Guthrie County Board of Health
Regulations

Chapter 1
Private Sewage Disposal Systems

Chapter 137 of the 2007 Code of Iowa specifies in Section 137.7 the following powers of the County Board of Health to include:

1. May provide such personal and environmental health services as may be deemed necessary for the protection and improvement of the public health.
2. May charge reasonable fees for personal health services.
3. May issue licenses and permits and charge reasonable fees therefore in relation to the collection or disposal of solid waste and the construction of private water supplies or sewage disposal facilities.

Under the authority granted by Chapter 137 therefore the following regulations of the Guthrie County Board of Health (the Board) have been promulgated and shall become effective. These regulations shall supersede and replace other regulations of the Guthrie County Board of Health which have been in effect to date.

Section 1 General requirements

1(1) Applications
These rules are applicable only to private sewage disposal systems.

1(2) Definitions
"Approved" means accepted or acceptable under an applicable specification stated or cited in these rules, or accepted as suitable for the proposed use by the Board.
"Area drain" means a drain installed to collect surface or storm water from an open area of a building or property.
"Board" means the Guthrie County Board of Health.
" Building sewer" is that part of the horizontal piping from the building wall to its connection with the main sewer or the primary treatment portion of a private sewage disposal system conveying the drainage of a building site.
"Chamber system" is a buried structure, typically with a domed or arched top, providing at least six-inch height of sidewall soil exposure, creating a covered open space above a buried soil infiltrative surface.
"Conventional" when used in reference to sewage treatment means a soil absorption system involving a series of two or three foot wide trenches filled with gravel one foot deep, containing a four-inch diameter rigid pipe to convey the sewage effluent.
"Distribution box" is a structure designed to accomplish the equal distribution of wastewater to two or more soil absorption trenches.
"Domestic sewage" or "domestic wastewater" means the water carried waste products from residences, public buildings, institutions, or other buildings, including bodily discharges from human beings together with groundwater infiltration and surface water as may be present.
"Drainage ditch" is any watercourse meeting the classification of a 'general use segment' under Rule 567-61.3 (455B) of the Iowa Administrative Code which includes intermittent watercourses and those watercourses which typically flow only for short periods of time following precipitation in the immediate locality and whose channels are normally above the water table.
"Drip irrigation is a form of subsurface soil absorption using shallow pressure distribution with low pressure drip emitters.
"Drop box" is a structure to divert wastewater flow into a soil absorption trench until the trench is filled to a set level, then allow any additional waste, which is not absorbed by that trench, to flow to the next drop box or soil absorption trench.

"Dwelling" means any house or place used or intended to be used by humans as a place of residence.

"Fill soil" means clean soil, free of debris or large organic material, which has been mechanically moved onto a site and has been in place for less than one year.

"Foundation drain" means that portion of a building drainage system provided to drain groundwater from the outside of the foundation or over or under the basement floor not including any wastewater and not connected to the building drain.

"Free access filter (open filter)" means an intermittent sand filter constructed within the natural soil or above the ground surface with access to the distributor pipes and top of the filter media for maintenance and media replacement.

"Gravel" means stone screened from river sand or quarried and washed free of clay and clay coatings. Concrete aggregate designated as Class II by the Dept. of Transportation is acceptable.

"Gravelless pipe system" means a soil absorption system comprised of large diameter (10") corrugated plastic pipe, perforated with holes on a 120-degree arc centered on the bottom, wrapped in a sheath of geotextile filter wrap and installed level in a trench without gravel bedding or cover.

"Grease interceptor" means a watertight device designed to intercept and retain or remove grease and/or fatty substances. The device may be located inside (grease separator) or outside (grease tank or grease trap) of a facility.

"Individual mechanical aerobic wastewater treatment system" means an individual wastewater treatment and disposal system employing bacterial action which is maintained by the utilization of air or oxygen and includes the aeration plant and equipment and the method of final effluent disposal.

"Intermittent sand filters" are beds of granular materials 24-36" deep underlain by graded gravel and collecting tile. Wastewater is applied intermittently to the surface of the bed through distribution pipes and the bed is underdrained to collect and discharge the final effluent. Uniform distribution is normally obtained by dosing so as to utilize the entire surface of the bed. Filters may be designed to provide free access (open filters) or may be buried in the ground (buried filters or subsurface sand filters).

