.

F. Any owner or operator who failed to submit any relevant facts or who submitted incorrect information in a general permit application, upon becoming aware of such failure or incorrect submittal, must promptly notify the Department, and if ineligible for coverage under this general permit, must submit a construction permit application under the provisions of Title 124.

G. The owner of a facility must allow a Department representative to enter upon the premises at reasonable times in order to inspect the onsite wastewater treatment system and to sample and monitor any area affected by the system.

H. This permit may be revoked in accordance with Title 124.

III. Specific Conditions

A. **Site Evaluation.** Each proposed site for the location of an onsite wastewater treatment system must be evaluated by a professional engineer, registered environmental health specialist, Journeyman Installer, or Master Installer, and the following information must be recorded and provided to the Department on request.

1. The type, size, location, and elevation of the proposed system, clearly identified on a scaled drawing of sufficient size which will include: the legal description and survey of the lot and immediate vicinity property lines, buildings, water supply wells, buried water pipes and utility lines, the ordinary high water mark of lakes, rivers, streams, and the location and the type of water supply wells within 1000 feet of the proposed onsite wastewater treatment system.
2. Depth to the seasonal highest measured or estimated groundwater table and to the bedrock or other barrier layer surface, if this depth is less than the depth of the seasonal high groundwater table, along with a detailed description of the method used to determine depth. If the depth to seasonal high groundwater or to the bedrock or other barrier layer is less than 10 feet, soil borings or other site specific methods are required to be used
3. Soil conditions, properties, and data.

4. Additional information may be required as part of the application process for a permit or subdivision approval.

B. Design Flow. The design flow for the holding tank must:

1. For a non-dwelling facility, the design flow shall not be less than the highest daily wastewater flow that is calculated to be generated based on the characteristics of the occupancy and use of the facility.
    a. For non-dwelling facilities, the quantity of flow generated for various occupancy and uses must be consistent with nationally recognized data published by the United States Environmental Protection Agency, state onsite wastewater regulatory agencies, or nationally recognized plumbing codes. If use of a non-dwelling facility includes residential occupancy, the estimated flow from the non-residential use must be added to a residential design flow of 100 gallons per day plus 100 gallons per day per bedroom.
2. There is no maximum daily flow for a holding tank.

C. Tank Capacity.

1. A holding tank serving a dwelling must have a minimum capacity of 1,000 gallons for two or fewer bedrooms plus 300 gallons for each additional bedroom.
2. A holding tank serving a non-dwelling facility must have a minimum capacity at least five times the daily flow but not less than 1,000 gallons.
3. The capacity of a holding tank or a pump tank means the interior volume of the tank below the level of the inside bottom of the inlet or influent pipe. The capacity must not include the volume of the air space at the top of the tank.

Table 01 – Single Family Dwelling Holding Tank Capacity

Number of Bedrooms*	1	2	3	4	5	6	7	8	9
Tank Capacity, Gallons	1000	1000	1300	1600	1900	2200	2500	2800	3100

D. Setback Distances. The installation of a holding tank is prohibited within the horizontal setback distances in Table 2.1 in Title 124. See following page.

Lagoon, Tank and Soil Absorption System Setbacks (Ref. Title 124, Table 2.1)

	Minimum Setback Distance feet (meters)		
Item	Tanks	Absorption, Infiltrative, and Evaporative Systems	Lagoons
Surface Water	50 ft. (15.2 m)	50 ft. (15.2 m)	50 ft. (15.2 m)
Private Drinking Water Wells	50 ft. (15.2 m)	100 ft. (30.5 m)	100 ft. (30.5 m)
Public Drinking Water Supply Wells:			
Non-Community System*	50 ft. (15.2 m)	100 ft. (30.5 m)	100 ft. (30.5 m)
Community System	500 ft. (152.4 m)	500 ft. (152.4 m)	1000 ft. (304.8 m)
Community System when a septic system or soil absorption system of > 1000 gpd is installed	500 ft. (152.4 m)	1000 ft. (304.8 m)	N/A
Horizontal Closed Loop Geothermal Wells (trenched or dug and above the ground water table)	25 ft. (15.2m)	25 ft. (15.2m)	25 ft. (15.2m)
All Other Water Wells	50 ft. (15.2 m)	100 ft. (30.5 m)	100 ft. (152.4 m)
Water Lines:			
Pressure Main/Service Connection/Suction Lines	10 ft. (3.1 m)	25 ft. (7.6 m)	25 ft. (7.6 m)
Property Lines	5 ft. (1.5 m)	5 ft. (1.5 m)	50 ft. (15.2 m)
Trees	NA	NA	50 ft. (15.2 m)
Parking area, driveway, sidewalk, or other impermeable surface or cover	5 ft. (1.5 m)	5 ft. (1.5 m)	50 ft. (15.2 m)
Foundation:			
Class 1	15 ft. (4.6 m)	30 ft. (9.1 m)	100 ft. (30.5 m)
Class 2	10 ft. (3.1 m)	10 ft. (3.1 m)	100 ft. (30.5 m)
Class 3	7 ft. (2.1 m)	10 ft. (3.1 m)	50 ft. (15.2 m)
Neighbor's Foundation:			
Class 1	25 ft. (7.6 m)	40 ft. (12.2 m)	200 ft. (61.0 m)
Class 2	20 ft. (6.1 m)	30 ft. (9.1 m)	200 ft. (61.0 m)
Class 3	15 ft. (4.6 m)	20 ft. (6.1 m)	100 ft. (30.5 m)
*See NAC Title 179 – Public Water Supply Systems, 7-010, for a complete definition for Non-community systems. It should be noted that some non-community systems may have more stringent setback requirements, per Title 179. * Class 1 means a basement, a non-basement footing, swimming pool, or slab-on-grade living quarters where any portion of the living quarters basement, footing, or slab is lower in elevation than the onsite wastewater treatment system component.			
* Class 2 means a basement, a non-basement footing foundation, trailer house, swimming pool, or slab-on-grade living quarters higher in elevation than the on-site wastewater treatment system. Any other foundation that is not a Class 1 or Class 3 is a Class 2 Foundation			
* Class 3 means slab-on-grade construction that is not used as living quarters.			

E. Tank Construction.

1. A holding tank must be constructed of materials not subject to excessive corrosion or decay and must be watertight. Acceptable tank construction materials are concrete, fiber reinforced plastic, high density plastic, and fiberglass.
2. When precast and cast in place reinforced concrete tanks are used they must be properly cured and of watertight construction.
3. All concrete interior surfaces of a tank that are exposed to air must be coated with a bitumastic or similar protective compound beginning at an elevation 3 inches below the normal effluent operating level to minimize corrosion and degradation of the concrete.
4. Concrete block, brick and metal are not acceptable materials for new tank construction. When an existing system is being replaced, reconstructed, altered, or modified and there is an existing concrete block or metal tank that is part of the system, the tank must be inspected. The existing tank must be replaced with a tank meeting current requirements unless the existing tank is determined to be structurally sound and watertight.
5. The tank must be designed to withstand soil pressures when empty and not collapse or undergo excessive deflection which would prevent the proper operation of the system, crack or distort components of the system such as the baffles, prevent proper sealing of lids over manholes and inspection ports, reduce capacity below the required minimum tank design capacity, or reduce the design working volume of the system.
6. All tanks must be permanently marked to specify the capacity in gallons, manufacturer, and the manufacturer's address. The gallon and manufacturing identification label must be located next to the manhole towards the inlet side.
7. For non-domestic wastewater flows the installer must ensure the tank construction materials are compatible with the wastewater characteristics.

F. Tank Design and Placement. For coverage under this permit, all holding tanks regardless of material or method of construction will conform to the following criteria.

1. Sanitary tees must be affixed to the inlet with a permanent waterproof adhesive. In no case shall the baffles or tees extend less than six inches above the liquid surface. Sanitary tees must be at least four inches in diameter
2. There must be at least one inch between the underside of the top of the holding tank and the highest point of the inlet.
3. There must be one or more access manholes at least 12 inches in diameter and located within six feet of all walls of the tank. Each access manhole must have a properly secured cover.
    a. The manhole must extend through the top of the tank to a point within 12 inches but at least six inches below grade for a tank with no manhole riser.

The manhole cover must be covered with at least six inches of soil unless otherwise properly secured to prevent unwarranted access.

b. For a tank with a manhole riser, the riser must be sufficiently large to allow for access and removal of the manhole cover. The manhole riser may extend to or above the ground surface. The manhole riser must have a properly secured cover to prevent unwarranted access.

c. Each holding tank must have an inspection pipe at least six inches in diameter over the inlet device. The inspection pipe must extend to or above the ground surface and be capped flush or above finished grade. The inspection pipe cap must be properly secured to prevent unwarranted access. A manhole access riser that meets the requirements of this permit may be used over both the inlet and outlet devices to satisfy the inspection pipe requirement.

4. Single Tank
   a. Where a septic system has a single septic tank larger than 3,000 gallons that is fabricated as a single unit, the tank must be divided into two or more compartments.
   b. When a septic tank is divided into two compartments, the volume in the first compartment in the direction of flow shall not be less than one-half or more than two-thirds of the total volume of the tank.
   c. When a septic tank is divided into three or more compartments, one-half of the total volume must be in the first compartment and the other half equally divided in the other compartments.
   d. Connections between compartments must be baffled so as to obtain effective retention of scum and sludge.
   e. Adequate venting must be provided between compartments by baffles or by an opening of at least 50 square inches near the top of the compartment wall.
   f. Adequate access to each compartment must be provided by one or more manholes.
5. A holding tank must be equipped with an alarm or visible float that indicates when the tank is 90 percent or more full, except that an alarm or visible float is not required for an outdoor style toilet facility holding tank where no water supply is used.
6. Holding tanks must be bedded with at least six inches of sand or fine gravel where rock or other undesirable conditions are encountered. The tank must be placed level. Backfilling the excavation for the tank must be done in layers with sufficient compaction to avoid settling. Backfill material must be free of large stones and debris.

7. A tank subject to flotation, such as one located in an area where the seasonal high water table may be higher than the bottom of the tank, must be properly secured or ballasted to prevent flotation.

G. Floor Drains.

1. A floor drain in a dwelling garage may be connected to an onsite wastewater treatment system provided the drain does not receive petroleum products, paint, organic solvents, antifreeze, or hazardous materials and meets design requirements of this section. These drains are designed to handle snow and ice melt along with occasional exterior vehicle washing.
2. A floor drain in a dwelling garage that is connected to an onsite wastewater treatment must meet the following design requirements:
    a. The floor drain shall must an integral mud trap and oil separator; and
    b. The floor drain must be equipped with a watertight cap or a valve shall be located immediately following the drain. The cap must normally be left secured on the drain or the valve must normally be left closed.
3. The design flow of the onsite wastewater treatment system must be increased at least 100 gallons to account for a dwelling garage floor drain connection to the system.
4. A permanent sign must be placed within view of the drain in accordance with Title 124.
5. The discharge of motor vehicle wastes or maintenance shop wastes to a holding tank is prohibited. The connection of a floor drain from a maintenance shop to a holding tank is prohibited.

NEBRASKA

Good Life. Great Resources.

DEPT. OF ENVIRONMENT AND ENERGY

Pete Ricketts, Governor

PRIVATE ONSITE WASTEWATER TREATMENT FACILIITY GENERAL CONSTRUCTION and OPERATING PERMIT

PERMIT NUMBER: GL220000 **Permit Name: Wastewater Lagoon**

Project Description: Private Onsite Wastewater Treatment System (Lagoon)

Revised or Superseded Construction Permits: none

Pursuant to Nebraska Administrative Code Title 124, this general construction permit approves the construction of specific types of onsite wastewater treatment systems. This permit document and the associated onsite wastewater treatment system registration form make up the complete permit for the owner of the dwelling/non-dwelling facility identified in the registration.

Compliance with this permit will not be a defense to any enforcement action resulting from endangering the environment, health and human safety, or violating any State statute, regulation, or local ordinance. The permit holder will assure that the installation, operation, and maintenance of all equipment is in compliance with all of the conditions of this permit.

Pursuant to a Delegation Memorandum dated July 1, 2021, and signed by the Director, the undersigned herby issues this permit on behalf of the Director under the authority of Nebraska Administrative Code Title 124 – On-site Wastewater Treatment Systems.

6/27/2022

Date

Shelley Schneider
Permitting and Engineering Division Administrator

Department of Environment and Energy
P.O. Box 98922
Lincoln, Nebraska 68509-8922

Jim Macy, Director
OFFICE 402-471-2186 FAX 402-471-2909
ndeq.moreinfo@nebraska.gov

Table of Contents

I. Definitions

"**Bedroom**" means any room within a dwelling that might reasonably be used as a sleeping room.

"**Bentonite**" means high swelling clay derived from a chemically altered volcanic ash.

"**Blackwater**" means wastes carried off by toilets, urinals, and kitchen drains. Blackwater is wastewater for the purposes of these regulations.

"**Building drain**" means that portion of the lowest horizontal piping of a drainage system which receives the wastewater discharge from within the walls of the building and conveys it to the building sewer beginning 30 inches outside the building footings.

"**Building sewer**" means that part of the drainage system extending from the end of the building drain to a treatment system or other approved point of disposal.

"**Certified Professional**" means a private onsite wastewater treatment system professional certified under the Private Onsite Wastewater Treatment System Contractors Certification and System Registration Act to perform the tasks for which the certification has been issued.

"**Closure or close**" means the proper cleanup and decommissioning of an onsite wastewater treatment system after its use has been discontinued.

"**Construction**" means the installation of an onsite wastewater treatment system or the replacement, reconstruction, alteration, modification, expansion, or closure of an existing system including the installation of required wastewater lagoon fencing. Construction includes excavation or similar activity related to the installation, replacement, reconstruction, alteration, modification, or expansion of an onsite system, or closure of an onsite system. Construction does not include siting, soil percolation testing, or soil boring.

"**Department**" means the Nebraska Department of Environment and Energy.

"**Depth marker**" or "**depth gauge**" means a device used to measure the liquid level present in a septic tank, wastewater lagoon, or other onsite wastewater treatment system.

"**Design flow**" means the maximum volume of wastewater estimated to be generated by a dwelling or non-dwelling facility in a twenty-four-hour period. It includes both a typical operating capacity and a surge capacity for the system during periodic heavy use events. The

sizing and design of the onsite wastewater treatment system components are based on the design flow.

"**Direct supervision**" means the person overseeing the work of others is physically present on the site where the work is being done and has control over, responsibility for, and professional knowledge of the work being done.

"**Director**" means the Director of the Department of Environment and Energy.

"**Domestic septage or septage**" means the liquid or solid material removed from a septic tank, holding tank, cesspool, portable toilet, Type III marine sanitation device, or similar treatment works that receives only domestic wastewater. Domestic septage does not include liquid or solid material removed from a septic tank, holding tank, cesspool, portable toilet, or similar treatment works that receives either commercial wastewater or industrial wastewater and does not include grease removed from a grease trap at a restaurant. Domestic septage does not include wastewater containing high strength disinfectants, biological inhibitors, or deodorants or similar chemicals such as those used in camper waste tanks, laboratories, medical or veterinary facilities, or industrial facilities.

"**Domestic waste or domestic wastewater**" means human body waste and household type wastes including bath and toilet wastes, household laundry wastes, household kitchen wastes, and other similar wastes from a dwelling or a non-dwelling facility. Domestic waste or wastewater does not include drainage from roofs; footing or foundation drains; process waste from any industrial, agricultural, or commercial establishment; automotive or industrial chemicals or petroleum products; kitchen waste or wastewater from a restaurant or food preparation facility; water carrying animal waste or commercial process water or wastewater; or similar waste.

"**Dwelling**" means a building, structure, or place used or intended to be used for human occupancy as a single family or multi-family residence and which generates domestic wastewater. If any portion of the wastewater generated at such a building, structure or place is a non-domestic wastewater, the facility shall be considered a non-dwelling facility.

"**Effluent**" means the liquid flowing out of a septic tank or other treatment component of an onsite wastewater treatment system.

"**Encroachment**" means an intrusion on a required setback distance.

"**Endorsement**" means a qualification added to a certificate that authorizes the certificate holder to perform special procedures that require advanced levels of skills or training.

"**Failed or Failing**" means an unauthorized discharge of effluent or wastewater: on the surface of the ground; or to a cesspool, seepage pit, dry well, or leaching pit; or to a soil absorption system with less than four feet to groundwater or other limiting soil characteristics; or which threatens to cause pollution of any air, water, or land of the State; or which threatens public health.

"**Fill**" means soil, rock, gravel, or waste material which has been placed over the original soil or bedrock and is characterized by a lack of distinct horizons or color patterns as found in naturally developed, undisturbed soils.

"**Freeboard**" means the vertical distance between the design full liquid level and the level at which liquid will overflow from a lagoon.

