

# **PARK COUNTY**

## **SEWAGE DISPOSAL SYSTEM REGULATIONS**

**Adopted by the Board of County Commissioners**

Park County, Wyoming

November 14, 1995

**CHAPTER 1  
ADMINISTRATION**

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## CHAPTER I

### ADMINISTRATION

**Section 1. Purpose and Intent.** The purpose and intent of these regulations is to preserve the environment and protect the public health, to eliminate and control causes of disease, infection, and aerosol contamination, to regulate wastes, and to reduce and control the pollution of the air, land, and water.

**Section 2. Authority.** These regulations are adopted by the Park County Board of County Commissioners pursuant the provisions of W.S. 35-11-301 (a) and 35-11-304 (a).

**Section 3. Applicability.** These regulations shall apply to any sewage disposal system in Park County, Wyoming intended for domestic sewage originating from residential units serving no more than four (4) families or which generates two thousand (2000) gallons or less of domestic sewage per day.

**Section 4. Approved Sewage Disposal System Required.** The owner of any structure or land where people live, work, or congregate shall insure that the structure or land site contains adequate, convenient, and sanitary toilet and sewage disposal systems approved by the Park County Planning and Zoning Department and in good working order. Under no circumstance shall sewage or effluent be permitted to be discharged upon the surface of the ground, in excavations not specifically approved by the Park County Planning and Zoning Department, or into the waters of the State. The property owner shall be responsible for proper maintenance of the system and for abatement of any nuisance arising from its failure.

**Section 5. Enforcement.** The Board of County Commissioners or their designated representatives are authorized to enter upon private property for the purpose of determining if the sewage disposal systems or facilities thereon are in compliance with the provisions of these regulations. The owner or occupant of every property having a sewage disposal system shall give the above persons free access to the property for such survey or inspection during normal working hours.

**Section 6. Definitions.** This section contains definitions of terms used throughout these regulations. The following rules of construction shall apply to the text of these regulations: (1) All words and phrases shall be construed and understood according to the common and approved usage of the language, but technical words and phrases that may have a peculiar and appropriate meaning in the law shall be construed and understood according to such peculiar and appropriate meaning; (2) The particular shall control the general; (3) In case of any difference of meaning or implication between the text of these standards and regulations and any caption or illustration, the text shall control; (4) The word "shall" is always mandatory and not discretionary. The word "may" is permissive; (5) When not inconsistent with the context, words in the present tense shall include the future and words in the singular number shall include the plural; and (6) The masculine gender shall include the feminine and the feminine shall include the masculine.

Terms used shall be as defined in this section unless the context otherwise requires.

a. Absorption bed: A subsurface absorption area which is wider than three (3) feet, together with a system of perforated distribution pipes in a bed of gravel or series of high density polyethylene chambers, through which effluent may seep or leach into the soil.

b. Absorption system: A system for the treatment of pretreated sewage by means of absorption into the ground.

- c. Absorption trench: One or more trenches not more than three (3) feet in width of varying length and depth utilizing bottom and sidewall absorption.
- d. Aerosol disposal system: A system in which effluent is discharged into the air through aerosol application.
- e. Applicant: The property owner applying for a Permit to Construct a sewage disposal system.
- f. Application: The forms provided by the Park County Planning and Zoning Department to be filled out by the applicant.
- g. Approved: Official Consent given in writing by the Park County Planning and Zoning Department or other agency delegated the authority to grant consent of the sewage disposal system or component thereof.
- h. Board: Board of Park County Commissioners.
- i. Building Drain: The lowest piping of a drainage system which receives the discharge from soil, waste and other drainage pipes inside the walls of the building and conveys it to the building sewer beginning two (2) feet outside the building wall.
- j. Building sewer: The part of the piping of a drainage system which extends from the building to the inlet end of the septic tank or other onsite sewage disposal facility.
- k. Domestic sewage: Liquid and water-borne wastes derived from the ordinary living processes, free from industrial wastes, and of such character as to permit satisfactory disposal without special treatment.
- l. Cesspool: A covered pit into which raw sewage is discharged final disposal by leaching into the surrounding soil.
- m. County: Park County, Wyoming.
- n. Distribution box: A water-tight structure which receives liquid effluent from a septic tank and distributes such effluent in equal portions into two (2) or more pipes leading to the disposal area.
- o. DEQ: Wyoming Department of Environmental Quality
- p. Domestic waste: Materials typically generated by humans inhabiting a dwelling and not through industrial activities.
- q. Dwelling: A place of residence where people eat and sleep.
- r. Effluent: The liquid waste discharges from a primary treatment tank or from a secondary treatment system.
- s. Greywater system: A sewage disposal system designed to accommodate only wastes from sinks, lavatories, tubs, showers, and laundries excluding toilets and garbage disposal units.
- t. Groundwater: Subsurface water that fills available openings in rock or soil materials under hydrostatic pressure.