"Lake" means a natural or man-made impoundment of water with more than one acre of water surface area at the high water level.

"Limiting layer" means bedrock, seasonally high groundwater level, or any layer of soil with a stabilized percolation rate exceeding 60 minutes for the water to fall one inch.

"Mound system" is an above ground soil absorption system used to disperse effluent from septic tanks in cases where seasonally high water table, high bedrock conditions, slowly permeable soils or limited land areas prevent conventional subsurface soil absorption systems.

"Packed Bed Media Filter" means a watertight structure filled with uniformly sized media that is normally placed over an under drain system. The wastewater is dosed onto the surface of the media through a distribution network and is allowed to percolate through the media to the under drain system. The under drain collects the filtrate and discharges the final effluent.

"Percolation test" is a falling water level procedure used to determine the ability of soils to absorb primary treated wastewater. (See Appendix B)

"Pond" means a natural or man-made impoundment of water surface area of one acre or less at high water level.

"Pretreated effluent" is a septic tank effluent treated through aeration or other methods that, upon laboratory analysis, meets or exceeds a monthly average for biochemical oxygen demand (BOD) of 30 mg/L and total suspended solids (TSS) of 30 mg/L.

"Primary treatment" is a unit or system to separate the floating and settleable solids from the wastewater before the partially treated effluent is discharged for secondary treatment.

"Private sewage disposal system"" means a system which provides for the treatment or disposal of domestic sewage from four or fewer dwelling units or the equivalent of less than sixteen individuals on a continuing basis. This includes domestic waste whether residential or nonresidential but does not include industrial waste of any flow rate.

"Professional soil analysis" is an alternative to the percolation test which depends upon a knowledgeable person evaluating the soil characteristics, such as color, texture, and structure, in order to determine an equivalent percolation rate. Demonstrated training and experience in soil morphology such as testing absorption qualities of soil by the physical examination of the soil's color, mottling, texture, structure, topography and hill slope position shall be required to perform a professional soil analysis.

"Qualified sampler" for the purposes of collecting compliance effluent samples required under NPDES General Permit No. 4, means one of the following persons: a city or county environmental health staff

person, an Iowa-certified wastewater treatment operator, or an individual who has received training approved by the Department of Natural Resources to conduct effluent sampling.

"Roof drain" is a drain installed to receive water collecting on the surface of a roof and discharging into an area or storm drain system.

"Secondary treatment system" is a system which provides biological treatment of the effluent from septic tanks or other primary treatment units to meet minimum effluent standards as required in these rules and NPDES General Permit No. 4. Examples include soil absorption systems, media filters, aerobic treatment units, or other systems providing equivalent treatment.

"Septage" means the liquid and solid material pumped from a septic tank, cesspool, or similar domestic sewage treatment system, or from a holding tank, when the system is cleaned or maintained.

"Septic tank" is a watertight structure into which wastewater is discharged for solids separation and digestion, referred to as part of the closed portion of the treatment system.

"Sewage sludge" means any solid, semisolid, or liquid residue removed during the treatment of municipal waste water or domestic sewage. "Sewage sludge" includes, but is not limited to; solids removed during primary, secondary, or advanced waste water treatment, scum septage, portable toilet pumping, type III marine device pumping as defined in 33 C.F.R. part 159, and sewage sludge products. "Sewage sludge" does not include grit, screenings, or ash generated during the incineration of sewage sludge.

"Stream" means any watercourse listed as being a 'designated use segment' in rule 567-61.3 (455B) of the Iowa Administrative Code which includes any watercourse which maintains flow throughout the year, or contains sufficient pooled areas during intermittent flow periods to maintain a viable aquatic community.

"Subsurface soil absorption system" is a system of perforated conduits connected to a distribution system, forming a series of subsurface, water-carrying channels into which the primary treated effluent is discharged for direct absorption into the soil (referred to as part of the open portion of the treatment system).

"Subsurface sand filter" is a system in which the effluent from the primary treatment unit is discharged into perforated pipes, filtered through a layer of sand, and collected by lower perforated pipes for discharge to the surface or to a subsurface absorption system. A subsurface sand filter is an intermittent sand filter which is placed within the ground and provided with a natural topsoil cover over the crown of the distribution pipes.