"**Graywater**" means all domestic waste excluding blackwater and including bath, lavatory, laundry, and sink waste except kitchen sink waste. Graywater is wastewater for the purposes of these regulations.

"**Groundwater**" means water occurring beneath the surface of the ground that fills available openings in rock or soil materials such that they may be considered saturated.

"**Influent**" means wastewater flowing into an on-site wastewater treatment system component or device.

"**Inspecting**" means the practice of examining the components of an onsite wastewater treatment system, the operational condition of the system, or the site conditions for the purpose of providing verification of compliance with Title 124. These practices are not considered inspecting when performed by a Master or Journeyman Pumper for the purpose of pumping an onsite wastewater treatment system or when performed by a Master or Journeyman Installer for the installation, modification, alteration, or repair of an onsite wastewater treatment system or for an evaluation conducted for those purposes.

"**Layout**" means the practice of determining wastewater design flows and loadings, selecting system type, sizing and selecting system components, or locating system components for the purpose of construction, reconstruction, alteration or modification of an onsite wastewater system.

"**Liner**" means the material or substance used to line the bottom of a wastewater lagoon, sand filter, wetlands cell, or other onsite wastewater treatment system so that percolation of liquids through the soil is controlled.

“**Loamy sand**” means a soil material containing 70 to 85 percent sand, up to 30 percent silt, and up to 15 percent clay.

“**Native soil**” means soil that is naturally occurring, formed by normal geologic and biological processes, which is characterized by the distinct soil horizons or color patterns found in naturally developed, undisturbed soil.

“**Non-dwelling facility**” means a building, structure, place of business, place of gathering, or waste collection system which is not a dwelling and which generates wastewater.

"**Onsite wastewater treatment system**" means any system of piping, treatment devices, or other appurtenances that convey, store, treat, or dispose of domestic or non-domestic wastewater, but not including wastewater from a livestock waste control facility, on the property where it originates, or on nearby property under the control of the user, which system is not connected to a public sewer system. An onsite wastewater treatment system begins at the end of the building drain. A system using a lagoon is limited to a maximum design flow of 1,000 gallons per day to be considered an onsite wastewater treatment system.

"**Percolation rate**" means the rate, usually expressed in minutes per inch or mpi, which is obtained from soil percolation tests conducted to help determine the amount of soil absorption area required for a soil absorption system.

"**Percolation test**" means the determination of the suitability of an area for subsurface wastewater effluent disposal by a standardized test of the rate at which the undisturbed soil in an excavated pit or hole of standard size will absorb liquid per unit of surface area.

"**Plastic limit**" means the water content where soil transitions between brittle and plastic behavior characterized by the point at which a thread of soil begins to crumble when rolled between hands to a diameter of one-eighth inch.

"**Pollution**" means the man-made or man-induced alteration of the chemical, physical, biological, or radiological integrity of water of the State.

"**Professional Engineer or P.E.**" means a person who is licensed as a professional engineer by the Nebraska Board of Engineers and Architects.

“**Pump tank**” means a watertight container with a capacity over 50 gallons which houses a pump or pump unit and associated appurtenances used to convey effluent or sewage. The capacity of a pump tank is measured at the normal high (pump start) operating level. The

capacity of a tank housing a pump or used as a pump tank is not considered part of the treatment volume required for a septic tank for the purposes of these regulations.

"**Pumping**" means the practice of maintaining septic tanks, grease trap tanks, holding tanks, and any other components of onsite wastewater systems through the removal, transportation, and disposal of accumulated liquid and solid wastes.

"**Registered Environmental Health Specialist or REHS**" means a person who has the educational requirements and has had experience in the field of environmental sanitation required by Nebraska Revised Statutes §71-3703 and is registered with the Nebraska Board of Registration for Environmental Health Specialists in accordance with Nebraska Revised Statutes §71-3702 through §71-3715.

"**Repair**" means the correction of a mechanical, electrical, or minor structural defect in an existing onsite wastewater system component such as, but not limited to, sealing a crack in a tank lid, repairing or replacing a tank baffle or access manhole riser, repairing or replacing a pump or electrical switch, leveling a distribution box, replacing a building sewer pipe, or replacing a cracked pipe between the septic tank and soil absorption system. Repair does not include replacement, reconstruction or modification of a tank or soil absorption system; extension or enlargement of a soil absorption component and system; replacement of a distribution pipe; or repair or replacement of a metal or concrete block tank.

"**Sand**" means a soil material composed by weight of at least 90 percent of soil particles ranging in size between 0.05 and 2.0 mm or 0.002 inches and 0.08 inches.

"**Sandy soil**" means the soil having the following textures: sands, fine sands, loamy fine sands, and loamy very fine sands.

"**Sewage**" means any water carrying domestic waste exclusive of footing and roof drainage, from any industrial, agricultural, or commercial establishment or any dwelling or any other structures. Domestic waste includes but is not limited to liquid waste produced by bathing, laundry, cooking operations, and liquid waste from toilets and floor drains and specifically excludes animal waste and commercial process water.

"**Site**" means the area bounded by the dimensions required for the proper location of the soil absorption system.

"**Siting**" means the practice of the investigation, examination, and reporting of design-controlling physical characteristics of an area at which an onsite wastewater system is to be constructed, reconstructed, altered, or modified; including, but not limited to topography, drainage, landscape

position, soil evaluation, location and type of wells, water lines, property lines, foundations, and surface water features.

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

"**Sludge**" means the accumulated settled solids deposited from wastewater and containing water to form a semi-liquid mass.

"**Soil Evaluation**" means the practice of the investigation, examination, testing, and reporting of design-controlling characteristics of the soil and subsurface features at an area at which an onsite wastewater soil absorption system is to be constructed, reconstructed, altered, or modified; including, but not limited to soil type, structure, permeability, absorption capacity, and percolation rate, and the depth to seasonal high groundwater, bedrock, or other subsurface barrier layers.

"**Surface waters**" means all waters within the jurisdiction of this state, including all streams, lakes, ponds, impounding reservoirs, marshes, wetlands, watercourses, waterways, springs, canal systems, drainage systems, and all other bodies or accumulations of water, natural or artificial, public or private, situated wholly or partly within or bordering upon the state. Impounded waters in this definition do not include areas designated by the Department as wastewater treatment or wastewater retention facilities or irrigation reuse pits.

"**Tank**" means a watertight structure or container used to hold wastewater for such purposes as aeration, dilution, disinfection, equalization, mixing, sedimentation, storage, collection for transport, treatment, or addition of chemicals.

"**Wastewater**" means liquid and water borne wastes from a dwelling or non-dwelling facility. Wastewater includes both blackwater and graywater.

"**Wastewater lagoon**" means a shallow body of water where organic wastes are decomposed by bacteria in the presence of free oxygen.

"**Wastewater works**" means facilities for collecting, transporting, pumping and treating wastewater and the disposal of treated effluent and sludge.

"**Waters of the state**" means all waters within the jurisdiction of this state, including all streams, lakes, ponds, impounding reservoirs, marshes, wetlands, water courses, waterways, wells, springs, irrigation systems, drainage systems and all other bodies or accumulations of water, surface or underground, natural or artificial, public or private, situated wholly or partly within or bordering upon the state.

II. General Conditions

A. Coverage under this permit is granted to an owner of a dwelling/non-dwelling facility who sites, constructs, reconstructs, alters, or modifies a septic system provided:

1. The system is sited, constructed, reconstructed, altered, or modified according to the standards set forth in the Specific Conditions section;
2. The system is sited, constructed, reconstructed, altered, or modified by a certified professional authorized to perform the work in accordance with Title 124;
3. Within 45 days from the completion of construction, reconstruction, alteration, or modification, the system is registered and applicable fees are paid in accordance with Title 124;
4. A copy of the following information is kept on the premises of the facility using the onsite wastewater treatment system and made available to the Department by the owner or installer upon request:
    a. Certification signed by a professional engineer, registered environmental health specialist, or certified professional of compliance with the requirements found in the Specific Conditions section of this permit. A certification number must accompany the signature;
    b. An appropriately scaled drawing of the onsite wastewater treatment system, which specifies location, setbacks, capacity, materials of construction, and the construction details for all components of the system, including pump and pump tank or pump chamber specifications for any system using a pump. The scaled drawing must be on no less than 8.5 by 11 inch paper and must be neatly drawn with appropriate dimensions and fixed reference point indicated;
    c. Data and results for soil percolation tests or seepage tests performed in accordance with Title 124; and
5. Upon review of the system registration and any additional documentation if requested, the Department determines the system qualifies for coverage under this permit.
6. The system is operated in accordance with the conditions of this permit and Title 124.

B. Coverage under this permit is granted to the owner of the dwelling/non-dwelling facility identified in the registration.

1. Coverage under this permit will transfer from the owner identified in the registration to any subsequent owner of the facility.
2. Subsequent owners maintaining coverage under this permit are subject to all obligations and conditions described in this permit.

C. Coverage under this permit may be revoked for cause in accordance with Title 124.

D. Coverage under this permit does not relieve an owner or certified professional from the responsibility to comply with all applicable portions of Title 124, *On-site Wastewater Treatment Systems* and any other requirements under local, State, or Federal law.

1. Nothing in this permit will prevent more stringent local requirements from applying.

E. Any permit noncompliance will constitute a violation of the Private Onsite Wastewater Treatment System Contractors Certification and System Registration Act and/or the Nebraska Environmental Protection Act, and is grounds for enforcement action or permit revocation.

F. Any owner or operator who failed to submit any relevant facts or who submitted incorrect information in a general permit application, upon becoming aware of such failure or incorrect submittal, must promptly notify the Department, and if ineligible for coverage under this general permit, must submit a construction permit application under the provisions of Title 124.

G. The owner of a facility must allow a Department representative to enter upon the premises at reasonable times in order to inspect the onsite wastewater treatment system and to sample and monitor any area affected by the system.

H. This permit may be revoked in accordance with Title 124.

III. Specific Conditions

A. **Site Evaluation.** Each proposed site for the location of an onsite wastewater treatment system must be evaluated by a professional engineer, registered environmental health specialist, Journeyman Installer, or Master Installer, and the following information must be recorded and provided to the Department on request.

1. The type, size, location, and elevation of the proposed system, clearly identified on a scaled drawing of sufficient size which will include: the legal description and survey of the lot and immediate vicinity property lines, buildings, water supply wells, buried water pipes and utility lines, the ordinary high water mark of lakes, rivers, streams, and the location and the type of water supply wells within 1000 feet of the proposed onsite wastewater treatment system

B. **Design Flow.**

The design flow for an onsite wastewater lagoon must be as follows:

1. For a single-family or multi-family dwelling, the design flow for a lagoon must be 150 gallons per day for a one-bedroom dwelling plus 75 gallons per day for each additional bedroom.
2. For a non-dwelling facility, the design flow for a lagoon must be the average daily wastewater flow that is calculated to be generated based on the characteristics of

the occupancy and use of the facility. Where the quantity of wastewater generated varies by day, week, month, or season, the design flow may be the average for that period of time provided that the lagoon is designed to have adequate storage volume below the maximum operating level to contain the peak period flows.

Table 1 – Design Flow for a Lagoon for a Single or Multi-Family Dwelling
(Design flow in Gallons per Day)

Total *** Bedrooms	1	2	3	4	5	6	7	8	9	10	11	12
Lagoon Design Flow	150	225	300	375	450	525	600	675	750	825	900	975

*** For lagoon design when the total number of bedrooms exceeds twelve, design flow exceeds 1,000 gallons per day and a construction permit is required.

C. Setback Distances. The installation of a system components is prohibited within the horizontal setback distances in Table 2.1 in Title 124. (See following page)

Lagoon, Tank and Soil Absorption System Setbacks (Ref. Title 124, Table 2.1)

	Minimum Setback Distance feet (meters)		
Item	Tanks	Absorption, Infiltrative, and Evaporative Systems	Lagoons
Surface Water	50 ft. (15.2 m)	50 ft. (15.2 m)	50 ft. (15.2 m)
Private Drinking Water Wells	50 ft. (15.2 m)	100 ft. (30.5 m)	100 ft. (30.5 m)
Public Drinking Water Supply Wells:			
Non-Community System*	50 ft. (15.2 m)	100 ft. (30.5 m)	100 ft. (30.5 m)
Community System	500 ft. (152.4 m)	500 ft. (152.4 m)	1000 ft. (304.8 m)
Community System when a septic system or soil absorption system of > 1000 gpd is installed	500 ft. (152.4 m)	1000 ft. (304.8 m)	N/A
Horizontal Closed Loop Geothermal Wells (trenched or dug and above the ground water table)	25 ft. (15.2m)	25 ft. (15.2m)	25 ft. (15.2m)
All Other Water Wells	50 ft. (15.2 m)	100 ft. (30.5 m)	100 ft. (152.4 m)
Water Lines:			
Pressure Main/Service Connection/Suction Lines	10 ft. (3.1 m)	25 ft. (7.6 m)	25 ft. (7.6 m)
Property Lines	5 ft. (1.5 m)	5 ft. (1.5 m)	50 ft. (15.2 m)
Trees	NA	NA	50 ft. (15.2 m)
Parking area, driveway, sidewalk, or other impermeable surface or cover	5 ft. (1.5 m)	5 ft. (1.5 m)	50 ft. (15.2 m)
Foundation:			
Class 1	15 ft. (4.6 m)	30 ft. (9.1 m)	100 ft. (30.5 m)
Class 2	10 ft. (3.1 m)	10 ft. (3.1 m)	100 ft. (30.5 m)
Class 3	7 ft. (2.1 m)	10 ft. (3.1 m)	50 ft. (15.2 m)
Neighbor's Foundation:			
Class 1	25 ft. (7.6 m)	40 ft. (12.2 m)	200 ft. (61.0 m)
Class 2	20 ft. (6.1 m)	30 ft. (9.1 m)	200 ft. (61.0 m)
Class 3	15 ft. (4.6 m)	20 ft. (6.1 m)	100 ft. (30.5 m)
*See NAC Title 179 – Public Water Supply Systems, 7-010, for a complete definition for Non-community systems. It should be noted that some non-community systems may have more stringent setback requirements, per Title 179. * Class 1 means a basement, a non-basement footing, swimming pool, or slab-on-grade living quarters where any portion of the living quarters basement, footing, or slab is lower in elevation than the onsite wastewater treatment system component.			
* Class 2 means a basement, a non-basement footing foundation, trailer house, swimming pool, or slab-on-grade living quarters higher in elevation than the on-site wastewater treatment system. Any other foundation that is not a Class 1 or Class 3 is a Class 2 Foundation			
* Class 3 means slab-on-grade construction that is not used as living quarters.			

D. Design and Evaluation.

1. A site for a lagoon must permit the unobstructed wind to sweep across the lagoon to provide mixing action and to add oxygen to the water. Timber must be removed for a horizontal distance of at least 50 feet as measured from the high water mark for the maximum operating depth of the lagoon, but not less than 10 feet horizontal distance from the outer dike toe of the lagoon.
2. The lagoon must be located and constructed so it will not receive surface runoff water.
3. A lagoon must not be installed on a lot less than three acres in size. For the purpose of this permit, "lot size" means the area of a lot excluding all area below the normal high water level of any surface water feature and all area within the right-of-way or easement of a street, road, or access easement.
4. The lagoon must be designed for complete retention.
5. The floor of the lagoon must be located at least two feet above the seasonal high groundwater level, bedrock, or other barrier layer.
6. The top of the dike must be at least one foot above the 100 year flood elevation.
7. Testing of the final seepage rate must be completed based on soil permeability. The maximum allowable seepage rate is one-eighth inch per day after sealing and compaction. This may be determined by an independent soils laboratory performing a hydraulic conductivity test on an undisturbed soil sample taken at the site, or the two barrel method prior to filling, or a comparison test after prefilling with clean water but before introduction of wastewater.
    a. The two barrel method may be used for soil sealed lagoons before the lagoon is filled. Two similar 55 gallon drums are required, one a control drum with one end removed and the other drum (seepage drum) with both ends removed. One end of the seepage drum is pressed into the sealed soil layer, and a bead of polymer treated sodium bentonite clay is packed around the inside edge of the drum. The seepage drum is carefully filled with water and kept filled for two or more days to saturate the soil. The test begins with filling each drum equally. Each day the difference in levels is recorded, and the barrels filled to the beginning level. The control drum measures the weather effects while the seepage drum records seepage plus weather effects. The test should continue for at least seven days.
    b. The comparison test method may also be used after the lagoon is prefilled. Isolate the lagoon and record the water level changes as a result of seepage and weather effects. The changes resulting from weather effects alone may be measured separately in a nearly full white plastic five gallon bucket partially buried near the shore. The test should continue for at least seven days.