- u. Mounded Systems: An absorption bed in which the bed is constructed above the natural soil surface in imported fill material.
- v. Percolation test: A subsurface soil test at the depth and in the immediate area of the proposed absorption system to determine the relative water absorption capacity of the soils. The tests must be completed in compliance with the requirements contained in Appendix A.
- w. Permit to Construct: The written permit issued by the Park County Planning and Zoning Department authorizing the applicant to install, construct, operate or modify a sewage disposal system.
- x. Pit Privy: a covered non-watertight pit into which urine and fecal material are discharged.
- y. Park County Planning and Zoning Department: The Planning and Zoning Department for Park County or other departments or individuals authorized by the Board of County Commissioners or the Park County Planning and Zoning Department.
- z. Property owner: The person who is owner of record of the land on which a sewage disposal system is to be or is installed, constructed, altered, or used.
- aa. Pumping Chamber: A tank in which the pumps or siphons are installed.
- ab. Registered professional engineer: An engineer licensed in accordance with Wyoming State Statute.
- ac. Seepage pit: A type of subsurface absorption system designed and constructed on the basis of sidewall area through which effluent is absorbed and treated.
- ad. Septic Tank: A liquid-tight receptacle which receives for storage and digestion, raw sewage from a building sewer, and which has been designed and constructed so as to retain the solids and to allow the liquids to discharge through a secondary system of piping into a disposal area.
- ae. Serial distribution: an arrangement of absorption trenches, beds, or seepage pits where effluent is retained to utilize the capacity of that component before flowing into a succeeding component.
- af. Seasonal high groundwater table: The highest annual elevation reached by the groundwater during the year.
- ag. Sewage Disposal System: A system or facility for disposing of wastes, either by surface or underground methods.
- ah. Slit Trench: A trench in which raw sewage is discharged for final disposal by leaching into the surrounding soil.
- ai. Vault Privy: A covered pit into which urine and fecal material are held for final disposal by hauling to an approved disposal site
- aj. Wastewater Pond: A designed pond which receives raw sewage or effluent for disposal.
- ak. Watertight: The elimination of any possible infiltration of groundwater or surface water and which does not permit the release of sewage or effluent therefrom through other than designed openings.

**Section 7: Application for Permit to Construct.**

- a. No person or persons shall construct, install, alter or repair any sewage disposal system unless such person holds a valid Permit to Construct.
- b. Application for a Permit to Construct shall be made on a form provided by the Park County Planning and Zoning Department prior to construction, repair, alteration, or excavation. The application shall be completed by the applicant in its entirety. Plans stamped by a Wyoming Registered Engineer meeting the specifications of these regulations shall accompany all applications for Permit to Construct for any sewage disposal system serving more than one (1) single family dwelling unit, serving a non-residential structure or use, or treating more than seven hundred fifty (750) gallons of sewage per day. Engineered plans shall not be required for secondary structures associated with a single family residential unit unless the structure serves persons not living within the associated single family residential unit, the use of the structure produces waste types or volumes not typically associated with single family residential use, or the total volume of sewage treated will exceed seven hundred fifty (750) gallons per day.
- c. Applications shall be submitted to the Park County Planning and Zoning Department at least fourteen (14) days before construction is planned.
- d. The application shall be submitted to the Park County Planning and Zoning Department with a non-refundable application fee established by resolution of the Board of County Commissioners.

**Section 8. Application Review and Issuance or Denial of a Permit to Construct.**

- a. Determination of Compliance: A determination shall be made by the Park County Planning and Zoning Department after review of the application, whether the proposed system is in compliance with the provisions of these and all other county regulations. If the proposed system is determined not to be in substantial compliance with the provisions of these and all other county regulations, the Permit to Construct shall be denied.
- b. Notice of Denial: Written notice of the denial of a Permit to Construct shall be sent to the applicant. The notice shall include the basis for the denial.