1(3) General regulations

a. Connections to approved sewer system

(1) No private sewage disposal system shall be installed, repaired, or rehabilitated where a publicly owned treatment works (POTW) is available or where a local ordinance requires connection to a POTW. The POTW may be considered as not available when such POTW or any building or any exterior drainage facility connected thereto, is located more than 200' from any proposed building or exterior drainage facility on any lot or premises which abuts and is served by such POTW. Final determination of availability shall be made by the Board.

(2) When a POTW becomes available within 200', any building then served by a private sewage disposal system shall connect to said POTW within a time frame or under conditions set by the Board.

(3) When a POTW is not available, every building wherein persons reside, congregate, or are employed shall be provided with a private sewage disposal system.

(4) If a building is to be connected to an existing private sewage disposal system, that existing system shall meet the standards of these regulations and be appropriately sized.

b. Discharge restrictions

It is prohibited to discharge any wastewater from private sewage disposal systems (except as permitted in this Chapter) to any ditch, stream, pond, lake, natural or artificial waterway, county drain tile, surface water drain tile, land drain tile, to the ground water, or to the surface of the ground. Under no conditions shall effluent from private sewage disposal systems be discharged to any abandoned well, agricultural drainage well, or sinkhole. Existing discharges to any of the above-listed locations or structures shall be eliminated by constructing a system which is in compliance with the requirements of these regulations.

c. Construction or alteration

(1)All private sewage disposal systems constructed or altered after the effective date of these regulations shall comply with these requirements. Alterations include any changes that affect the treatment or disposal of the waste. Repair of existing components that does not change the treatment or disposal would be exempt. However, the discharge restrictions in **(b)** above would always apply.

(2) Private sewage disposal systems that are abandoned shall have the septic tank pumped, the tank lid shall be crushed into the tank, and the tank shall be filled with sand or soil. As an alternative, the tank may be removed.

d. Time of sale requirement for cities

The Dept. of Natural Resources has developed a prioritization schedule to require proper sewage disposal within any incorporated community with improper private sewage disposal systems. These regulations apply to all incorporated cities within Guthrie County.

(1) At the time of sale of any dwelling or business, except abandoned structures, within city limits there shall be an inspection completed by this Dept. of any private sewage disposal system serving the structure. Any structure having a valid permit for the private sewage disposal system from this Dept., and is regularly inspected under a management program is, is exempt. Dwellings and businesses served by a municipal sewer system, or any uninhabited building lacking any current sewer or water service, are exempt.

(2) Such inspection shall follow the guidelines and policies as adopted by the Board.

(3) Any property with a system that does not substantially comply with the current regulations of the Board shall be required to have the system repaired or replaced to bring the system into substantial compliance with the current regulations.

(4) The seller or seller's agent is responsible for contacting this Dept. prior to the sale of the property to request this inspection.

(5) Properties that are only transferred without an exchange of cash or other considerations shall not be subject to these regulations.

(6) Any sale discovered after the transaction has occurred shall result in the new owner being responsible for the inspection and any necessary repairs to, or replacement of, the private sewage disposal system.

(7) The Board shall establish a fee for the required inspection.

(8) After July 1, 2009 with the implementation of the March, 2009 revision of Chapter 69 of the Iowa Administrative Code 567 (455B) this section **1.3(d)** shall be superseded by Chapter 69.2 of the Iowa Administrative Code 567 (455B) which is herein adopted by reference as of July 1, 2009.

1(4) Construction permit requirements

No private sewage disposal system shall be installed or altered as described in **1(3)c** without obtaining a construction permit issued by the Board. The installation shall be in accordance with the regulations. Either the owner or installer may be cited for violation of these regulations. This Chapter is intended to act as a permit by rule for the private sewage disposal system. Activities in compliance with the Chapter are permitted for the purposes of compliance with sections 455B.183 and 455B.180 of the Code of Iowa.

a. The Board shall establish a fee for the permit.

b. Permits shall be valid for 12 months from the date of issuance.

c. Department personnel shall be notified of the request for inspection of the completed on-site system 24 hours in advance and between 8:00 am and 4:30 pm, Monday through Friday.