E. Sizing.

1. The size of a lagoon must be based on the design flow for the dwelling or non-dwelling facility, the seepage rate of the wastewater into the soil below the lagoon, and the average evaporation and precipitation using the appropriate location on the state evaporation and precipitation maps (Figures 1 and 2)
    a. For a dwelling, the minimum wastewater flow for design of the onsite system must be based on the number of bedrooms in the dwelling using the following: 150 gpd + ((Number of Bedrooms - 1) *x* 75 gpd), where gpd is gallons per day.
    b. For a non-dwelling structure or other wastewater source, the wastewater flow must be based on the highest daily wastewater flow.
2. The lagoon water surface area at the maximum operating level must be determined by the following water balance equation:

$$\textit{Maximum Water Surface Area} = \frac{(\textit{flow}) \times 976}{((\textit{evap.} - \textit{precip.}) \times 1.67) + (\textit{OD}) + (\textit{seepage} \times 608)}$$

Where: flow = daily design flow or inflow, gallons per day
evap. = annual lake evaporation for location from Fig. 1
precip. = annual precipitation for location from Fig. 2
OD = difference between maximum and minimum operating depths for the lagoon (typically three feet which is also the maximum allowed)

Figure 1 – Total Lake Evaporation

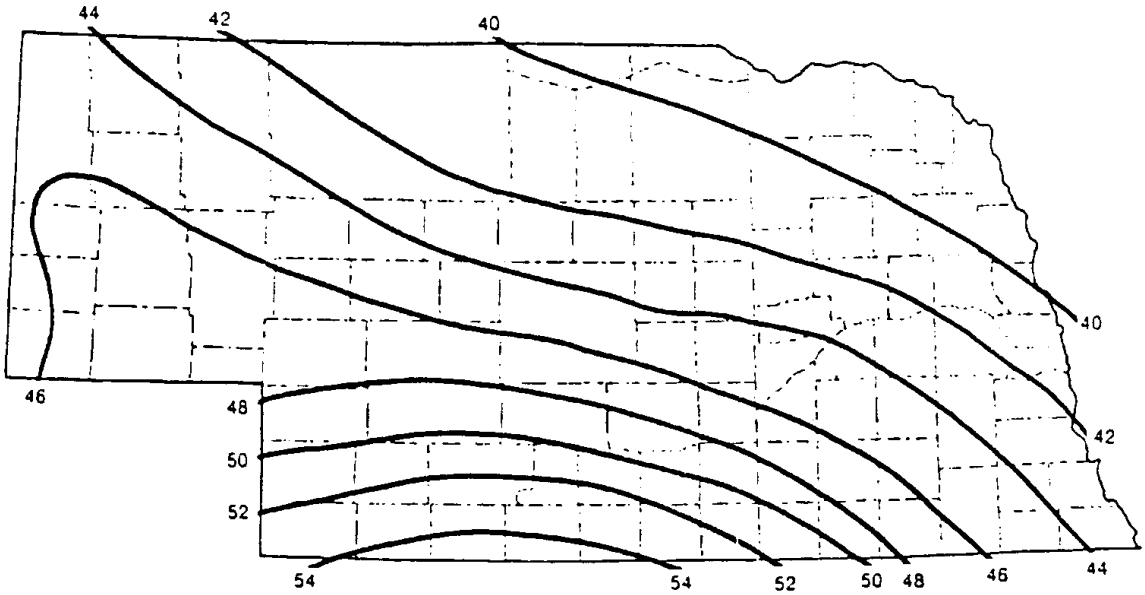
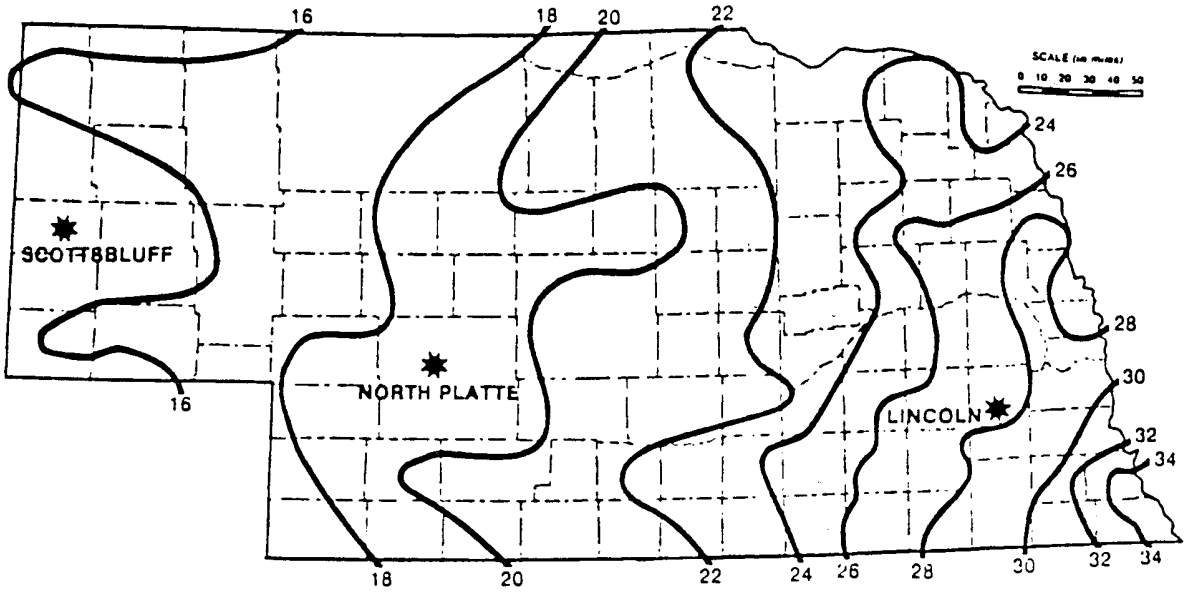


Figure 2 – Precipitation Characteristics



3. If a two-cell design is used it must meet the following design criteria:
    a. The first cell must be sized using the equations above for no fewer than 3 bedrooms.
    b. The combined cells must be sized for the total number of bedrooms in the structure.
    c. The second (empty) cell must be maintained. Maintenance includes keeping grass mowed and other plants at least six inches or less in height.
    d. A pipe must connect the primary to the secondary cell. Wastewater must be allowed to rise to 5 feet deep in the first cell before being drawn down to fill the second cell.
    e. The pipe connecting the two cells must include a splitter box and a valve to ensure the two cells have similar organic loads once the second cell is put into service. The value must have the ability to open and close.
    f. Prior to opening the value and wastewater entering the secondary cell the following measures must be taken:
        i. Ensure the lagoon floor will not seep more than one-eighth inch per day. This may require re-compacting the soil, or adding bentonite clay or a synthetic liner.
        ii. Inspection by a master installer, registered environmental health specialist or professional engineer.

F. Lagoon Construction.

1. The floor of the lagoon must be level. A difference of plus (+) or minus (-) three inches is permitted. All vegetation must be removed from the floor of the lagoon. This organic material must not be used in the construction of the lagoon.
2. The soil material of the lagoon floor must be designed so that it shall not seep more than one-eighth inch per day. If soil borings and tests indicate that the existing soils are not conducive to compaction to meet this requirement, then sodium bentonite clay or a synthetic liner may be used to restrict seepage
3. The inside slope of the dikes shall not be steeper than three horizontal to one vertical. The exterior slope of the dikes shall not be steeper than four horizontal to one vertical. The minimum width of the top of the dike must be four feet.
4. The minimum operating depth of the lagoon shall be two feet. The maximum operating depth shall be five feet. The dikes must provide a minimum freeboard of 12 inches.
5. The lagoon must be equipped with a depth gage that provides a visual indication of the liquid level at minimum operating depth (two feet) and maximum design full depth relative to the lagoon floor.
6. The lagoon must be fenced with four foot high woven wire, welded wire, or barbed wire strung with a minimum of seven layers with the first strand starting three inches from the ground and the following strands spaced evenly. The fence must be equipped with a standard main gate that is kept locked. The fence must be placed on the outside edge of the top of the dike or four feet outside the toe of the dike. A sign no less than 12 inches by 24 inches bearing the clearly-readable words "NO TRESPASSING - WASTEWATER LAGOON" must be located on the gate.
7. The lagoon must be filled with surface or groundwater to a depth of two feet before wastewater wastes are discharged into it.

G. Building Sewer Line.

1. The influent line from the building sewer must be at least four inches inside diameter and must have a grade of not less than one-eighth inch per foot.
2. The line must be equipped with clean-outs with tight fitting caps, at every seventy-five feet or less, or where angles greater than forty five degrees are encountered. A clean out must be located at least one foot above the highest water level and near the outside of the dike embankment.
3. The line must discharge at the center of the lagoon onto a concrete slab at least two feet square with the discharge end of the pipe placed below the minimum operating depth of the lagoon.

4. The sewer line pipe must have a loading bearing capacity of not less than 1,000 (455 kg) pounds per square foot. Plastic pipe must be installed and supported in such a manner that there is no deflection during backfilling or compaction.

H. Maintenance.

1. The owner of a lagoon must operate and maintain the lagoon in the following manner:
    a. The liquid level in a lagoon must be maintained at a minimum depth of two feet. Additional water must be added as necessary to maintain the two foot minimum depth.
    b. The lagoon area must be mowed to keep grass and other plants at six inches or less in height on the lagoon slopes and top of dike.
    c. The lagoon must be operated to prevent the liquid level from encroaching on the one foot freeboard requirement of the lagoon.
    d. Solids will be removed from the lagoon if needed through the services of a Master or Journeyman Pumper, a professional engineer, or a registered environmental health specialist and disposed of in accordance with Title 124.
2. All dike surface areas from the design high operating waterline to the outside toe of the dike and all other areas which were disturbed during construction must be seeded or sodded, and a grass cover maintained to prevent soil erosion. Short grasses, such as blue grass are preferred and must be mowed frequently to prevent overhanging vegetation. Alfalfa and long rooted grasses which might damage the integrity of the lagoon shall not be used. Weeds, cattails, reeds, and other wetland plants must be removed by physical or chemical treatment as they emerge. Trees and brush shall not be allowed to grow within the setback distances identified in Title 124.

I. Floor Drains.

1. A floor drain in a dwelling garage may be connected to an onsite wastewater treatment system provided the drain does not receive petroleum products, paint, organic solvents, antifreeze, or hazardous materials and meets design requirements of this section. These drains are designed to handle snow and ice melt along with occasional exterior vehicle washing.
2. A floor drain in a dwelling garage that is connected to an onsite wastewater treatment must meet the following design requirements:
    a. The floor drain shall must an integral mud trap and oil separator; and
    b. The floor drain must be equipped with a watertight cap or a valve shall be located immediately following the drain. The cap must normally be left secured on the drain or the valve must normally be left closed.

3. The design flow of the onsite wastewater treatment system must be increased at least 100 gallons to account for a dwelling garage floor drain connection to the system.
4. A permanent sign must be placed within view of the drain in accordance with Title 124.
5. The discharge of motor vehicle wastes or maintenance shop wastes to a holding tank is prohibited. The connection of a floor drain from a maintenance shop to a holding tank is prohibited.

J. Closure of a Wastewater Lagoon.

1. Whenever the use of an onsite wastewater treatment system is discontinued following the connection to a sanitary sewer or following condemnation or demolition of a building or property or due to the construction of another onsite wastewater treatment system, the onsite wastewater treatment system will be properly closed and any further use of the system for any purpose will be prohibited.
2. The following method will be used for closure of a wastewater lagoon:
    a. The lagoon will be pumped or allowed to evaporate until there is no liquid remaining;
    b. The fence will be removed and the settled solids and liner material at the bottom of the lagoon will be scraped out and properly disposed;
    c. If a lagoon has received only domestic wastewater, a sludge layer less than six-inches thick may be buried on-site during the regrading of lagoon dikes and the surrounding area. The sludge will be incorporated into the soil or receive at least one foot of cover material; and
    d. The lagoon area will be leveled and filled with clean soil. The soil will be mounded over the lagoon area to provide for future settling and to prevent water from ponding.

NEBRASKA

Good Life. Great Resources.

DEPT. OF ENVIRONMENT AND ENERGY

Pete Ricketts, Governor

PRIVATE ONSITE WASTEWATER TREATMENT FACILIITY GENERAL CONSTRUCTION and OPERATING PERMIT

PERMIT NUMBER: GMS220000 **Permit Name: Mound System**

Project Description: Private Onsite Wastewater Treatment System (Mound System)

Revised or Superseded Construction Permits: none

Pursuant to Nebraska Administrative Code Title 124, this general construction permit approves the construction of specific types of onsite wastewater treatment systems. This permit document and the associated onsite wastewater treatment system registration form make up the complete permit for the owner of the dwelling/non-dwelling facility identified in the registration.

Compliance with this permit will not be a defense to any enforcement action resulting from endangering the environment, health and human safety, or violating any State statute, regulation, or local ordinance. The permit holder will assure that the installation, operation, and maintenance of all equipment is in compliance with all of the conditions of this permit.

Pursuant to a Delegation Memorandum dated July 1, 2021, and signed by the Director, the undersigned herby issues this permit on behalf of the Director under the authority of Nebraska Administrative Code Title 124 – On-site Wastewater Treatment Systems.

6/27/2022

Date

Shelley Schneider

Permitting and Engineering Division Administrator

Department of Environment and Energy
P.O. Box 98922
Lincoln, Nebraska 68509-8922

Jim Macy, Director
OFFICE 402-471-2186 FAX 402-471-2909
ndeq.moreinfo@nebraska.gov

Table of Contents

I. Definitions

"**Baffle**" means a partition installed in a septic tank for proper operation of the tank and to provide maximum retention of solids, and includes sanitary tees.

"**Bedroom**" means any room within a dwelling that might reasonably be used as a sleeping room.

"**Bentonite**" means high swelling clay derived from a chemically altered volcanic ash.

"**Blackwater**" means wastes carried off by toilets, urinals, and kitchen drains. Blackwater is wastewater for the purposes of these regulations.

"**Building drain**" means that portion of the lowest horizontal piping of a drainage system which receives the wastewater discharge from within the walls of the building and conveys it to the building sewer beginning 30 inches outside the building footings.

"**Building sewer**" means that part of the drainage system extending from the end of the building drain to a treatment system or other approved point of disposal.

"**Certified Professional**" means a private onsite wastewater treatment system professional certified under the Private Onsite Wastewater Treatment System Contractors Certification and System Registration Act to perform the tasks for which the certification has been issued.

"**Chamber or chambers**" means a pre-formed manufactured conduit with an open-bottom configuration used to distribute effluent in a soil absorption system.

"**Construction**" means the installation of an onsite wastewater treatment system or the replacement, reconstruction, alteration, modification, expansion, or closure of an existing system including the installation of required wastewater lagoon fencing. Construction includes excavation or similar activity related to the installation, replacement, reconstruction, alteration, modification, or expansion of an onsite system, or closure of an onsite system.

"**Department**" means the Nebraska Department of Environment and Energy.

"**Depth marker**" or "**depth gauge**" means a device used to measure the liquid level present in a septic tank, wastewater lagoon, or other onsite wastewater treatment system.

"**Design flow**" means the maximum volume of wastewater estimated to be generated by a dwelling or non-dwelling facility in a twenty-four-hour period. It includes both a typical

operating capacity and a surge capacity for the system during periodic heavy use events. The sizing and design of the onsite wastewater treatment system components are based on the design flow.

"**Director**" means the Director of the Department of Environment and Energy.

"**Distribution box**" means a watertight box that receives effluent from a wastewater treatment component and distributes the flow by gravity to each individual section of a soil absorption system at a rate proportional to the bottom surface area of that section.

"**Distribution system, distribution piping, or distribution line**" means piping or other devices which distribute effluent within a soil absorption system either by gravity (gravity distribution system) or pressure (pressure distribution system).

"**Domestic septage or septage**" means the liquid or solid material removed from a septic tank, holding tank, cesspool, portable toilet, Type III marine sanitation device, or similar treatment works that receives only domestic wastewater. Domestic septage does not include liquid or solid material removed from a septic tank, holding tank, cesspool, portable toilet, or similar treatment works that receives either commercial wastewater or industrial wastewater and does not include grease removed from a grease trap at a restaurant. Domestic septage does not include wastewater containing high strength disinfectants, biological inhibitors, or deodorants or similar chemicals such as those used in camper waste tanks, laboratories, medical or veterinary facilities, or industrial facilities.

"**Domestic waste or domestic wastewater**" means human body waste and household type wastes including bath and toilet wastes, household laundry wastes, household kitchen wastes, and other similar wastes from a dwelling or a non-dwelling facility. Domestic waste or wastewater does not include drainage from roofs; footing or foundation drains; process waste from any industrial, agricultural, or commercial establishment; automotive or industrial chemicals or petroleum products; kitchen waste or wastewater from a restaurant or food preparation facility; water carrying animal waste or commercial process water or wastewater; or similar waste.