**Section 9. Appeals.**

- a. Responsibility for hearings on appeals: The Board of County Commissioners shall have the authority to hear appeals of staff decisions concerning the issuance or denial of Permit to Construct.
- b. Filing of appeals: Appeals must be filed with the Park County Planning and Zoning Department within seven (7) days from the date action is taken. Appeals must be accompanied by a written statement of the reasons for the appeal. Appeals may be filed by any person aggrieved by the staff's decision.
- c. Scheduling of hearings on appeals: Appeals shall be heard at the next regular meeting of the Board of County Commissioners which occurs at least fourteen (14) days following the close of the appeal period, or at a special meeting called for that purpose.
- d. Notice of Hearings on appeals:
  - (1) Distribution of Notices: Notices of hearings on appeals shall be sent to the appellant, and where the appeal concerns a Permit to Construct and the applicant is not the appellant, a notice shall be sent to the applicant for the Permit to Construct. All notices shall be sent at least seven days (7) in advance of the hearing.

- (2) Content of Notices: Notices of hearing on appeals shall include a brief description of items appealed, an abbreviated legal description, appellant's name, the hearing date, time, and place, and how additional information can be obtained.

e. Decisions on appeals:

- (1) General: The Board of County Commissioners shall take action by resolution, with appropriate findings, to uphold or overturn the staff's decision concerning a Permit to Construct.
- (2) Scope of Review: When staff decisions are appealed, the Board of County Commissioners retains the authority to reopen consideration of the request, to establish conditions of approval, and to take action on the request. The Board of County Commissioners' review and action shall be in accordance with the procedures established in these standards and regulations for the type of application being appealed.

**Section 10. Inspections.**

- a. Inspections Procedures: An inspection of each sewage disposal system installation, repair, or alteration is required. The applicant must schedule an inspection of the sewage disposal system with the Park County Planning and Zoning Department at least twenty-four (24) hours in advance. No portion of the sewage disposal system shall be covered prior to inspection by the Park County Planning and Zoning Department or prior to authorization by the Park County Planning and Zoning Department to cover the facility. No inspections will be completed on Saturdays, Sundays, or Holidays, and no inspections will be scheduled before 8:00 a.m. or after 5:00 p.m.
- b. Approval or Denial of Sewage Disposal System Installation: The Park County Planning and Zoning Department shall approve covering the system if the system is installed in accordance with the provisions of these regulations and the Permit to Construct. If the inspection discloses any departure from the design upon which the Permit to Construct was issued or if any aspect of the system fails to comply with the provisions of these regulations approval to cover shall be withheld. The applicant shall make such changes as are necessary to bring the system into compliance. In all cases where approval to cover is withheld, a reinspection shall be required prior to covering any portion of the sewage disposal system.
- c. Reinspection fees: A reinspection fee established by resolution of the Board of County Commissioners shall be assessed for each inspection or reinspection when a portion of the work for which an inspection was called for is not complete or when corrections called for are not made.

**Section 11. Duration and Termination of Permit to Construct.**

The Permit to Construct shall remain valid for one (1) year.

**Section 12. Renewal of a Permit to Construct.**

A Permit to Construct may be renewed providing no modifications to the sewage disposal system application are required if a written request is received from the applicant at least thirty (30) days prior to the expiration date. A nonrefundable reissue fee as established by resolution of the Board of County Commissioners will be assessed prior to reissuing the Permit to Construct.

**Section 13. Transferal of Permit to Construct.**

Permits to Construct are automatically transferable to any new property owner at the written request of the new property owner.

**Section 14. Wyoming Environmental Quality Act.**

Park County hereby adopts as minimum standards and procedures the provisions of the Wyoming Environmental Quality Act, Chapter 11, Articles 1, 6, 8, 9, and 10. In the case of a conflict between any of the provisions of these regulations and Chapter 11 of the Wyoming Environmental Quality Act, the most restrictive provision shall govern.

**Section 15. Severability.**

If any section, clause, provision, or portion of these regulations should be found unconstitutional or otherwise invalid by a court of competent jurisdiction, the remainder of these regulations shall not be affected, and if such findings are applied to a particular property, building, or structure, it shall not apply to other properties, buildings or structures.

**Section 16. Interpretation.**

Nothing herein shall be construed as creating any rights or protection for any third party. The requirements of these regulations are intended to protect and benefit the Park County government only, and not any third party beneficiary.

**Section 17. Penalties.**

Any person, firm or corporation violating the provisions of these regulations shall be deemed guilty of a misdemeanor. Each and every day or portion thereof during which any violation of any of the provisions of the regulations is committed or continued shall be considered a separate offense. Upon conviction of any such violation, such a person may be punished as provided by law with a fine of up to one hundred dollars (\$100.00) and/or one (1) day in jail per day of violation.

