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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Revised or Superseded Construction Permits: none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
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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

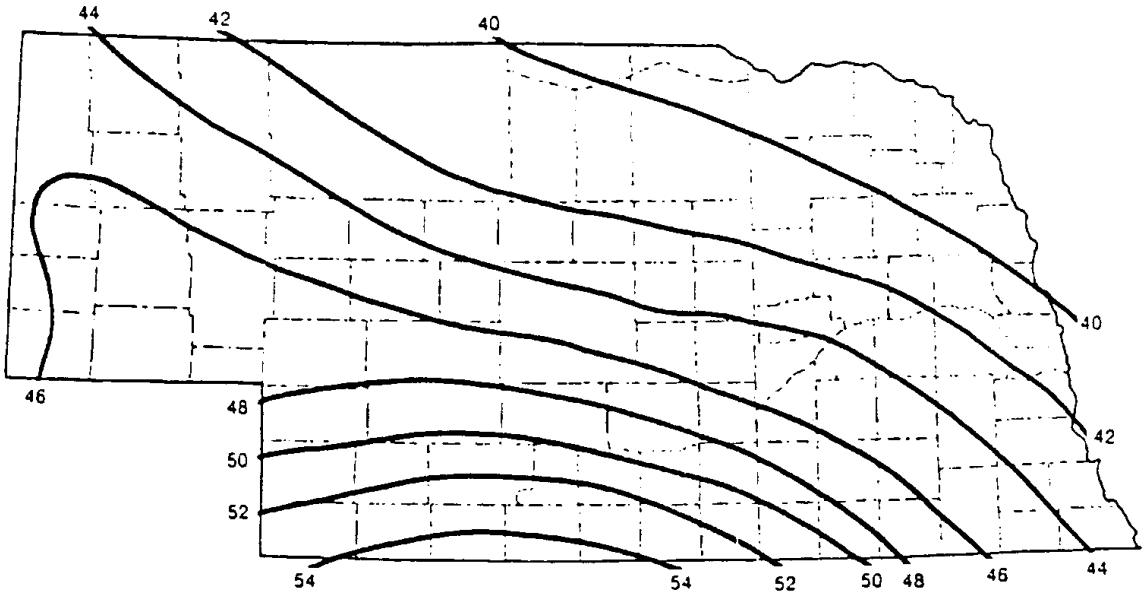
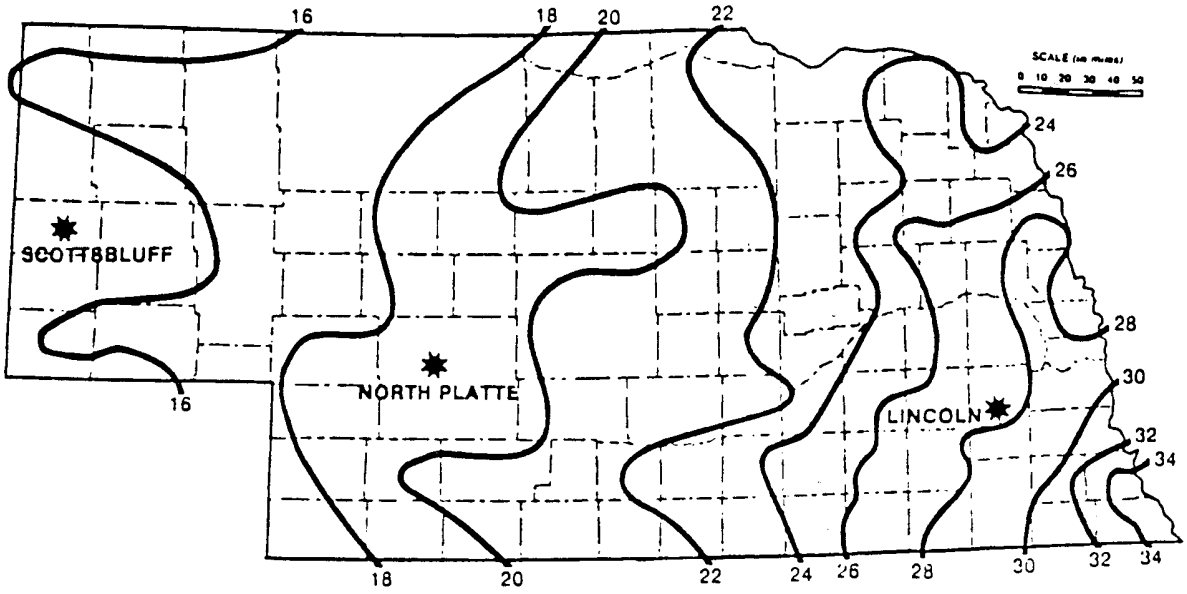


Figure 2 – Precipitation Characteristics



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.