"**Dose or dosing**" means the use of a pump or siphon device to convey intermittent discharges of effluent by gravity or pressure distribution to a soil absorption system. Dosing is characterized by brief periods of high flow followed by long periods of no flow.

"**Dosing chamber or dosing tank**" means a watertight receptacle containing a pump or siphon device and that retains effluent until it is intermittently pumped or siphoned to the distribution system or soil absorption system.

"**Drop box**" means a watertight box that receives the discharge of effluent from a septic tank and provides serial or sequential distribution of effluent by gravity to each soil absorption system trench where such trenches are installed at progressively lower elevations.

"**Dwelling**" means a building, structure, or place used or intended to be used for human occupancy as a single family or multi-family residence and which generates domestic wastewater. If any portion of the wastewater generated at such a building, structure or place is a non-domestic wastewater, the facility must be considered a non-dwelling facility.

"**Effluent**" means the liquid flowing out of a septic tank or other treatment component of an onsite wastewater treatment system.

"**Encroachment**" means an intrusion on a required setback distance.

"**Fill"** means soil, rock, gravel, or waste material which has been placed over the original soil or bedrock and is characterized by a lack of distinct horizons or color patterns as found in naturally developed, undisturbed soils.

"**Filter material or filter media or treatment media**" means washed-gravel, rock, crushed stone, slag, clean gravel, or tire chips, any of which that range in size from one-quarter inch to 2½ inches. The filter media must be free of clay, silt, rubber crumbs, and other fine material. Flat slabs of tire are not acceptable for use as tire chips. Crushed stone must be durable and non-calcareous.

"**Gravelless distribution system**" means a distribution pipe, chamber, or other conduit designed for use in a soil absorption system without filter material.

"**Gravity Distribution or Gravity Dosing**" means to intermittently discharge effluent using the force of gravity to distribute effluent to a soil absorption system.

"**Graywater**" means all domestic waste excluding blackwater and including bath, lavatory, laundry, and sink waste except kitchen sink waste. Graywater is wastewater for the purposes of these regulations.

"**Grease trap or grease trap tank or grease interceptor**" means a watertight tank designed for the collection and retention of fats, oils, and grease, and which is accessible for periodic removal of the contents.

"**Groundwater**" means water occurring beneath the surface of the ground that fills available openings in rock or soil materials such that they may be considered saturated.

"**Holding tank**" means a tank for the storage of wastewater until it can be transported to a point for proper disposal.

"**Industrial waste**" means wastewater not otherwise defined as domestic wastewater, including the runoff and leachate from areas that receive pollutants associated with industrial or commercial storage, handling, or processing.

"**Influent**" means wastewater flowing into an on-site wastewater treatment system component or device.

"**Layout**" means the practice of determining wastewater design flows and loadings, selecting system type, sizing and selecting system components, or locating system components for the purpose of construction, reconstruction, alteration or modification of an onsite wastewater system.

"**Liner**" means the material or substance used to line the bottom of a wastewater lagoon, sand filter, wetlands cell, or other onsite wastewater treatment system so that percolation of liquids through the soil is controlled.

"**Loamy sand**" means a soil material containing 70 to 85 percent sand, up to 30 percent silt, and up to 15 percent clay.

"**Mound system**" means an onsite wastewater treatment system that includes a septic tank for primary treatment, an effluent pumping system, and a soil absorption system that includes a pressurized effluent distribution system within a prescribed layer of rock or acceptable treatment media that is elevated above the original ground surface by a layer of clean sand. The distribution system is pressure dosed to provide uniform distribution of effluent over the entire layer of treatment media, and treatment media is capped by a protective layer of geotextile fabric (to prevent fine material intrusion from the soil), soil, and grass.

"**Native soil**" means soil that is naturally occurring, formed by normal geologic and biological processes, which is characterized by the distinct soil horizons or color patterns found in naturally developed, undisturbed soil.

"**Non-dwelling facility**" means a building, structure, place of business, place of gathering, or waste collection system which is not a dwelling and which generates wastewater.

"**Onsite wastewater treatment system**" means any system of piping, treatment devices, or other appurtenances that convey, store, treat, or dispose of domestic or non-domestic wastewater, but not including wastewater from a livestock waste control facility, on the property where it originates, or on nearby property under the control of the user, which system is not connected to a public sewer system. An onsite wastewater treatment system begins at the end of the building drain.

"**Percolation rate**" means the rate, usually expressed in minutes per inch or mpi, which is obtained from soil percolation tests conducted to help determine the amount of soil absorption area required for a soil absorption system.

"**Percolation test**" means the determination of the suitability of an area for subsurface wastewater effluent disposal by a standardized test of the rate at which the undisturbed soil in an excavated pit or hole of standard size will absorb liquid per unit of surface area.

"**Plastic limit**" means the water content where soil transitions between brittle and plastic behavior characterized by the point at which a thread of soil begins to crumble when rolled between hands to a diameter of one-eighth inch.

"**Pollution**" means the man-made or man-induced alteration of the chemical, physical, biological, or radiological integrity of water of the State.

"**Private well**" means a well which provides water supply to less than 15 service connections and regularly serves less than 25 individuals.

"**Pressure distribution or pressure dosing**" means the use of a pump to intermittently discharge effluent under positive pressure through a network of piping designed to evenly distribute the effluent throughout a soil absorption system.

"**Professional Engineer or P.E.**" means a person who is licensed as a professional engineer by the Nebraska Board of Engineers and Architects.

"**Pump tank**" means a watertight container with a capacity over 50 gallons which houses a pump or pump unit and associated appurtenances used to convey effluent or sewage. The capacity of a pump tank is measured at the normal high (pump start) operating level. The capacity of a tank housing a pump or used as a pump tank is not considered part of the treatment volume required for a septic tank for the purposes of these regulations.

"**Pump chamber or pump basin**" means a watertight container with a capacity of 50 gallons or less and which houses a float or liquid level activated pump and associated appurtenances used to convey sewage or effluent. The capacity of a pump chamber is measured at the normal high (pump start) operating level. The capacity of a chamber housing a pump or used as a pump basin is not considered part of the treatment volume required for a septic tank and is not subject to tank setbacks for the purposes of these regulations.

"**Pumping**" means the practice of maintaining septic tanks, grease trap tanks, holding tanks, and any other components of onsite wastewater systems through the removal, transportation, and disposal of accumulated liquid and solid wastes.

"**Registered Environmental Health Specialist or REHS**" means a person who has the educational requirements and has had experience in the field of environmental sanitation required by Nebraska Revised Statutes §71-3703 and is registered with the Nebraska Board of Registration for Environmental Health Specialists in accordance with Nebraska Revised Statutes §71-3702 through §71-3715.

"**Repair**" means the correction of a mechanical, electrical, or minor structural defect in an existing onsite wastewater system component such as, but not limited to, sealing a crack in a tank lid, repairing or replacing a tank baffle or access manhole riser, repairing or replacing a pump or electrical switch, leveling a distribution box, replacing a building sewer pipe, or replacing a cracked pipe between the septic tank and soil absorption system. Repair does not include replacement, reconstruction or modification of a tank or soil absorption system; extension or enlargement of a soil absorption component and system; replacement of a distribution pipe; or repair or replacement of a metal or concrete block tank.

"**Sand**" means a soil material composed by weight of at least 90 percent of soil particles ranging in size between 0.05 and 2.0 mm or 0.002 inches and 0.08 inches.

"**Sandy soil**" means the soil having the following textures: sands, fine sands, loamy fine sands, and loamy very fine sands.

"**Septic tank**" means a watertight covered receptacle designed and constructed to receive wastewater from a building sewer, attenuate flows, store digested solids through a period of detention to allow settleable and floating solids to separate from liquids, allow digestion of organic matter by anaerobic bacteria, and allow the clarified liquid to discharge for additional treatment and final dispersal to a soil absorption system.

"**Sewage**" means any water carrying domestic waste exclusive of footing and roof drainage, from any industrial, agricultural, or commercial establishment or any dwelling or any other structures.

Domestic waste includes but is not limited to liquid waste produced by bathing, laundry, cooking operations, and liquid waste from toilets and floor drains and specifically excludes animal waste and commercial process water.

"**Site**" means the area bounded by the dimensions required for the proper location of the soil absorption system.

"**Siting**" means the practice of the investigation, examination, and reporting of design-controlling physical characteristics of an area at which an onsite wastewater system is to be constructed, reconstructed, altered, or modified; including, but not limited to topography, drainage, landscape position, soil evaluation, location and type of wells, water lines, property lines, foundations, and surface water features.

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

"**Sludge**" means the accumulated settled solids deposited from wastewater and containing water to form a semi-liquid mass.

"**Soil absorption system**" means a the part of the onsite wastewater treatment system that uses the soil to further treat and dispose of effluent from the onsite wastewater treatment system in a manner that does not result in a point source discharge and does not create a nuisance, health hazard, or ground or surface water pollution.

"**Soil Evaluation**" means the practice of the investigation, examination, testing, and reporting of design-controlling characteristics of the soil and subsurface features at an area at which an onsite wastewater soil absorption system is to be constructed, reconstructed, altered, or modified; including, but not limited to soil type, structure, permeability, absorption capacity, and percolation rate, and the depth to seasonal high groundwater, bedrock, or other subsurface barrier layers.

"**Surface waters**" means all waters within the jurisdiction of this state, including all streams, lakes, ponds, impounding reservoirs, marshes, wetlands, watercourses, waterways, springs, canal systems, drainage systems, and all other bodies or accumulations of water, natural or artificial, public or private, situated wholly or partly within or bordering upon the state. Impounded waters in this definition do not include areas designated by the Department as wastewater treatment or wastewater retention facilities or irrigation reuse pits.

"**Tank**" means a watertight structure or container used to hold wastewater for such purposes as aeration, dilution, disinfection, equalization, mixing, sedimentation, storage, collection for transport, treatment, or addition of chemicals.

"**Wastewater**" means liquid and water borne wastes from a dwelling or non-dwelling facility. Wastewater includes both blackwater and graywater.

"**Wastewater works**" means facilities for collecting, transporting, pumping and treating wastewater and the disposal of treated effluent and sludge.

"**Waters of the state**" means all waters within the jurisdiction of this state, including all streams, lakes, ponds, impounding reservoirs, marshes, wetlands, water courses, waterways, wells, springs, irrigation systems, drainage systems and all other bodies or accumulations of water, surface or underground, natural or artificial, public or private, situated wholly or partly within or bordering upon the state.

II. General Conditions

A. Coverage under this permit is granted to an owner of a dwelling/non-dwelling facility who sites, constructs, reconstructs, alters, or modifies a septic system provided:

1. The system is sited, constructed, reconstructed, altered, or modified according to the standards set forth in the Specific Conditions section;
2. The system is sited, constructed, reconstructed, altered, or modified by a certified professional authorized to perform the work in accordance with Title 124;
3. Within 45 days from the completion of construction, reconstruction, alteration, or modification, the system is registered and applicable fees are paid in accordance with Title 124;
4. A copy of the following information is kept on the premises of the facility using the onsite wastewater treatment system and made available to the Department by the owner or installer upon request:
    a. Certification signed by a professional engineer, registered environmental health specialist, or certified professional of compliance with the requirements found in the Specific Conditions section of this permit. A certification number must accompany the signature;
    b. An appropriately scaled drawing of the onsite wastewater treatment system, which specifies location, setbacks, capacity, materials of construction, and the construction details for all components of the system, including pump and pump tank or pump chamber specifications for any system using a pump. The scaled drawing must be on no less than 8.5 by 11 inch paper and must be neatly drawn with appropriate dimensions and fixed reference point indicated;
    c. Data and results for soil percolation tests or seepage tests performed in accordance with Title 124; and
5. Upon review of the system registration and any additional documentation if requested, the Department determines the system qualifies for coverage under this permit.
6. The system is operated in accordance with the conditions of this permit and Title 124.

B. Coverage under this permit is granted to the owner of the dwelling/non-dwelling facility identified in the registration.

1. Coverage under this permit will transfer from the owner identified in the registration to any subsequent owner of the facility.
2. Subsequent owners maintaining coverage under this permit are subject to all obligations and conditions described in this permit.

C. Coverage under this permit may be revoked for cause in accordance with Title 124.

D. Coverage under this permit does not relieve an owner or certified professional from the responsibility to comply with all applicable portions of Title 124, *On-site Wastewater Treatment Systems* and any other requirements under local, State, or Federal law.

1. Nothing in this permit will prevent more stringent local requirements from applying.

E. Any permit noncompliance will constitute a violation of the Private Onsite Wastewater Treatment System Contractors Certification and System Registration Act and/or the Nebraska Environmental Protection Act, and is grounds for enforcement action or permit revocation.

F. Any owner or operator who failed to submit any relevant facts or who submitted incorrect information in a general permit application, upon becoming aware of such failure or incorrect submittal, must promptly notify the Department, and if ineligible for coverage under this general permit, must submit a construction permit application under the provisions of Title 124.

G. The owner of a facility must allow a Department representative to enter upon the premises at reasonable times in order to inspect the onsite wastewater treatment system and to sample and monitor any area affected by the system.

H. This permit may be revoked in accordance with Title 124.

III. Specific Conditions

A. **Site Evaluation**. Each proposed site for the location of an onsite wastewater treatment system must be evaluated by a Professional Engineer, Registered Environmental Health Specialist, or Master Installer with a Mound Endorsement, and the following information must be recorded and provided to the Department on request.

1. The type, size, location, and elevation of the proposed system, clearly identified on a scaled drawing of sufficient size which will include: the legal description and survey of the lot and immediate vicinity property lines, buildings, water supply wells, buried water pipes and utility lines, the ordinary high water mark of lakes, rivers, streams, and the location and the type of water supply wells within 1000 feet of the proposed onsite wastewater treatment system
2. Depth to the seasonal highest measured or estimated groundwater table and to the bedrock or other barrier layer surface, if this depth is less than the depth of the seasonal high groundwater table, along with a detailed description of the method used to determine depth. If the depth to seasonal high groundwater or to the bedrock or other barrier layer is less than 10 feet, soil borings or other site specific methods are required to be used
3. Direction of groundwater flow.
4. Soil conditions, properties, and soil percolation test locations, data and results

5. Additional information may be required as part of the application process for a permit or subdivision approval.

B. Design Flow. The design flow for the system must:

1. Be less than 1,000 gallons of domestic wastewater per day.
2. Not include wastewater other than domestic wastewater
3. For a single-family dwelling, the design flow shall not be less than 100 gallons per day plus 100 gallons per day per bedroom. (See Table 1)
4. For a multi-family dwelling or multiple single-family dwellings connected to a common onsite wastewater system component, the design flow shall not be less than 100 gallons per day per dwelling unit plus 100 gallons per day per bedroom based on the total number of bedrooms. (See Table 2)
5. For a non-dwelling facility, the design flow shall not be less than the highest daily wastewater flow that is calculated to be generated based on the characteristics of the occupancy and use of the facility.
    a. For non-dwelling facilities, the quantity of flow generated for various occupancy and uses must be consistent with nationally recognized data published by the United States Environmental Protection Agency, state onsite wastewater regulatory agencies, or nationally recognized plumbing codes. If use of a non-dwelling facility includes residential occupancy, the estimated flow from the non-residential use must be added to a residential design flow of 100 gallons per day plus 100 gallons per day per bedroom.

Table 1 – Design Flow for Single Family Dwelling

Number of Bedrooms*	1	2	3	4	5	6	7	8	9
Design Flow, Gallons per Day	200	300	400	500	600	700	800	900	1,000

Table 2 – Design Flow for Multi-Family Dwelling

Number of Dwelling Units	Total Number of Bedrooms						
	2	3	4	5	6	7	8
	Design flow in Gallons per Day						
2	400	500	600	700	800	900	1,000
3	500	600	700	800	900	1,000	**
4	600	700	800	900	1,000	**	**
5	700	800	900	1,000	**	**	**

C. Groundwater Table. The seasonal high water elevation of the groundwater table must be at least four feet below the bottom of the infiltrative surface of the soil absorption system in order to provide adequate filtration through the soil and avoid pollution of the groundwater.

1. A minimum of one foot of vertical separation of native undisturbed soil is required between the bottom of the sand fill of the mound for a mound system and the top of the seasonal high groundwater level, bedrock, or other limiting soil feature.
2. The minimum vertical separation from the treatment media distribution bed to the top of the seasonal high groundwater, bedrock, or other limiting soil feature is four feet.

3. One or more of the following sources or types of information must be used to determine the seasonal high water elevation of the groundwater.
    a. U.S. Department of Agriculture Natural Resources Conservation Service soils maps and soil interpretation records.
    b. Evaluation of soil color and the presence or absence of mottling.
    c. Evaluation of impermeable or semi-permeable soil layers.
    d. Measured water levels from nearby test holes, observation wells, or water wells.