**Section 18. General Prohibitions.**

No person shall: (1) Construct, install, or modify any sewage disposal system except when authorized by a Permit to Construct; (2) Construct, install, or modify any sewage disposal system in non-compliance with the terms and conditions of a Permit to Construct; (3) Construct, install, or modify a sewage disposal system with a Permit to Construct that has expired or has been suspended or revoked; (4) Discharge wastes into any sewage disposal system which is inconsistent with the type and /or quality of wastes for which the facility is designed; or (5) Construct or use cesspools, pit privies, slit trenches, or aerosol disposal systems.

**Section 19. Sewage Disposal Systems Not Specifically Included in these Regulations.**

The construction of innovative sewage disposal systems not specifically in compliance with these regulations will be permitted provided that the system, when constructed, can operate meeting the purpose and intent of these regulations. Each application for a Permit to Construct an innovative sewage disposal system shall be evaluated jointly by the Park County Planning and Zoning Department and the Department of Environmental Quality, Water Quality Division. The following information shall be included with the application: (1) Data obtained from a full scale, comparable installation which demonstrates the acceptability of the design; and /or (2) Data obtained from a pilot plant operated under the design condition for a sufficient length of time to demonstrate the acceptability of the design; and /or (3) Data obtained from a theoretical evaluation of the design which demonstrates a reasonable probability of the facility meeting the design objectives. In all cases, a standard sewage disposal system design shall be submitted, and shall be constructed in the event the innovative sewage disposal system fails to function as planned.

**CHAPTER II**  
**MINIMUM DESIGN STANDARD FOR SEWAGE DISPOSAL SYSTEMS**

**Section 1. General Sewage Disposal System Design Requirements.**

All Sewage disposal systems shall be designed to accommodate the design flows and separation requirements specified in Table 1 and Table 2.

**TABLE 1**  
**DESIGN FLOWS**

<b>Type of Establishment</b>	<b>Domestic Sewage Flow (gallons per day)</b>
Single Family Dwelling	150 per bedroom
Multiple Family Dwelling with laundry	150 per bedroom
Multiple Family Dwelling without laundry	120 per bedroom
Cabin without cooking facilities	50 per cabin
Mobile Home Parks	350 per home
Airport	4 per passenger
Bar	3 per patron
Bathroom or swimming pool	10 per person
Campground with sewer outlets	100 per site
Campground without sewer outlets	75 per site
Car wash	200 per vehicle
Church without food preparation facilities	5 per seat
Church with food preparation facilities	7 per seat
Country Club	100 per member
Factories	30 per employee
Hospital	200 per bed
Laundry	600 per machine
Motels	80 per double bed or 40 per single bed
Office building	30 per employee
Restaurant	13 per meal
Restaurant with bar or lounge	15 per meal
Restaurant with disposable service	2 per meal
Rest home	100 per resident
School, Boarding	100 per resident
School without gym, cafeteria or shower	15 per student
School with cafeteria, no gym or shower	20 per student
School with cafeteria, shower, and gym	25 per student
Service Station	10 per vehicle serviced
Shopping Center	2 per parking space
Store	30 per employee
Theater, Indoor	5 per seat
Theater, Drive-In	15 per vehicle space
Warehouse	30 per employee

**Section 2. Sewage Disposal System Component Design Criteria and Installation.**

- a. Building Sewer Pipes:

- (1) Material: Schedule 40 Polyvinyl Chloride (PVC) pipe or better shall be used for building sewer pipes.

**TABLE 2  
SEPARATION REQUIREMENTS**

	Septic Tank or Equivalent (feet)	Absorption System Or Equivalent (feet)
Wells	50	100
Property Lines	10	10
Building Foundations without foundation drains	5	10
Building Foundations with foundation drains	5	25
Potable Water Lines	25	25
Septic Tank	N/A	10
Stream or Surface Water Body including intermittent water and irrigation canals and laterals	50	50

- (2) Size: Building sewer pipes shall be sized to handle the peak hourly flow from the building, but in no case shall building sewer pipe be less than four (4) inches in diameter.
- (3) Slope: Building sewer pipes shall be laid at a minimum slope of one-quarter (1/4) inch per foot unless otherwise approved
- (4) Cleanouts: Cleanouts shall be provided every one hundred (100) feet maximum and at any single or cumulative change in building sewer alignment of twenty-two and one-half (22 ½) degrees or greater.
- (5) Backfilling: All building sewer pipes shall be laid on a firm bed throughout its entire length. The backfill material shall be compacted to a density at least equivalent to the trench walls. Backfill over the pipe shall be of sufficient depth to protect the pipe from expected traffic loads and the wastewater from freezing.

b. Septic Tanks:

- (1) Design: Septic tanks shall be water-tight and be of a design approved by the Wyoming Department of Environmental Quality.
- (2) Size: The minimum liquid volume of septic tanks shall be one thousand (1000) gallons or two hundred fifty (250) gallons per bedroom whichever is greater. For non-residential uses, the tank shall be sized to ensure a minimum sewage retention time of thirty-six (36) hours
- (3) Installation: Septic tanks shall be placed on a level grade and a firm bedding to prevent settling.

c. Aerobic Units: Aerobic treatment units shall carry the seal of testing and approval from the National Sanitation Foundation (NSF) for the NSF Standard No. 40-1978. The unit shall be sized to accommodate the maximum daily flow.

d. Pumping Chambers: The pumping chamber shall be water-tight and be of a design approved by the Wyoming Department of Environmental Quality. The pump tank shall be vented. The vent shall have a downward turn that terminates at least twelve (12) inches above ground and be provided with a screen. The pump tank shall be sized as shown in Table 3.

- e. Pumps:
- (1) Sizing: Pumps shall have a flow rate of at least ten (10) gallons per minute when installed.
  - (2) Installation/removal: The pump shall be installed in the pumping chamber so that it can be removed without entering the pumping chamber. Chains, cable, or piping can be used to lift the pump out of the tank if designed for this loading. Pumps shall be set on a minimum eight (8) inch block to minimize the transfer of any solids that may enter the pump tank.
  - (3) Electrical controls: The electrical control system for the pump shall consist of a pump off switch and a high water alarm switch. The pump off switch shall be set to provide a consistent dose approximately four (4) times per day. The high water alarm switch shall be set at eighty five percent (85%) of the pumping chamber's capacity. All electrical controls (pump electrical cord, switches, etc.) shall comply with the State of Wyoming adopted electrical code. All openings around the cables or cords entering the tank shall be sealed. All electrical controls shall be mounted outside the pumping chamber or in an approved watertight box. The high water alarm switch shall consist of a buzzer, bell, or light located in the structure and shall be on a separate circuit form the pump.

**TABLE 3  
PUMPING CHAMBER CAPACITY REQUIREMENTS**

Average Daily Flow Rate (gallons)	Minimum Pumping Chamber Size (gallons)
≤150	250
151-300	375
301-450	575
451-600	750
601-750	950
751-900	1125
≥901	2250

- (4) Pressure transfer pipe: The pressure transfer pipe shall be designed to drain after each pump cycle to prevent freezing. If the pipe is long, the tank shall be enlarged by the volume of the pipe to accommodate the volume of liquid drained from the pipe. Pressure transfer pipes shall be of sufficient strength to accommodate pump discharge pressure, but in no case shall the pipe be less than Schedule 40 PVC or polyethylene meeting AWWA C901.
- f. Siphons: Where automatic siphons are used, they shall be designed to empty the siphon chamber in less than twenty (20) minutes and shall meet the minimum pumping chamber and pressure transfer pipe specifications for the same sewage disposal system.

**Section 3. Absorption Systems.**

All sewage disposal systems utilizing subsurface disposal shall meet the minimum design and construction requirements contained in this section.

- a. Site Suitability for Absorption Systems:

- (1) Soils shall be evaluated at the depth of the proposed absorption system to provide information on subsoil conditions. No less than three (3) percolation tests shall be run in the proposed absorption system location or an evaluation of the soil texture by a Wyoming Registered Professional Engineer experienced in soils classification may be used to estimate the percolation rate in which case at least one (1) percolation test shall be performed. The percolation tests shall be performed in accordance with Appendix A of these regulations.
  - (2) The depth to bedrock or impermeable soil or strata must be at least four (4) feet from the bottom of the absorption system stone and the natural ground surface. The depth to seasonally high groundwater must be at least four (4) feet from the bottom of the absorption system stone and at least two (2) feet from the natural ground surface. A minimum of three (3) feet of unsaturated soil shall be maintained between the bottom of the absorption system stone and the estimated groundwater mound imposed on the seasonally high groundwater table. For absorption systems treating less than seven hundred fifty (750) gallons of sewage per day, the height of the groundwater mound shall be one (1) foot. In all other cases, the engineer designing the system shall estimate the actual height of the groundwater mound.
  - (3) Soils with a percolation rate of sixty (60) minutes per inch or greater, or one (1) minute per inch or less are unacceptable for standard absorption systems. Plans and specification for the absorption system stamped by a Wyoming Registered Engineer shall be required. The engineered plan and specification shall meet all other minimum requirements of these regulations and shall ensure that the Purpose and Intent of these regulations is achieved.
- b. Sloping ground installations absorption systems: Table 4 Lists the maximum slopes on which an absorption system may be constructed. All absorption systems must be located at least fifteen (15) feet from the top of the any break in slope which exceeds the maximum sloop permitted by Table 4.