D. Setback Distances. The installation of a system components is prohibited within the horizontal setback distances in Table 2.1 in Title 124. The location restrictions and horizontal setback requirements for soil absorption systems from Table 2.1 in Title 124 apply and must be measured from the toe of the mound. (See following page)

Lagoon, Tank and Soil Absorption System Setbacks (Ref. Title 124, Table 2.1)

	Minimum Setback Distance feet (meters)		
Item	Tanks	Absorption, Infiltrative, and Evaporative Systems	Lagoons
Surface Water	50 ft. (15.2 m)	50 ft. (15.2 m)	50 ft. (15.2 m)
Private Drinking Water Wells	50 ft. (15.2 m)	100 ft. (30.5 m)	100 ft. (30.5 m)
Public Drinking Water Supply Wells:			
Non-Community System*	50 ft. (15.2 m)	100 ft. (30.5 m)	100 ft. (30.5 m)
Community System	500 ft. (152.4 m)	500 ft. (152.4 m)	1000 ft. (304.8 m)
Community System when a septic system or soil absorption system of > 1000 gpd is installed	500 ft. (152.4 m)	1000 ft. (304.8 m)	N/A
Horizontal Closed Loop Geothermal Wells (trenched or dug and above the ground water table)	25 ft. (15.2m)	25 ft. (15.2m)	25 ft. (15.2m)
All Other Water Wells	50 ft. (15.2 m)	100 ft. (30.5 m)	100 ft. (152.4 m)
Water Lines:			
Pressure Main/Service Connection/Suction Lines	10 ft. (3.1 m)	25 ft. (7.6 m)	25 ft. (7.6 m)
Property Lines	5 ft. (1.5 m)	5 ft. (1.5 m)	50 ft. (15.2 m)
Trees	NA	NA	50 ft. (15.2 m)
Parking area, driveway, sidewalk, or other impermeable surface or cover	5 ft. (1.5 m)	5 ft. (1.5 m)	50 ft. (15.2 m)
Foundation:			
Class 1	15 ft. (4.6 m)	30 ft. (9.1 m)	100 ft. (30.5 m)
Class 2	10 ft. (3.1 m)	10 ft. (3.1 m)	100 ft. (30.5 m)
Class 3	7 ft. (2.1 m)	10 ft. (3.1 m)	50 ft. (15.2 m)
Neighbor's Foundation:			
Class 1	25 ft. (7.6 m)	40 ft. (12.2 m)	200 ft. (61.0 m)
Class 2	20 ft. (6.1 m)	30 ft. (9.1 m)	200 ft. (61.0 m)
Class 3	15 ft. (4.6 m)	20 ft. (6.1 m)	100 ft. (30.5 m)
*See NAC Title 179 – Public Water Supply Systems, 7-010, for a complete definition for Non-community systems. It should be noted that some non-community systems may have more stringent setback requirements, per Title 179. * Class 1 means a basement, a non-basement footing, swimming pool, or slab-on-grade living quarters where any portion of the living quarters basement, footing, or slab is lower in elevation than the onsite wastewater treatment system component.			
* Class 2 means a basement, a non-basement footing foundation, trailer house, swimming pool, or slab-on-grade living quarters higher in elevation than the on-site wastewater treatment system. Any other foundation that is not a Class 1 or Class 3 is a Class 2 Foundation			
* Class 3 means slab-on-grade construction that is not used as living quarters.			

E. Soil Percolation. Soil percolation tests will be conducted in the area where the soil absorption system will be located. Such tests must not be made on disturbed ground or frozen ground. Where fissured or creviced formations are encountered below the ground surface, the Department will be consulted for assistance. Soil percolation tests must be conducted by a professional engineer, registered environmental health specialist, or a certified professional holding a certificate in the category of Inspector, Soil Evaluator, Master Installer, or Journeyman Installer, and using a methodology approved by the Department. The Department may require verification of percolation rates when submitted results are inconsistent with other known data.

1. The percolation rate of the native undisturbed soil beneath the sand fill must not be slower than 60 minutes per inch.
2. The percolation rate of the native undisturbed soil must be measured in the top 12 inches of the soil.

F. Tank Construction.

1. A septic, holding, dosing, pumping, grease trap, or other tank used in an onsite wastewater treatment system must be constructed of materials not subject to excessive corrosion or decay and must be watertight. Acceptable tank construction materials are concrete, fiber reinforced plastic, high density plastic, and fiberglass.
2. When precast and cast in place reinforced concrete tanks are used they must be properly cured and of watertight construction.
3. All concrete interior surfaces of a tank that are exposed to air must be coated with a bitumastic or similar protective compound beginning at an elevation 3 inches below the normal effluent operating level to minimize corrosion and degradation of the concrete.
4. Concrete block, brick and metal are not acceptable materials for new tank construction.
5. The tank must be designed to withstand soil pressures when empty and not collapse or undergo excessive deflection which would prevent the proper operation of the system, crack or distort components of the system such as the baffles, prevent proper sealing of lids over manholes and inspection ports, reduce capacity below the required minimum tank design capacity, or reduce the design working volume of the system.
6. All septic tanks must be permanently marked to specify the capacity in gallons, manufacturer, and the manufacturer's address. The gallon and manufacturing identification label must be located next to the manhole towards the inlet side.

G. Tank Design and Placement. For coverage under this permit, all septic tanks and holding tanks regardless of material or method of construction will conform to the following criteria.

1. The depth from the invert of the outlet to the floor of the tank (liquid depth) of any septic tank or compartment thereof shall not be less than 36 inches and a liquid depth greater than 78 inches shall not be considered in determining tank capacity. The diameter of a septic tank shall not be less than 60 inches and the length must be approximately two times the width.
2. No septic tank or compartment thereof shall have an inside horizontal dimension less than 24 inches.
3. Inlet and outlet connections of the septic tank must be provided with baffles.
4. The space in the septic tank between the liquid surface and the top of the inlet and outlet baffles must be equivalent to 20 percent of the total required liquid capacity, except that in horizontal cylindrical tanks and tanks with other irregular, non-rectangular cross-sectional shapes this space must be equivalent to15 percent of the total required liquid capacity.
5. Inlet and outlet baffles must be constructed of acid resistant concrete, acid resistant fiberglass, or plastic.
6. Sanitary tees must be affixed to the inlet or outlet pipes with a permanent waterproof adhesive. Baffles must be integrally cast with the septic tank, affixed with a permanent waterproof adhesive, or affixed with stainless steel connectors top and bottom.
7. The septic tank inlet baffle must extend at least six inches but not more than 20 percent of the total liquid depth below the liquid surface and at least one inch above the crown of the inlet sewer.
8. The septic tank outlet baffle and the baffles between compartments must extend below the liquid surface a distance equal to approximately 40 percent of the liquid depth, except that the penetration of the indicated baffles or sanitary tees for horizontal cylindrical tanks and tanks with other irregular, non-rectangular cross-sectional shapes must be approximately 35 percent of the total liquid depth. In no case shall the baffles or tees extend less than six inches above the liquid surface.
9. There must be at least one inch between the underside of the top of the septic tank and the highest point of the inlet and outlet devices.
10. The septic tank inlet invert must be at least one inch above the outlet invert.
11. The septic tank inlet and outlet must be located opposite each other along the axis of maximum dimension and must be constructed of non-corrosive materials. The horizontal distance between the nearest points of the inlet and outlet devices must be at least four feet. A septic tank with two or more compartments may have the inlet and outlet located along the end of the tank or within 12 inches of the end of

the tank as long as the inlet and outlet baffle requirements identified in this chapter are met.

12. Sanitary tees must be at least four inches in diameter. Inlet baffles must be located no less than six inches or no more than 12 inches measured from the end of the inlet pipe to the nearest point on the baffle. Outlet baffles must be located six inches measured from beginning of the outlet pipe to the nearest point on the baffle.
13. Septic Tank or Holding Tank Access
    a. There must be one or more access manholes at least 12 inches in diameter and located within six feet of all walls of the tank. Each access manhole must have a properly secured cover.
        i. The manhole must extend through the top of the tank to a point within 12 inches but at least six inches below grade for a tank with no manhole riser. The manhole cover must be covered with at least six inches of soil unless otherwise properly secured to prevent unwarranted access.
        ii. For a tank with a manhole riser, the riser must be sufficiently large to allow for access and removal of the manhole cover. The manhole riser may extend to or above the ground surface. The manhole riser must have a properly secured cover to prevent unwarranted access.
    b. Each septic tank must have an inspection pipe at least six inches in diameter over both the inlet and outlet devices. The inspection pipe must extend to or above the ground surface and be capped flush or above finished grade. The inspection pipe cap must be properly secured to prevent unwarranted access. A manhole access riser that meets the requirements of this permit may be used over both the inlet and outlet devices to satisfy the inspection pipe requirement.
14. Single Tank
    a. Where a septic system has a single septic tank larger than 3,000 gallons that is fabricated as a single unit, the tank must be divided into two or more compartments.
    b. When a septic tank is divided into two compartments, the volume in the first compartment in the direction of flow must not be less than one-half or more than two-thirds of the total volume of the tank.
    c. When a septic tank is divided into three or more compartments, one-half of the total volume must be in the first compartment and the other half equally divided in the other compartments.
    d. Connections between compartments must be baffled so as to obtain effective retention of scum and sludge. The submergence of the inlet

and outlet baffles of each compartment must be as specified in g and h of this section.

e. Adequate venting must be provided between compartments by baffles or by an opening of at least 50 square inches near the top of the compartment wall.

f. Adequate access to each compartment must be provided by one or more manholes.

15. Multiple Tanks

a. Where more than one septic tank is used to obtain the required liquid volume, the tanks must be connected in series.

b. The first septic tank must not be smaller than any subsequent tanks in series.

16. Septic tanks must be bedded with at least six inches of sand or fine gravel where rock or other undesirable conditions are encountered. The tank must be placed level. Backfilling the excavation for the tank must be done in layers with sufficient compaction to avoid settling. Backfill material must be free of large stones and debris.

17. A tank subject to flotation, such as one located in an area where the seasonal high water table may be higher than the bottom of the tank, must be properly secured or ballasted to prevent flotation.

H. Tank Capacity.

1. Dwelling

a. The minimum septic tank capacity for a single family or multi-family dwelling must be determined using the design flow and the tank capacity listed in Table 3. The capacity of any pump tank or pump chamber is not considered part of or applicable to the required minimum septic tank capacity.

b. For a dwelling served by more than one septic system, the total design flow for the dwelling must be distributed between the separate systems based on the percentage of the design flow that will be conveyed to each system. The minimum septic tank capacity for each system must be as listed in Table 3. In no case shall the minimum septic tank capacity for any system be less than 1,000 gallons.

c. A pump tank serving a dwelling or non-dwelling must have a minimum storage capacity above the normal high (pump start) operating level for one day of flow at the design flow rate.

2. Non-dwelling facility

a. The liquid capacity of a septic tank serving a non-dwelling facility must be at least equal to 1,125 gallons plus 0.75 times the design flow in

gallons per day (gpd) for flows over 1,500 gpd. For flows of 1,500 gpd or less, 1.5 times the design flow may be used but a minimum of a 1,000 gallon tank is required. For a non-dwelling facility served by multiple septic systems, the minimum septic tank capacity for each system must be 1,000 gallons.

3. Septic tank capacity for a single compartment tank must be increased by 50 percent to provide adequate attenuation when a pump is used to deliver wastewater from the building, or after the building drain, into the septic tank.
4. The capacity of a septic tank means the interior volume of the tank below the level of the inside bottom of the outlet or effluent pipe. The capacity shall not include the volume of the air space above the normal operating water level of the tank.
5. The capacity of a holding tank or a pump tank means the interior volume of the tank below the level of the inside bottom of the inlet or influent pipe. The capacity shall not include the volume of the air space at the top of the tank.

Table 3 - Minimum Septic Tank Capacity for a Dwelling *

Design Flow in Gallons per Day	Septic Tank Capacity in Gallons		
	For Dwelling without a Garbage Grinder or a Large Capacity Tub	Dwelling with a Garbage Grinder or a Large Capacity Tub	Dwelling with a Garbage Grinder and a Large Capacity Tub
200	1,000	1,000	1,000
300	1,000	1,000	1,250
400	1,000	1,250	1,500
500	1,250	1,500	1,750
600	1,500	1,750	2,000
700	1,750	2,000	2,250
800	2,000	2,250	2,500
900	2,250	2,500	2,750
1,000	2,500	2,750	3,000

* A “large capacity tub” means any bathtub or similar fixture with a maximum working volume greater than 50 gallons. A “garbage grinder” is typically used or placed in the kitchen sink drain and may also be referred to as a garbage disposal or waste disposal.

I. Percolation Tests.

1. At least three test holes must be dug and spaced uniformly over the proposed absorption field site. If the difference between the fastest and the slowest measured percolation rate is greater than 20 minutes per inch, or there are other indications that soil conditions are highly variable, a minimum of four test holes and two test holes per lateral is required.
2. These holes must be dug or bored with horizontal dimensions of from four to twelve inches and vertical sides to the depth of the bottom of the proposed distribution trench. Holes can be bored with a posthole type auger.
3. Roughen or scratch the bottom and sides of the holes to provide a natural surface. Remove all loose material from the hole. Place about two inches of 1/4 to 3/4 inch gravel in the hole to prevent bottom scouring.
4. Fill the hole with clear water to a minimum depth of 12 inches over the gravel. By refilling, if necessary, or by supplying a surplus reservoir of water (automatic siphon), keep water in the hole for at least four hours and preferably overnight.
5. Soils with moderately slow permeability or that contain greater than 30 percent clay will require several days soaking to reach saturation, especially when the soil is dry, in order to obtain the required saturation prior to making measurements.
6. In sandy soils containing little or no clay, soaking is not necessary. If after filling the hole twice with 12 inches of water the water seeps completely away each time in less than 10 minutes then the test can proceed immediately and described in below.
7. Percolation rate measurements should be made on the day following the saturation process, except in highly permeable sandy soils with fast percolation rates as noted below or in less permeable soils with high clay content and slow percolation rates, as note above. For all soils, the percolation rate of the planned last test measurement for any one test hole should approach a uniform rate and not vary more than 10 percent from the previous measurement for that test hole.
8. If the water remains in the test hole after overnight saturation, adjust the water depth to a minimum of six inches over the gravel. From a fixed reference point, measure the drop in water level during an approximate 30 minute period.
9. If no water remains in the hole after overnight saturation, add clear water to a depth of six inches over the gravel. From a fixed referenced point, measure the drop in water level at approximate 30 minute intervals over a four hour period, refilling the hole to a depth of six inches as necessary after each 30 minute period. The drop which occurs during the final 30 minute period is used to calculate the percolation rate.
10. A shorter measurement time interval of 10 minutes may be used for sandy or coarse grained soils with fast permeability where the first six inches of water seeps away in less than 30 minutes even after the overnight saturation or swelling

period. Six test measurements must be taken, one at the end of each 10 minute interval, refilling the hole to a depth of six inches as necessary after each interval. The drop that occurs during the final 10 minutes is used to calculate the percolation rate.

11. The percolation test data must be recorded and maintained on the premises, and made available to the Department by the owner or installer upon request.
12. Other methods of determining the percolation rate may be approved by the Department if the method is recognized as providing accurate and consistent results.
13. The percolation rate of a test hole (the time in minutes for the water level in the test hole to drop one inch) is determined by dividing the number of minutes elapsed by the water level drop in inches during the final measurement period. The design percolation rate for the soil absorption system must be determined by averaging the percolation rate of all the test holes unless the difference between the fastest and slowest measured rates in an area is more than 20 minutes per inch, in which case the slowest percolation rate must be used.

J. Site Preparation.

1. Vegetation over two inches tall and loose organic matter must be removed prior to placing the sand layer. Trees and brush must be cut flush with the ground surface and the roots left in place.
2. The supply pipe from the pump to the effluent distribution system must be installed prior to preparation of the soil surface with minimal native soil disruption. The pipe trench must be backfilled using the excavated native soil and compacted level to avoid future settlement.
3. The native undisturbed soil under the entire mound area must be roughened to a depth of six to eight inches using backhoe teeth or chisel plow to improve the surface contact between the native soil and sand fill of the mound. The roughening must be performed with a four to six inch layer of sand in place and only when the moisture content of the soil is below its plastic limit. The native soil must not be pulverized or compacted. Rototilling is not permitted. Disking is permitted only if the native soil is sand or loamy sand. The roughening must be performed along the contour or perpendicular to the slope.