**TABLE 4  
MAXIMUM SLOPES FOR ABSORPTION SYSTEMS**

Percolation Rate (minutes/inch)	Maximum Slope (%)
≤5	25
6-45	20
4-60	15

c. Sizing Absorption Systems:

- (1) Absorption Trenches: The minimum Trench Length required shall be determined by the following formula:

$$T = \frac{Q}{Lx(2d + w)}$$

L = Loading Rate from Table 5

Q = Average Daily Flow (Gallons)

d = Depth of Gravel Under the Distribution Pipe (feet)

w = Width of Trench (feet)

T = Trench Length Required (feet)

- (2) Absorption Bed: The minimum absorption bed area required shall be determined by the following formula:

$$A = \frac{Q}{L}$$

L = Loading Rate from Table 5  
 Q = Average Daily Flow (gallons)  
 A = Area of Absorption Bed (square feet)

- (3) Absorption Pit: The minimum absorption pit depth shall be determined by the following formula.

$$d = \left( \frac{Q}{2L\pi r} \right) - \frac{r}{2}$$

L = Loading Rate from Table 5  
 Q = Average Daily Flow (gallons)  
 d = Depth of Absorption Pit Under Inlet Pipe (feet)  
 r = Radius of Absorption Pit Including Gravel (feet)

d. General Requirements:

- (1) Replacement area: An area shall be designed and shown on the plans for future installation of a replacement absorption system. If a trench system is used, the replacement area may include the area between the trenches if sufficient spacing has been provided. At least three (3) feet of undisturbed soil shall remain between the existing and replacement trench sidewalls.

**TABLE 5  
 SOIL LOADING RATES**

Percolation Rate (minutes per inch)	Soil Texture	Maximum Loading Rate (gallons/square foot/day)
1-5	Sand	.80
6-10	Sand w/Silt	.62
11-20	Sandy Loam	.46
21-30	Loam	.37
31-60	Silty or Clay Loam	.30

- (2) Runoff: Surface water shall be diverted around or away from all soil absorption systems
- (3) Stone: Absorption system stone shall be sized between one-half (½) inch and two and one-half (2 ½) inches. At least two (2) inches of stone shall be placed over the distribution pipe, and at least six (6) inches of stone shall be placed under and on both sides of the distribution piping. The stone shall be free from sand, silt, and clay.
- (4) Non-pressurized Distribution Pipe: All non-pressurized distribution pipes shall have minimum diameter of four (4) inches and shall conform to ASTM standard D2729. Non-pressurized distribution pipes shall be level unless a distribution box and absorption trenches are to be utilized, in which case the non-pressurized distribution pipe within each trench shall be level.

- (5) Pressure Pipe: All pressure distribution piping shall be designed to withstand the anticipated pressures with a safety factor of two (2), provide uniform application of the sewage, and have non-clogging orifices.
  - (6) Distribution Box: If a distribution box is used, it shall be installed to provide uniform distribution of sewage.
  - (7) Stone Cover: A suitable cover such as untreated building paper, filter cloth, or two (2) inches of straw shall be placed over the stone prior to backfilling the system.
  - (8) Earth Cover: A minimum of twelve (12) inches of earth cover suitable for vegetation shall be placed from the top of the stone cover to finished grade.
  - (9) Absorption System Levelness and Absorption Surface Condition: The bottom of absorption systems and each individual absorption trench shall be level. Absorption surfaces shall not be smeared or compacted.
- e. Special Requirements for seepage pits: Seepage pits shall be separated by a minimum distance equal to 3 times their diameter.
- f. Special Requirements for mounded systems:
- (1) Grade: The finished grade shall extend at least three (3) feet horizontally beyond the stone and then be sloped to the parent soil at a grade no steeper than four (4) horizontal feet to one (1) vertical foot.
  - (2) Fill soil: The fill soil that is placed between the native soil and the stone shall have a minimum percolation rate of five (5) minutes per inch. Topsoil shall be placed over the mound to promote vegetative cover.
  - (3) Preparation: All trees, roots and other organic matter shall be removed from the area to be occupied by the mound.
- g. Special Requirements for Trench Systems: A minimum separation of three (3) feet or a horizontal distance equal to one and one-quarter (1.25) times the vertical depth of the trenches, whichever is greater, of undisturbed soil shall be maintained between adjacent trench sidewalls.
- h. Special Requirements for Serial Distribution Systems and Absorption Beds:
- (1) Separation: A minimum of three (3) feet of undisturbed soil shall be maintained between adjacent trench or bed sidewalls.
  - (2) Overflow: The overflow pipe between serial distribution trenches shall be set no higher than the mid-point of the upstream distribution pipe. The overflow pipe shall not be perforated.
  - (3) Separation of Distribution Pipe: The distribution pipes in absorption beds shall be spaced no more than ten (10) feet apart.

**Section 4. Evaporation Beds.**

- a. Sizing: The area of evapotranspiration beds shall be determined using the following formula:

$$A = \frac{586xQ}{(PET - P)}$$

A = Area of the evapotranspiration bed at the ground surface (square feet)  
Q = Average Daily Flow (gallons)  
PET = Annual Potential evapotranspiration rate (inches)  
P = Annual precipitation rate (inches)

- b. Construction:

- (1) If an impervious barrier is necessary for the protection of groundwater (e.g. groundwater at less than four (4) feet from the bottom of the bed), it shall be installed between the evapotranspiration bed and the native soil. It shall be a polyvinyl chloride sheet with a minimum thickness of twenty (20) mils or equivalent. A three (3) inch layer of sand shall be placed under and over the liner.
- (2) The bottom twelve (12) inches of the bed shall be filled with clean stone one-half (½) to two and one-half (2½) inches in diameter.
- (3) Distribution pipe shall meet the specifications for absorption systems.
- (4) Four (4) inches of pea gravel (less than ¼ inch in diameter) or durable filter cloth shall be placed over the stone.
- (5) A twenty-four (24) inch uniform sand layer in the size range of D50 (0.10 mm) shall be placed on top of the pea gravel or filter cloth.
- (6) A six (6) inch layer of sandy topsoil shall be placed on top of the evapotranspiration bed.
- (7) The bed shall be vegetated with grasses such as fescue, brome, or alfalfa.
- (8) The evapotranspiration bed shall be placed at a depth sufficient to prevent surcharging of the septic tank.

**Section 5: Holding Tanks**

- a. Uses and Sizing: Holding tanks shall not be used for sewage disposal residential systems when other alternative systems are available, except on a temporary, seasonal or intermittent basis, or when to correct a failed subsurface disposal system when other alternatives are unavailable. Use of holding tanks for new construction is prohibited. Holding shall be sized on the basis of seven (7) days storage at the flow rate determined from Table 1.
- b. Acceptance: A letter of verification from the local receiving agency denoting acceptance of the sewage generated shall be submitted with the plans.
- c. Location: The location and construction of holding tanks shall meet the requirements for septic tanks.
- d. Vent: Each holding tank shall be provided with a two (2) inch diameter vent ending in a return elbow above final grade. The vent shall terminate at least thirty (30) feet from any door, window, or fresh air inlet. The vent shall be screened.

- e. Alarm: All holding tanks shall be equipped with a high water level alarm. The alarm shall meet the specifications for pumping chambers.
- f. Pump out: A six (6) inch pump out pipe which extends to the surface shall be provided. It shall be capped at all times.
- g. Groundwater: The depth to seasonally high groundwater from the bottom of a holding tank shall be sufficient to prevent flotation of the holding tank.

**Section 6: Vault Privies**

- a. All vault privies shall be designed and constructed to prevent access by flies and rodents.
- b. The privy shall consist of a vault and an outhouse building.
- c. Vaults shall have a minimum capacity of five hundred (500) gallons per riser and shall be a minimum of four and one-half (4½) feet deep.
- d. Vaults shall meet the specifications for septic tanks except a clean-out manhole shall be installed and shall have a minimum opening of twenty (20) inches in the least dimension. The manhole shall be located outside of the outhouse building and be equipped with a tight-fitting secure cover. No high water alarm shall be required. The vault shall be ventilated to a point outside and above the outhouse building. The outside building shall have a set of vent near the floor on two (2) opposite sides of the building and a roof vent that has a rain cap. All vents shall be screened.
- e. No chemical or biological additive shall be placed in the vault that may adversely affect the operation of a sewage treatment facility where the vault waste will ultimately be disposed or that may adversely impact the quality of the groundwater.