K. Sand Layer.

1. A layer of clean sand must be installed over the original ground surface to a thickness that provides at least 48 inches of vertical separation between the elevation of the bottom of the treatment media distribution bed as described below and seasonal high groundwater, bedrock, or any other barrier layer. The sand

layer must also be at least 12 inches thick below the uphill edge of the Treatment Media Distribution Bed.

2. The sand for the sand layer must be clean, natural silica free of fines and debris, meeting the gradation shown in Table 4.

Table 4 - Sand Specification for Endorsed Mound Sand Layer

Sieve Size	Percent Passing
3/8 inch	100
No. 4	95 to 100
No. 8	80 to 100
No. 16	45 to 85
No. 30	15 to 60
No. 50	3 to 15
No. 100	0 to 4
No. 200	0 to 2

3. The first six inches of the sand layer must be placed immediately prior to roughening the native undisturbed soil surface. The first sand layer must be placed without driving vehicles of any kind on the area of the soil surface to be roughened. The remaining sand must be placed using techniques that minimize compaction and if vehicle traffic is necessary only track-type equipment must be used in placing and leveling the remaining sand with at least six inches of sand must be kept underneath equipment.
4. The top of the sand layer under the treatment media distribution bed must be level in all directions.
5. The sand layer must extend up on all sides of the treatment media layer to the same elevation as the top of the media.
6. The side slopes of the sand layer must not be steeper than three horizontal units to one vertical unit.
7. The sand layer must be constructed to the dimensions shown in Tables 6 through 8. Dimensions must be based on the depth to groundwater or impermeable layer, the percolation rate, the ground slope, and the number of bedrooms for dwellings or the maximum daily wastewater flow for non-dwellings.
8. The length direction of the sand layer must be oriented parallel to ground surface contour lines. On ground slopes greater than one percent, the length of the sand layer must be curved to match the site contour lines.

L. Treatment Media Distribution Bed.

1. A treatment media distribution bed at least 12 inches thick must be constructed on top of the sand layer. The media serves a number of purposes including but not limited to providing a biological treatment media, holding the effluent distribution

piping in place, and helping to distribute the partially treated effluent flow over the sand layer.

2. For rock used as the treatment media the rock must be ¾-inch minimum to 2 ½-inch maximum dimension, clean, durable, non-calcareous, and meeting the gradation specified in Table 5. Alternately, cylindrical bundles of expanded polystyrene synthetic aggregate contained in high-strength polyethylene netting may be used.

Table 5 - Rock Specification for Endorsed Mound Media Distribution Bed

Sieve Size	Percent Passing
2 ½	95 - 100
¾	0 – 5
No. 200	0 – 1

3. The width of the treatment media distribution bed must be 10 feet.

4. The length of the treatment media distribution bed must be as given in Tables 6 through 8. When the sand layer is curved to match site contour lines, the media layer must be curved to match the curvature of the sand layer.
5. There must be at least eight inches of media below and two inches above the effluent distribution piping. The media must encase the distribution piping. The effluent distribution piping must be level. For rock, the bottom nine inches of the media layer must be placed on top of the sand layer then the effluent distribution piping must be placed on top of the rock, and the remaining three inches of rock placed over the entire rock bed media area, encasing the distribution piping.
6. A minimum four-inch diameter PVC inspection pipe with removable cap must be installed from the bottom of the media bed extending to six inches above the mound surface. The bottom six inches of the inspection pipe must have two rows of holes three-eighth inch in diameter spaced nominally three inches apart around the circumference of the pipe.

M. Effluent Distribution Piping.

1. Pressure distribution must be used to distribute effluent evenly throughout the treatment media bed. Distribution must be by a piping system consisting of a force main pipe, manifold pipe, and lateral distribution pipes.
2. All pipe used for pressure distribution must be at least Schedule 40 or stronger PVC pipe with a suitable pressure rating for the intended use.

N. Force Main.

1. The nominal force main pipe inside diameter must be 2 inches.
2. If the distribution laterals in the mound are lower than the low water level in the pump tank, a sewage vacuum breaker valve must be installed at the high point of the force main or a three-sixteenth inch weep hole must be adequately placed in the bottom of the force main inside the pump tank to prevent siphoning of the pump tank contents to the mound.
3. The force main must be installed at a continuous slope to allow the pipe to drain completely between pump cycles to prevent freezing. There shall be no sags or low spots that collect water. The force main must be buried between the pump tank and the mound at a depth sufficient to protect the pipe from damage.

O. Manifold Pipe.

1. The nominal manifold pipe inside diameter must be two inches.
2. The manifold pipe must run perpendicular to the long direction of the treatment media distribution bed.
3. The manifold pipe shall be located at either end of the rock bed or shall be at the midpoint of the length of the mound, with equal-length lateral distribution pipes running each side from the center-located manifold.

P. Lateral Distribution Pipes.

1. The 10-foot wide treatment media distribution bed must have three lateral distribution pipes running lengthwise, spaced 40 inches apart and 20 inches from the sides of the media bed.
2. The nominal inside diameter of the lateral distribution pipes must be 1.5 inches.
3. Each lateral pipe must have three-sixteenth inch diameter orifice holes drilled at 24 inch centers in a straight line along the bottom of the pipe. When a center-located manifold is used, the first orifice on each lateral must be 12 inches from the center of the manifold so that the 24 inch center-to-center spacing is maintained. All orifice holes must be precision drilled using a drill press, and the pipe must be deburred inside and outside.
4. Orifice shields must be affixed over each orifice to protect the orifice from blockage from contact with the treatment media, except that orifice shields are not required when the lateral distribution pipes are placed in perforated pipe, the perforated pipe must not exceed four inches nominal diameter, and there must be at least eight inches of treatment media below and two inches above the perforated pipe. Orifice shields must be designed with drain holes or slots to allow complete drainage to prevent freezing and must be removable to allow for orifice cleaning.
5. The number of orifices per lateral must be as shown in Table 10.

6. The downstream end of each lateral must be equipped with a sweep elbow turning up and terminating a minimum of six inches above the surface. Each sweep elbow must be equipped with either a shut-off valve readily accessible from the surface through a valve box or a screw-on cap, to allow flushing of the laterals.

Q. Soil Cover.

1. A layer of non-woven geotextile fabric must be placed over the top and sides of the treatment media distribution layer. The fabric must be of adequate thickness to resist tearing. The fabric must allow passage of water and must prevent migration of soil particles into the media layer.
2. A cover layer of loam or sandy loam soil must be placed over the media and fabric layers as well as the sand side slopes. Clay soil is not acceptable. This cover layer must be at least six inches thick over the side slopes and at the edges of the media bed, and must be crowned to provide at least 12 inches of cover soil over the middle of the media bed to promote surface drainage.
3. A layer of topsoil at least six inches thick, suitable for sustaining a healthy growth of perennial grass, must be placed over the entire mound area. After placement of the topsoil layer, the final minimum thickness of the loam and topsoil layers over the sand layer and media bed must be 12 inches and crowned to a minimum of 18 inches over the middle of the media bed.
4. Following construction of the mound, a shallow rooted perennial grass must be established and maintained on the entire surface of the mound and the ground surface upslope from the mound must be graded to drain precipitation around the ends of the mound. Brush, trees, or garden plants (including flowers or vegetable plants) must not be grown on the mound.

R. Primary Treatment (Septic Tank).

1. All wastewater discharged to a mound system must have undergone treatment in a septic tank that is designed, installed, and maintained in accordance with all requirements of this Permit.
2. The effluent from the septic tank must pass through a filter with one-sixteenth inch maximum openings before entering the pump to the effluent distribution piping. If more than one septic tank is used then the tanks must be placed in series and the filter must be placed in the outlet of the last tank.

S. Effluent Pumping System.

1. Each mound system must have an effluent pumping system to transport septic tank effluent to the effluent distribution piping in pressurized doses. The pumping system must include a pump tank, effluent pump, discharge piping, level controls, and alarm system.

T. Pump Tank.

1. The minimum pump tank capacity must be as shown in Table 10.
2. The pump tank must meet all the requirements for materials, construction, access, and installation as for septic tanks in accordance with this permit.
3. The pump tank must be watertight and access to the pump tank must extend to the ground surface with a secured lid.

U. Dose Pump.

1. The pump must be for submersible operation, designed for pumping wastewater or septic tank effluent. The pump must be capable of passing a one-sixteenth inch particle or be equipped with an adequate screening device to prevent clogging.
2. The pump must be securely supported within the pump tank to resist movement from starting torque and dynamic hydraulic forces in the discharge piping. The pump inlet must be located at a distance from the tank floor and walls as recommended by the pump manufacturer.
3. The pump must be removable without requiring human entry into the pump tank or other confined space.
4. The pump must be designed to produce the minimum flow rate and minimum discharge pressure listed in Table 10.
5. A pump with an internal check valve shall not be used, unless the check valve is removed or a one-quarter inch weep hole is drilled in the bottom of the discharge pipe to allow the force main to drain back to the pump tank between pump cycles. The discharge pipe must drain completely between cycles.

V. Discharge Piping.

1. The discharge piping must include a union or quick-disconnect fitting that allows the pump to be disconnected from the discharge pipe and removed from the pump tank without human entry into the tank.
2. The discharge piping must be Schedule 40 or stronger PVC pipe, must be no smaller than the pump discharge fitting size, and must provide a smooth transition to the two-inch diameter force main.

W. Pump and Level Controls and Alarms.

1. The pump tank must be equipped with a level control system to start the pump at a preset high water level, stop the pump and a preset low water level, and activate an alarm at a preset high water alarm level.
2. The level control and alarm switches must be of the sealed, weighted float or diaphragm type. The cords must be secured to prevent tangling. The level control switches must be located where they are visible from the ground surface

and accessible for cleaning and adjustment without human entry into the pump tank or other confined space.

3. The pump-stop control switch must be set to stop the pump at or above the minimum pump submergence level recommended by the pump manufacturer.
4. The pump-start control switch must be set to start the pump at a height above the pump-stop level to provide the required dose volume (see Table 10) based on the dimensions of the pump tank plus the volume of the force main pipe if the force main drains back to the pump tank. The volume for the two inch diameter pipe should be taken as 0.15 gallons per linear foot of pipe.
5. The high-level alarm switch must be set approximately three inches above the pump-start level.
6. The dose volume must be as shown in Table 10.
7. The pump control panel must include externally mounted visible and audible alarms. The alarms must be mounted in a location readily visible to the owner. If the control panel is mounted outdoors, the enclosure must be for weather tight duty.
8. The pump electrical power must be supplied on a separate electrical circuit from that of the alarm system.
9. The alarm system must be comprised of both audible and visible alarm indicators.
10. Electrical control panel(s) must be located outside the pump tank, must be protected from the weather and must provide no air path between the panel and the pump tank. Electrical connections inside the tank must be made using moisture and gas resistant connectors suitable for the wastewater environment.

X. Floor Drains.

1. A floor drain in a dwelling garage may be connected to an onsite wastewater treatment system provided the drain does not receive petroleum products, paint, organic solvents, antifreeze, or hazardous materials and meets design requirements of this section. These drains are designed to handle snow and ice melt along with occasional exterior vehicle washing.
2. A floor drain in a dwelling garage that is connected to an onsite wastewater treatment must meet the following design requirements:
    a. The floor drain must have an integral mud trap and oil separator; and
    b. The floor drain must be equipped with a watertight cap or a valve must be located immediately following the drain. The cap must normally be left secured on the drain or the valve must normally be left closed.
3. The design flow of the onsite wastewater treatment system must be increased at least 100 gallons to account for a dwelling garage floor drain connection to the system.

4. A permanent sign must be placed within view of the drain in accordance with Title 124.
5. The discharge of motor vehicle wastes or maintenance shop wastes to a septic system or to a soil absorption system is prohibited. The connection of a floor drain from a maintenance shop to a septic system or soil absorption system is prohibited.
6. Discharge of a non-domestic waste to a septic system is also subject to the requirements of Nebraska Administrative Code Title 122 - Rules and Regulations for Underground Injection and Mineral Production Wells.

Y. Maintenance of Septic Tanks.

1. The owner of a septic tank must have a Master or Journeyman Pumper, a professional engineer, or a registered environmental health specialist periodically inspect the septic tank and remove septage from the tank whenever 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.
2. Disinfectant or anti-bacterial products must not be used to clean the tank except as an optional step in preparing the tank for closure.

Z. Waste Prohibitions.

1. The type of waste that can be directed to an on-site wastewater treatment system is limited to domestic wastewater. The following wastes are prohibited from entering an onsite wastewater treatment operated under this permit.
2. Cooling water, groundwater infiltration, discharge from roof drains, discharge from foundation tile drains, swimming pool wastewater, or other clear water discharges.
3. Hazardous waste: Any chemical substance or material, gas, solid, or liquid designated as hazardous in accordance with Title 128 – Nebraska Hazardous Waste Regulations.
4. Those pollutants or combination of pollutants or disease causing agents, which after discharge and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will on the basis of information available to the Department cause either death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunction in reproduction), or physical deformations on such organism or its offspring.
5. The discharge of motor vehicle wastes to a septic system is prohibited. For the purposes of this permit, “motor vehicle” means mechanized equipment used in

agriculture, construction, industrial activities, maintenance, recreation, or transportation.

6. The discharge to a septic system of wastewater containing high strength disinfectants, biological inhibitors, or deodorants or similar chemicals (such as those used in camper waste tanks, laboratories, medical or veterinary facilities, or industrial facilities) is prohibited.

Table 6 - Mound Dimensions for Ground Slope of 0% to 1%

Depth to Seasonal High Ground-water (ft)	Percolation Rate (m.p.i.)	Bed-rooms	Flow (gpd)	Sand Layer Height (ft)	Total Berm Height (ft)	Total Mound Width (ft)	Total Mound Length (ft)	Rock Bed Length (ft)	Uphill Berm Width (ft)	Downhill Berm Width (ft)	End Berm Width (ft)
< 1.0	Construction permit required if less than 12 inches to seasonal high groundwater.										
≥ 1.0 and < 2.0	0 to 30	1	200	3	5	42	49	17	16	16	16
		2	300	3	5	42	57	25	16	16	16
		3	400	3	5	42	65	33	16	16	16
		4	500	3	5	42	74	42	16	16	16
		5	600	3	5	42	82	50	16	16	16
	>30 to 60	1	200	3	5	42	49	17	16	16	16
		2	300	3	5	42	57	25	16	16	16
		3	400	3	5	42	65	33	16	16	16
		4	500	3	5	42	74	42	16	16	16
		5	600	3	5	42	82	50	16	16	16
≥ 2.0 and < 3.0	0 to 30	1	200	2	4	36	42	17	13	13	13
		2	300	2	4	36	50	25	13	13	13
		3	400	2	4	36	58	33	13	13	13
		4	500	2	4	36	67	42	13	13	13
		5	600	2	4	36	75	50	13	13	13
	>30 to 60	1	200	2	4	36	43	17	13	13	13
		2	300	2	4	36	51	25	13	13	13
		3	400	2	4	36	59	33	13	13	13
		4	500	2	4	36	68	42	13	13	13
		5	600	2	4	36	76	50	13	13	13
≥ 3.0	0 to 30	1	200	1	3	30	37	17	10	10	10
		2	300	1	3	30	45	25	10	10	10
		3	400	1	3	30	53	33	10	10	10
		4	500	1	3	30	62	42	10	10	10
		5	600	1	3	30	70	50	10	10	10
	>30 to 60	1	200	1	3	34	36	17	12	12	10
		2	300	1	3	34	44	25	12	12	10
		3	400	1	3	34	52	33	12	12	10
		4	500	1	3	34	61	42	12	12	10
		5	600	1	3	34	69	50	12	12	10

Table 7 - Mound Dimensions for Ground Slope of >1% to 3%

Depth to Seasonal High Ground-water (ft)	Percolation Rate (m.p.i.)	Bed-rooms	Flow (gpd)	Sand Layer Height (ft)	Total Berm Height (ft)	Total Mound Width (ft)	Total Mound Length (ft)	Rock Bed Length (ft)	Uphill Berm Width (ft)	Downhill Berm Width (ft)	End Berm Width (ft)
< 1.0	Construction permit required if less than 12 inches to seasonal high groundwater.										
≥ 1.0 and < 2.0	0 to 30	1	200	3	5	43	49	17	15	18	16
		2	300	3	5	43	57	25	15	18	16
		3	400	3	5	43	65	33	15	18	16
		4	500	3	5	43	74	42	15	18	16
		5	600	3	5	43	82	50	15	18	16
	>30 to 60	1	200	3	5	45	49	17	15	20	16
		2	300	3	5	45	57	25	15	20	16
		3	400	3	5	45	65	33	15	20	16
		4	500	3	5	45	74	42	15	20	16
		5	600	3	5	45	82	50	15	20	16
≥ 2.0 and < 3.0	0 to 30	1	200	2	4	37	43	17	12	15	13
		2	300	2	4	37	51	25	12	15	13
		3	400	2	4	37	59	33	12	15	13
		4	500	2	4	37	68	42	12	15	13
		5	600	2	4	37	76	50	12	15	13
	>30 to 60	1	200	2	4	42	43	17	12	20	13
		2	300	2	4	42	51	25	12	20	13
		3	400	2	4	42	59	33	12	20	13
		4	500	2	4	42	68	42	12	20	13
		5	600	2	4	42	76	50	12	20	13
≥ 3.0	0 to 30	1	200	1	3	32	37	17	9	13	10
		2	300	1	3	32	45	25	9	13	10
		3	400	1	3	32	53	33	9	13	10
		4	500	1	3	32	62	42	9	13	10
		5	600	1	3	32	70	50	9	13	10
	>30 to 60	1	200	1	3	39	37	17	9	20	10
		2	300	1	3	39	45	25	9	20	10
		3	400	1	3	39	53	33	9	20	10
		4	500	1	3	39	62	42	9	20	10
		5	600	1	3	39	70	50	9	20	10