**Section 7: Chemical Toilets**

- a. General requirements: Chemical toilets shall only be used in the containment of body wastes. These requirements apply only to the use of chemical toilets for permanent structures.
- b. Disposal: All chemical toilet wastes shall be disposed of at an approved facility. A letter of verification from the receiving agency denoting acceptance of the sewage generated shall be submitted with the plans.
- c. Construction: Chemical toilets shall be constructed and installed to resist breakage or damage from routine usage. Outdoor chemical toilets shall be adequately stabilized and secured to prevent overturning. Materials used shall be resistant to the sewage wastes and the chemicals encountered. The holding compartment of the toilet shall be constructed to prevent accessibility to the public and to disease-transmitting vectors.
- d. Additives: No chemical or biological additive shall be placed in the toilet that may adversely affect the operation of a sewage treatment facility where the toilet waste will ultimately be disposed or that may adversely impact the quality of the groundwater.

**Section 8: Wastewater Ponds**

- a. Wastewater ponds shall only be constructed in soils where the percolation rate exceeds sixty (60) minutes per inch and the soils are at least one (1) foot thick on both sides and the bottom of the pond.
- b. Depth to Groundwater: Depth to groundwater shall meet the minimum requirements for absorption systems.

- c. Sizing: The area of the pond shall be calculated based on the following formula:

$$A = \left\{ \frac{584 \times Q}{[(365 \times S) + (E - P)]} \right\} \times 13$$

A = Area of the pond at the 5 foot water level (square feet)

Q = Average daily flow (gallons)

S = Soil permeability (inches per day)

“S” must be less than or equal to 0.25 inches

E = Annual precipitation rate (inches)

- d. A minimum water level of at least two (2) feet shall be maintained in the pond at all times including start-up.
- e. A minimum free board of two (2) feet shall be provided between the lowest embankment berm and the maximum water level. The maximum water level shall not be more than five (5) feet.
- f. Construction requirements:
- (1) The slopes of the inside dikes shall not be steeper than three (3) horizontal to one (1) vertical nor flatter than four (4) horizontal to one vertical. The slopes of the outside dikes shall not be steeper than three (3) horizontal to one (1) vertical and shall not allow service runoff to enter the pond.
  - (2) All organic material and debris shall be removed from the pond site prior to construction.
  - (3) All fill material shall consist of impervious material that is well compacted and free of rocks, frozen soil, or other large material.
  - (4) The minimum top width of the dike shall be eight (8) feet.
  - (5) The pond area shall be enclosed with a six (6) foot high fence which has a maximum opening of six (6) inches. The fence shall be topped with two (2) strands of barbed-wire. An access gate shall be provided for maintenance equipment. The gate shall provide security equivalent to the fence.
  - (6) A minimum of one (1) sign shall be placed on each side of the pond and shall be attached to the fence. The sign shall describe the facility and advise against trespassing.

**APPENDIX A**  
**PERCOLATION TEST PROCEDURE**

1. Location: The percolation test holes shall be spaced uniformly over the proposed absorption field site. A minimum of three (3) holes are required unless otherwise allowed pursuant to these regulations.
2. Preparation: A four (4) inch to twelve (12) inch hole shall be dug or bored to the proposed depth of the absorption field. The walls shall be vertical. To expose a natural soil surface, the sides and bottom shall be scraped with a sharp pointed instrument and the loose material shall be removed from the hole. Coarse sand or gravel shall be removed from the hole. Coarse sand or gravel shall be placed in the bottom of the hole to prevent it from scouring and sealing.
3. Presoaking: The purpose is to have the water conditions in the soil reach a stable condition similar to that which exists during continual effluent application. The minimum time of presoaking varies with soil conditions but must be sufficiently long so that the water seeps away at a constant rate.
4. Percolation rate measurements: The water level should be adjusted back to the fixed reference point after each time interval measurement. In the percolation test holes, establish a fixed reference point and measure the drop in water level at constant time intervals (every 10 or 30 minutes). The water level drop should be measured to the nearest one-eighth (1/8) of an inch. The test may be terminated when the water drop is consistent for three (3) consecutive measurements. The percolation rate for each hole is calculated as follows:

$$\frac{TI}{WLD} = PR$$

TI = Time Interval (minutes)

PR = Percolation Rate ( minutes/inch)

WLD = Final Water Level Drop (inches)

If only three (3) to five (5) percolation tests are performed, the design percolation rate for the absorption system is the slowest rate from all the holes tested. If six (6) or more percolation tests are performed, the design percolation rate for the absorption system is the average of all the holes tested.

5. The depth of the percolation hole will be the same depth as the proposed trench (or other excavation) and the amount of water (number of inches) put into the percolation hole will be equal to the number of inches of gravel that will be under the leach pipe or pit