Table 8 - Mound Dimensions for Ground Slope of >3% to 5%

Depth to Seasonal High Ground-water (ft)	Percolation Rate (m.p.i.)	Bed-rooms	Flow (gpd)	Sand Layer Height (ft)	Total Berm Height (ft)	Total Mound Width (ft)	Total Mound Length (ft)	Rock Bed Length (ft)	Uphill Berm Width (ft)	Downhill berm width (ft)	End Berm Width (ft)
< 1.0	Construction permit required if less than 12 inches to seasonal high groundwater.										
≥ 1.0 and < 2.0	0 to 30	1	200	3	5	44	49	17	14	20	17
		2	300	3	5	44	57	25	14	20	17
		3	400	3	5	44	65	33	14	20	17
		4	500	3	5	44	74	42	14	20	17
		5	600	3	5	44	82	50	14	20	17
	>30 to 60	1	200	3	5	44	49	17	14	20	17
		2	300	3	5	44	57	25	14	20	17
		3	400	3	5	44	65	33	14	20	17
		4	500	3	5	44	74	42	14	20	17
		5	600	3	5	44	82	50	14	20	17
≥ 2.0 and < 3.0	0 to 30	1	200	2	4	37	43	17	11	16	14
		2	300	2	4	37	51	25	11	16	14
		3	400	2	4	37	59	33	11	16	14
		4	500	2	4	37	68	42	11	16	14
		5	600	2	4	37	76	50	11	16	14
	>30 to 60	1	200	2	4	41	43	17	11	20	14
		2	300	2	4	41	51	25	11	20	14
		3	400	2	4	41	59	33	11	20	14
		4	500	2	4	41	68	42	11	20	14
		5	600	2	4	41	76	50	11	20	14
≥ 3.0	0 to 30	1	200	1	3	32	39	17	9	13	11
		2	300	1	3	32	47	25	9	13	11
		3	400	1	3	32	55	33	9	13	11
		4	500	1	3	32	64	42	9	13	11
		5	600	1	3	32	72	50	9	13	11
	>30 to 60	1	200	1	3	39	39	17	9	20	11
		2	300	1	3	39	47	25	9	20	11
		3	400	1	3	39	55	33	9	20	11
		4	500	1	3	39	64	42	9	20	11
		5	600	1	3	39	72	50	9	20	11

Table 9 - Minimum Force Main Size– Schedule 40 PVC Pipe

Pumping Rate (gpm)	Total Force Main Length (ft)		
	0 to 100	>100 to 300	>300 to 500
0 to 20	1 1/4	1 1/2	2
>20 to 40	1 1/2	2	2 1/2
>40 to 60	2	2 1/2	3

Table 10 – Design Requirements for Rock Bed Lateral Pipe, Dose Pump, and Pump Tank

Bed-rooms	Flow (gpd)	Rock Bed Length (ft)	End Spacing * (ft)	Number of 3/16" Diameter Holes per Lateral	Number of Spaces at 24" Centers	Minimum Pump Capacity (gpm)	Minimum Pump Discharge Pressure Head ** (ft)	Gallons Pumped per Dose (gal)	Minimum Pump Tank Capacity (gal)
1	200	17	1.5	8	7	15	7 ft + H	70	500
2	300	25	1.5	12	11	22	9 ft + H	95	500
3	400	33	1.5	16	15	29	10 ft + H	120	500
4	500	42	2.0	20	19	36	12 ft + H	145	750
5	600	50	1.0	25	24	44	15 ft + H	170	750

* End Spacing is the distance from either end of the rock bed to the nearest lateral pipe orifice.

** H is the elevation difference between the pump intake and the top of the rock bed.

Title 124

Appendix A

FEE SCHEDULE

Category	Fee
Certification Examination (testing fee)	$50
Certificate by examination for Master Installer, Master Pumper, Soil Evaluator, or Inspector.	$300
Certificate by examination for Journeyman Installer or Journeyman Pumper	$100
Certificate by hardship for Master Installer, Master Pumper, Soil Evaluator, or Inspector	$300
Certificate by hardship for Journeyman Installer or Journeyman Pumper	$100
Renewal of Master Installer, Master Pumper, Soil Evaluator, or Inspector Certificate	$300
Renewal of Journeyman Installer or Journeyman Pumper Certificate	$100
Fee for Late Certification Renewal (no later than 60 days after certificate has expired, sufficient PDH)	$50
Registration of Onsite System	$140
Initial Late System Registration (46 to 90 days late)	$150
Final Late System Registration (91 or more days late)	$450
Application for Permit	$450
Application for Subdivision Review and Approval – Fee is for Each Lot Subject to Approval	$450 per lot

NOTES: All fees apply on the effective date. All fees are non-refundable. Fees apply to any documents received by the Department on or after, the effective date.

NEBRASKA
Good Life. Great Resources.
DEPT. OF ENVIRONMENT AND ENERGY

System Registration For Onsite Wastewater Treatment System - Septic System

12-013
Ver. 4/2020

Print or Type

Owner First Name | Initial | Last Name | Owner Phone Number

Business or Legal Entity Name (if applicable)

Owner Mailing Address | City | State | Zip

Physical address of system if different from owner's mailing address

Location *Legal description* OR *Geographical coordinates to 4 decimal points*

¼ ¼ Section Township Range County / Latitude Longitude

Mark One ☐ Dwelling ☐ Non-dwelling | Previous system registration number (if applicable) TS_____

Mark One

☐ New system ☐ Modification of existing system [☐ Tank only ☐ Trench only] ☐ Inspection only

☐ Temporary modification (Describe problem causing discharge and reason for temporary modification):_____

Design flow _____ gal/day # of Bedrooms* _____ Depth to seasonal high groundwater _____ feet

Percolation rate _____ min/inch Loamy sand liner installed* ☐ Yes ☐ No

Septic tank capacity _____ gallons Septic tank Manufacture/ Model* _____

☐ Garbage Grinder* ☐ Large capacity tub* Number of trenches _____ Width of trenches _____ inches

Total length of all trenches _____ feet Total effective trench bottom area _____ sq. ft.

Soil Absorption System Description **(Select one of the following):**

☐ Gravelless chambers without filter material (inside bottom width of chamber _____ inches)
Make and Model of chambers installed _____

☐ Gravelless chambers with filter material (describe filter material _____)
Make and Model of chambers installed _____

☐ Pipe with filter material (describe filter material _____)

☐ Gravelless pipe without filter material (diameter of the gravelless pipe _____ inches)

☐ Gravelless pipe with filter material (describe filter material _____)

☐ Bundled expanded polystyrene synthetic aggregate without filter material (bundle diameter _____in.)

☐ Bundled expanded polystyrene synthetic aggregate with filter material (describe filter material _____)

☐ Other (describe) _____

I swear or affirm that the system complies with Title 124 requirements and that the registration information and documentation submitted are true, complete and accurate.

(*Print or Type*) First Name | Initial | Last Name | Certificate/License Number

Signature of Certified Professional, Professional Engineer, or Registered Environmental Health Specialist | Date of Inspection or Completion of Construction

NOTICE: Failure to complete the form or include the appropriate fee(s) will delay the registration.

(*) Indicates item requested/ not required on registration

12-010
Ver. 4/2020

NEBRASKA
Good Life. Great Resources.
DEPT. OF ENVIRONMENT AND ENERGY

System Registration For Onsite Wastewater Treatment System – Holding Tank

Print or Type

Owner First Name Initial Last Name Owner Phone Number

Business or Legal Entity Name (if applicable)

Owner Mailing Address City State Zip

Physical address of system if different from owner's mailing address

Location *legal description* OR *Geographical coordinates to 4 decimal points*

¼ ¼ Section Township Range County / Latitude Longitude

Mark One

☐ Dwelling ☐ Non-dwelling

Mark One

☐ New system ☐ Modification, reconstruction or alternation of existing system ☐ System inspection only

☐ Temporary modification (Describe problem causing discharge and reason for temporary modification):

_____

System Information

Number of holding tanks in series _____ Total capacity _____ gallons

☐ Check box if tank(s) are equipped with alarm or visible float that indicates 90% capacity

Design flow _____ gal/day

Previous system registration number (if applicable) TS _____

I swear or affirm that the system complies with Title 124 requirements and that the registration information and documentation submitted are true, complete and accurate.

(*Print or Type*) First Name Initial Last Name Certificate/License Number

Signature of Certified Professional, Professional Engineer or Registered Environmental Health Specialist

Date of inspection or completion of construction

NOTICE: Failure to complete the form or include the appropriate fee(s) will delay registration.

Nebraska Department of Environment and Energy, PO Box 98922, Lincoln NE 68509-8922

NEBRASKA
Good Life. Great Resources.
DEPT. OF ENVIRONMENT AND ENERGY

System Registration For Onsite Wastewater Treatment System - Household Domestic Lagoon

Print or Type

Owner First Name Initial Last Name Owner Phone Number

Business or Legal Entity Name (if applicable)

Owner Mailing Address City State Zip

Physical address of system if different from owner's mailing address

Location *Legal description* OR *Geographical coordinates to 4 decimal points*

¼ ¼ Section Township Range County / Latitude Longitude

Mark One
☐ Dwelling ☐ Non-dwelling ☐ Inspection

Mark One
☐ New system ☐ Modification, reconstruction or alteration of existing system ☐ System inspection only
☐ Temporary modification (Describe problem causing discharge and reason for temporary modification):

System Information

Surface area at maximum operating depth _____sq. ft. Maximum operating depth *_____ ft.

Seepage rate of liner_____ inches/day Design flow _____ gal/day

Previous system registration number (if applicable) TS_____

I swear or affirm that the system complies with Title 124 requirements and that the registration information and documentation submitted are true, complete, and accurate.

(*Print or Type*) First Name Initial Last Name Certificate/License Number

Signature of Certified Professional, Professional Engineer, or Registered Environmental Health Specialist Date construction/inspection completed

NOTICE: Failure to complete the form or include the appropriate fee(s) will delay the registration.
(*) Indicates item not required on registration

NEBRASKA
DEPT. OF ENVIRONMENT AND ENERGY

System Registration For Onsite Wastewater Treatment System – Endorsed Mound System

Print or Type

Owner First Name Initial Last Name Owner Phone Number

Business or Legal Entity Name (if applicable)

Owner Mailing Address City State Zip

Physical address of system if different from owner's mailing address

Location *Legal description* OR *Geographical coordinates to 4 decimal points*

¼ ¼ Section Township Range County / Latitude Longitude

Mark One ☐ Dwelling ☐ Non-dwelling

Mark One
☐ New system ☐ Modification, reconstruction or alteration of existing system

Design flow _____gal/day

Depth to seasonal high groundwater _____feet Percolation rate _____min/inch

Septic tank capacity _____gallons

(Soil Absorption System Detail) Sand Layer Height _____feet

Description of Treatment Media in Distribution Bed (Select one of the following):

☐ Rock ☐ Bundled expanded polystyrene synthetic aggregate

Remaining Mound System Detail:

Maximum Ground Slope _____% Pump Tank Capacity _____gallons

Pump Control Levels (Measured from Bottom of Pump Tank):

On Level _____inches Off Level _____inches High Water Alarm Level _____inches

Dose Pump: Manufacturer _____ Pump Make _____ Pump Model _____

Force Main Length _____feet

Previous system registration number (if applicable) TS_____

I swear or affirm that the system complies with Title 124 requirements and that the registration information and documentation submitted are true, complete and accurate.

(*Print or Type*) First Name Initial Last Name Certificate/License Number

Signature of Certified Professional, Professional Engineer, or Registered Environmental Health Specialist

Date of Inspection or completion of construction

NOTICE: Failure to complete the form or include the appropriate fee(s) will delay the registration.
Nebraska Department of Environment and Energy PO Box 98922 Lincoln NE 68509-8922

NEBRASKA
Good Life. Great Resources.
DEPT. OF ENVIRONMENT AND ENERGY

System Registration For Onsite Wastewater Treatment System – Title 124 Permit System

Print or Type

Owner First Name Initial Last Name Owner Phone Number

Business or Legal Entity Name (if applicable)

Owner Mailing Address City State Zip

Physical address of system if different from owner's mailing address

Location *Legal description* OR *Geographical coordinates to 4 decimal points*

¼ ¼ Section Township Range County / Latitude Longitude

Mark One

☐ Dwelling ☐ Non-dwelling

Mark One

☐ New system ☐ Modification, reconstruction or alteration of existing system ☐ Inspection

System Information

☐ Holding tank ☐ Gravity septic system ☐ Lagoon ☐ Mound system

☐ Other – Describe _____

Depth to seasonal high groundwater _____ feet Percolation rate _____ min/inch

Design flow _____ gal/day Previous system registration number (if applicable) TS _____

Construction permit number (required) _____

I swear or affirm that the system complies with Title 124 requirements and that the registration information and documentation submitted are true, complete and accurate.

(*Print or Type*) First Name Initial Last Name Certificate/License Number

Signature of Certified Professional, Professional Engineer or Registered Environmental Health Specialist Date construction completed

NOTICE: Failure to complete the form or include the appropriate fee(s) will delay registration.

Individual or Sole Proprietor
United States Citizenship Attestation Form

For the purpose of complying with Neb. Rev. Stat. §4-108 through 4-114, I attest as follows:

☐ I am a citizen of the United States.

-OR-

☐ I am a qualified alien under the federal Immigration and Nationality Act. My immigration status and alien number are as follows:

_____.

I agree to provide a copy of my USCIS documentation upon request.

I hereby attest that my response and the information provided on this form and any related application for public benefits are true, complete, and accurate, and I understand that this information may be used to verify my lawful presence in the United States.

PRINT NAME _____
(first, middle, last)

SIGNATURE _____

DATE _____

Revised 08/18/2014

NEBRASKA
Good Life. Great Resources.
DEPT. OF ENVIRONMENT AND ENERGY

Onsite Wastewater Treatment Program

Application for Onsite Certification by Examination, Endorsement, Renewal or Hardship

For NDEE Use Only	NDEE ID:	Program ID:

Print or Type

First Name Initial Last Name Phone Number

Mailing Address City State Zip

Phone Number _____ Email _____

Business Name _____

Business Mailing Address City State Zip

Type of Application *Mark One*

- ☐ Certification by Examination
- ☐ Mound Endorsement *
- ☐ Certificate Renewal
- ☐ Hardship Certificate (additional requirements **)
- ☐
- ☐ Add New Category to Existing Certification (exam fee only)
- ☐ Upgrade Journeyman to Master (indicate category (s) below/ no exam fee required)

Exam Category(s) *Mark All that Apply*

- ☐ Master Installer
- ☐ Journeyman Installer
- ☐ Mound Endorsement *
- ☐ Master Pumper
- Journeyman Pumper
- ☐ Inspector ***
- ☐ Soil Evaluator

Date and location of scheduled exam requested. (All applications received less than 5 days prior to scheduled exam date may be held for the next scheduled examination date.)

Date _____ Location _____

I swear or affirm that the information and documentation submitted are true, complete and accurate.

Signature Date

Include the applicable certification fee(s), exam fee(s), renewal fee(s), hardship fee and/or endorsement fee(s) as noted in the Fee Schedule found in Title 124.
You must also complete and submit a United States Citizenship Attestation Form if the Department does not have one on file for you.
Make check or money order payable to Nebraska Department of Environment and Energy.
Mail completed form with the appropriate fees to NDEE Onsite Unit, PO Box 98922, Lincoln, NE 68509-8922

* Must be a Master Installer to apply for Mound Endorsement.
** Must submit clear statement of hardship conditions and evidence of competency in certificate category sought.
*** If you work for a governmental agency or subdivision as an inspector of onsite wastewater treatment systems, you may be eligible for a fee waiver. Contact the Onsite Wastewater Unit for more information at 402-471-4285.

NOTICE: Failure to complete the form or include the appropriate fee(s) will delay the application.

NEBRASKA
Good Life. Great Resources.
DEPT. OF ENVIRONMENT AND ENERGY

Onsite Wastewater Treatment System
Soil Percolation Test Data Sheet

12-014
Ver. 4/2020

Owner Name _____ Phone _____

Address _____
City State Zip

Location (Attach a sketch of the property showing test hole locations)

___ ___ _____ _____ _____ _____
¼ ¼ Section Township Range County

Lot # _____ Subdivision _____

Soil Type (Check one)

Sand ☐ Silt ☐ Clay ☐ Sandy Clay ☐ Loamy Sand ☐ Silty Clay ☐

Silty Clay Loam ☐ Sandy Loam ☐ Silt Loam ☐

Dates of Test

Start Date _____ to End Date _____, 20____

Weather Conditions

Precipitation _____ Avg. Temp _____ ^{0}F

Percolation Test Measurements and Data

Hole No.	*Hole Depth (in.)*	*Pre-saturation Period*				*Percolation Readings (last period)*					*Results*		
		Start		*End*		*Start*			*End*				
		Date (Mo./ Day)	*Time (Hr./ Min)*	*Date (Mo./ Day)*	*Time (Hr./ Min)*	*Date (Mo./ Day)*	*Time (Hr./ Min)*	*Water Level (inch)*	*Time (Hr./ Min)*	*Water Level Drop (inch)*	*Elapsed Time (minutes)*	*Drop in Water Level (inches)*	***Percolation Rate** (m ÷ l) (Minutes per inch)*

Tests must be performed by a certified professional, a professional engineer or a registered environmental health specialist.

_____
Signature

Certificate or License #_____

Address_____

City_____ St._____ Zip_____

Phone _____

Sum of Percolation Rates = ☐

Avg. of Percolation Rates* = ☐
(sum of rates ÷ number of tests)
(minutes per inch)

* If rates vary by more than 20 min/in., do not average. Use slowest rate measured for sizing soil absorption area.

NEBRASKA
Good Life. Great Resources.
DEPT. OF ENVIRONMENT AND ENERGY

Onsite Wastewater Treatment Program
Application for Onsite Wastewater Subdivision Review and Approval

Print or Type

Owner/Authorized Representative First Name Initial Last Name

Owner Business or Legal Entity Name (if applicable)

Owner Address City State Zip

Phone Number Email

☐ Check here if authorized representative and include a description of the representative's authority to sign on behalf of the owner.

Professional Engineer, Certified Professional, or Registered Environmental Health Specialist
Print or Type

First Name Initial Last Name Certification/License Number

Company Name

Mailing Address City State Zip

Phone Number Email

Planned Development Area *Legal description* OR *Geographical coordinates to 4 decimal points*

___ ___ _____ _____ _____ _____ / _____ _____
¼ ¼ Section Township Range County Latitude Longitude

Physical address of system if different than owner's mailing address

Subdivision name

Lot numbers Total number of subject lots

☐ Lots are < 1¼ Acre ☐ Lots are > 1¼ but < 1¾ Acres ☐ Lots are > 1¾ Acres but < 3 acres

I swear or affirm that the application information and documentation submitted are true, complete and accurate.

Owner/Authorized Representative Signature Date

NOTICE: Failure to complete the form or include the appropriate fee(s) will delay the application. NDEE approval is required prior to any construction in the development area.

Reference Sheet

Gravelless Chambers:

This guidance is to clarify the NDEE's accepted method for determining the "inside bottom width" of gravelless chambers, calculating the "effective width" of various makes and models of chambers, and calculating the soil absorption area based on the effective width.

1. The determination of inside bottom width and effective width for gravelless chambers is used when filter material (crushed rock, gravel, tire chips, etc.) **IS NOT USED** for backfill around the chambers, and the chambers are backfilled with the native soil material from the trench area.
2. When filter material **IS NOT USED** in the trench, the "effective width" of the chambers is equal to the actual "inside bottom width" of the chambers multiplied by 1.5.
3. Calculation of the soil absorption area is then determined by multiplying the "effective width" of the trench by the total length of all trenches. For example:

Inside Bottom Width of Chamber	Multiply By 1.5	Effective Width of Chamber	Number Of Trenches	Length Of Each Trench	Total Trench Length	Soil Absorption Area
29 inches or (2.42')	X 1.5 =	43.5 inches or (3.625')	3	60'	(3 x 60) 180'	3.625 x 180 = 652.5 square feet

4. The soil absorption area calculated above must be at least as large as the required soil absorption area, as determined in Title 124. The required soil absorption area is based on the design flow (gallons per day) and the soil percolation rate (minutes per inch).
5. When filter material is used in the trench backfill, the actual trench width is used to calculate the soil absorption area.

In order to standardize gravelless chamber measurements and avoid confusion on field measurements, the NDEE Onsite Wastewater Unit has conferred with the manufacturer's representatives on a list of standard gravelless chamber width dimensions. ***These dimensions are to be used for the Inside Bottom Width of each make and model of chamber listed below.*** For any chambers not listed, please contact the NDEE Onsite Wastewater Unit.

Gravelless Chamber Make / Model	Inside Bottom Width *Inches (Feet)*	Effective Width *Inches (Feet)*
Infiltrator Quick4 Standard	27" (2.25')	40.5" (3.375')
Quick4 High Capacity	29" (2.42')	43.5" (3.625')
Quick4 Equalizer 36	19" (1.58')	28.5" (2.375')
Quick4 Equalizer 24 HD	13" (1.08')	19.5" (1.625')
Quick4 Equalizer 24 Low Profile	12" (1.00')	18" (1.50')
Infiltrator Quick4 Plus (Std.,HC, & LP)	29" (2.42')	43.5' (3.625')
Quick4 Plus Equalizer 36 LP	19" (1.58')	28.5" (2.375')
Infiltrator High Capacity H-20	29" (2.42')	43.5' (3.625')
ADS Arc 18	13" (1.08')	19.5" (1.625')
Arc 24	19" (1.58')	28.5" (2.375')
Arc 36 (Std., HC & LP)	29" (2.42')	43.5' (3.625')
BioDiffuser 11" Standard	27" (2.25')	40.5" (3.375')
BioDiffuser 14" HC & 16" HC	29" (2.42')	43.5' (3.625')
Bio 2	12" (1.00')	18" (1.50')
Bio 3	19" (1.58')	28.5" (2.375')
Infiltrator Bundled Expanded Polystyrene **EZ Flow**	36" (3')	54" 4.5'
Prinsco Pro4/35	30" (2.5)	45" (3.75)

If the inside bottom width of the chambers is 29 inches X 1.5 (credit for using chambers without filter material) = 43.5 inches, divide by 12 to get feet = 3.625 feet. 100 (total trench length installed) X 3.625 = 362.5 total effective trench bottom area.

Soil Absorption System Requirement, square feet
(Ref. Title 124 Septic Tank and Subsurface Leach Field General Permit Table 5)

Percolation Rate, mpi	200 gpd	300 gpd	400 gpd	500 gpd	600 gpd	700 gpd	800 gpd	900 gpd	1,000 gpd
< 5	Design for a 12 inch loamy sand liner with a percolation rate of 15 to 20 minutes per inch and use the >10-20 mpi design below or obtain construction permit.								
5 to 10	165	330	495	660	825	990	1155	1320	1485
>10 to 20	210	420	630	840	1050	1260	1470	1680	1890
>20 to 30	250	500	750	1000	1250	1500	1750	2000	2250
>30 to 40	275	550	825	1100	1375	1650	1925	2200	2475
>40 to 50	330	660	990	1320	1650	1980	2310	2640	2970
>50 to 60	350	700	1050	1400	1750	2100	2450	2800	3150
> 60	Construction permit required when percolation rate is slower than 60 mpi.								

Absorption and Holding Tank Systems *(Ref. Title 124 General Permit Traditional Septic)*

Table 1 – Design Flow for Single Family Dwelling

Number of Bedrooms*	1	2	3	4	5	6	7	8	9
Design Flow, Gallons per Day	200	300	400	500	600	700	800	900	1,000

Table 2 – Design Flow for Multi-Family Dwelling

Number of Dwelling Units	Total Number of Bedrooms						
	2	3	4	5	6	7	8
	Design flow in Gallons per Day						
2	400	500	600	700	800	900	1,000
3	500	600	700	800	900	1,000	**
4	600	700	800	900	1,000	**	**
5	700	800	900	1,000	**	**	**

Table 3 - Minimum Septic Tank Capacity for a Dwelling *

Design Flow in Gallons per Day	Septic Tank Capacity in Gallons		
	For Dwelling without a Garbage Grinder or a Large Capacity Tub	Dwelling with a Garbage Grinder or a Large Capacity Tub	Dwelling with a Garbage Grinder and a Large Capacity Tub
200	1,000	1,000	1,000
300	1,000	1,000	1,250
400	1,000	1,250	1,500
500	1,250	1,500	1,750
600	1,500	1,750	2,000
700	1,750	2,000	2,250
800	2,000	2,250	2,500
900	2,250	2,500	2,750
1,000	2,500	2,750	3,000

* A “large capacity tub” means any bathtub or similar fixture with a maximum working volume greater than 50 gallons. A “garbage grinder” is typically used or placed in the kitchen sink drain and may also be referred to as a garbage disposal or waste disposal.

Soil Absorption Bed Multiplication Factor
(Ref. Title 124 Septic Tank and Subsurface Leach Field General Permit Table 4)

Wide of Bed, feet	Multiplier
> 3 to 10	1.25
> 10 to 15	1.33
> 15 to 20	1.50
> 20	Unacceptable

The required square footage for a non-dwelling facility shall be determined by use of the appropriate wastewater flow rate in Title 124 Septic Tank and Subsurface Leach Field General Permit Table 5, or by use of the following equation: The daily design flow multiplied by (0.20 multiplied by the square root of the percolation rate)

$$sq.ft. = design.flow(gpd)0.20\sqrt{percolation(\min/in)}$$

Other Useful conversions

231 CU in. = 1 Gallon

One cubic foot of water is equal to 7.48 gallons of water

Septage Land Application
(Ref. Land Application of Sewage Sludge, EPA 831-b-93-002b, December 1994

EPA estimates there are 2.6 pounds of nitrogen available to plants per 1,000 gallons of septage. The equation below is used to calculate the annual application rate for septage:

$$\text{Gallons per acre per year} = \frac{\text{Crop nitrogen requirement}}{0.026}$$

Lagoon, Tank and Soil Absorption System Setbacks (Ref. Title 124, Table 2.1)

	Minimum Setback Distance feet (meters)		
Item	Tanks	Absorption, Infiltrative, and Evaporative Systems	Lagoons
Surface Water	50 ft. (15.2 m)	50 ft. (15.2 m)	50 ft. (15.2 m)
Private Drinking Water Wells	50 ft. (15.2 m)	100 ft. (30.5 m)	100 ft. (30.5 m)
Public Drinking Water Supply Wells:			
Non-Community System*	50 ft. (15.2 m)	100 ft. (30.5 m)	100 ft. (30.5 m)
Community System	500 ft. (152.4 m)	500 ft. (152.4 m)	1000 ft. (304.8 m)
Community System when a septic system or soil absorption system of > 1000 gpd is installed	500 ft. (152.4 m)	1000 ft. (304.8 m)	N/A
Horizontal Closed Loop Geothermal Wells (trenched or dug and above the ground water table)	25 ft. (15.2m)	25 ft. (15.2m)	25 ft. (15.2m)
All Other Water Wells	50 ft. (15.2 m)	100 ft. (30.5 m)	100 ft. (152.4 m)
Water Lines:			
Pressure Main/Service Connection/Suction Lines	10 ft. (3.1 m)	25 ft. (7.6 m)	25 ft. (7.6 m)
Property Lines	5 ft. (1.5 m)	5 ft. (1.5 m)	50 ft. (15.2 m)
Trees	NA	NA	50 ft. (15.2 m)
Parking area, driveway, sidewalk, or other impermeable surface or cover	5 ft. (1.5 m)	5 ft. (1.5 m)	50 ft. (15.2 m)
Foundation:			
Class 1	15 ft. (4.6 m)	30 ft. (9.1 m)	100 ft. (30.5 m)
Class 2	10 ft. (3.1 m)	10 ft. (3.1 m)	100 ft. (30.5 m)
Class 3	7 ft. (2.1 m)	10 ft. (3.1 m)	50 ft. (15.2 m)
Neighbor's Foundation:			
Class 1	25 ft. (7.6 m)	40 ft. (12.2 m)	200 ft. (61.0 m)
Class 2	20 ft. (6.1 m)	30 ft. (9.1 m)	200 ft. (61.0 m)
Class 3	15 ft. (4.6 m)	20 ft. (6.1 m)	100 ft. (30.5 m)
*See NAC Title 179 – Public Water Supply Systems, 7-010, for a complete definition for Non-community systems. It should be noted that some non-community systems may have more stringent setback requirements, per Title 179. * Class 1 means a basement, a non-basement footing, swimming pool, or slab-on-grade living quarters where any portion of the living quarters basement, footing, or slab is lower in elevation than the onsite wastewater treatment system component.			
* Class 2 means a basement, a non-basement footing foundation, trailer house, swimming pool, or slab-on-grade living quarters higher in elevation than the on-site wastewater treatment system. Any other foundation that is not a Class 1 or Class 3 is a Class 2 Foundation			
* Class 3 means slab-on-grade construction that is not used as living quarters.			

Lagoon: *(Reference Title 124 General Permit Lagoon)*

Table 1 – Design Flow for a Lagoon for a Single or Multi-Family Dwelling
(Design flow in Gallons per Day)

Total *** Bedrooms	1	2	3	4	5	6	7	8	9	10	11	12
Lagoon Design Flow	150	225	300	375	450	525	600	675	750	825	900	975

*** For lagoon design when the total number of bedrooms exceeds twelve, design flow exceeds 1,000 gallons per day and a construction permit is required.

The lagoon water surface area at the maximum operating level must be determined by the following water balance equation:

$$\textit{Maximum Water Surface Area} \text{ (in square feet)} = \frac{(flow) \times 976}{((evap. - precip.) \times 1.67) + (OD) + (seepage \times 608)}$$

Where: flow = daily design flow or inflow, gallons per day
evap. = annual lake evaporation for location from Fig. 1
precip. = annual precipitation for location from Fig. 2
OD = difference between maximum and minimum operating depths for the lagoon (typically three feet which is also the maximum allowed)

Figure 1 – Total Lake Evaporation

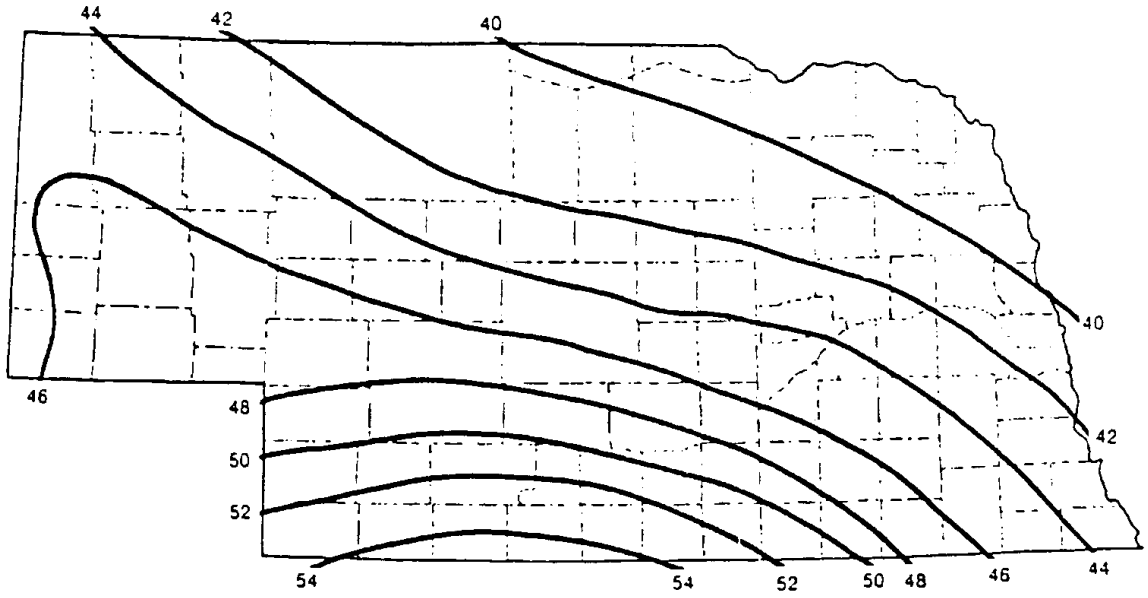


Figure 2 – Precipitation Characteristics