d. No part of any private sewage disposal system shall be used, covered, or so constructed as to deny the mandatory final inspection by Department personnel. A final as-built drawing shall be made as part of the final inspection. All pertinent information, including but not limited to; private sewage disposal system location address, owner, type of system, date of installation and the as-built drawing, shall be entered into the Department of Natural Resources' web-based Onsite Wastewater Tracking System.

e. All proposed plats and subdivisions after the effective date of these regulations shall have the approval of the Board with a copy thereof provided to the Board.

f. The plator or developer must provide engineering data to confirm the suitability of the soil to adequately treat the sewage if a public sewer is not available to serve the plat or subdivision.

g. The Board shall not issue a permit that will allow a private sewage disposal system to be installed on a structure that would not conform to the zoning regulations of the developer which are recorded in the Guthrie County Recorder's Office.

h. Sewer projects of plators and developers shall conform to all permits and regulations of the Dept. of Natural Resources and other applicable State departments.

1(5) Site analysis

a. Site evaluation

A site evaluation shall be conducted prior to issuance of a construction permit. Consideration shall be given, but not limited to, the impact of the following: topography; drainage ways; terraces; floodplain; percent of land slope; location of property lines; location of easements; buried utilities; existing and proposed tile lines; existing, proposed, and abandoned water wells; amount of available area for the installation of a system; evidence of unstable ground; alteration (cutting, filling, compacting) of existing soil profile; and soil characteristics determined from a soil analysis, percolation tests and soil survey maps, if available.

b. Soil survey reports

During a site analysis and investigation, maximum use should be made of soil survey reports which are available from USDA Natural Resources Conservation Service. A general identification of the percolation potential can be made from soil map units in Iowa. Verification of the soil permeability on the specific site must be performed.

c. Minimum distances

All private sewage disposal systems shall be located in accordance with the mini-mum distances shown in Table I.

TABLE I

Minimum Distances in Feet From	Closed portion of treatment system*	Open portion of treatment system**
Private water supply well	50	100
Public water supply well	200	200
Groundwater heat pump borehole	50	100
Lake or reservoir	50	100
Stream or pond	25	25
Edge of drainage ditch	10	10
Dwelling or other structure	10	10
Property lines (unless mutual easement recorded	10	10
Other type of subsurface treatment system	5	10
Water lines continually under pressure	10	10
Suction water lines	50	100
Foundation drains or subsurface tiles	10	10

* Includes septic tanks, aerobic treatment units, fully contained media filters, and impervious vault toilets

** Includes subsurface absorption systems, mound systems, intermittent sand filters, constructed wetlands, open bottom media filters, or waste stabilization ponds

Section 2 Requirements when discharged into surface water or to the ground surface

(1) All discharges from private sewage disposal systems which are discharge into any designated waters of the State shall be treated in a manner that will conform with the requirements of NPDES General Permit No. 4 issued by the Department of Natural Resources, as referenced in 567-Chapter 64. Prior to the use of any system discharging to waters of the state, a notice of intent to be covered by NPDES General Permit No. 4 shall be submitted to the DNR. Systems covered by this permit must meet all applicable requirements listed in the NPDES permit, including effluent sampling and monitoring.

(2) All private sewage disposal systems that discharge above the ground surface shall be annually inspected to ensure proper operation. Private sewage disposal systems that require maintenance contracts shall be inspected by a manufacturer's certified technician or person demonstrating knowledge of the system in accordance with the manufacturer's standards. Private sewage disposal systems not requiring a maintenance contract shall be visually inspected by a person with knowledge of the system for any malfunction and shall have the septic tank opened, inspected and pumped, if needed. A record of the inspection and any tank pumping shall be maintained and be made available to the Dept. upon request.

Section 3 Requirements when discharged into the soil

No septage or wastewater shall be discharged into the soil except in compliance with the requirements contained in these regulations.

Section 4 Building sewers

4(1) Location and construction

The types of construction and distances as shown in Table II shall be maintained for the protection of water supplies. The distances shall be considered minimum and increased where possible to provide better protection.

TABLE II

Sewer Construction	Distance from Well Water Supply	
	Private	Public
1. Schedule 40 plastic pipe (or SDR 26 or stronger) with approved type joints or cast-iron soil pipe (extra heavy or centrifugally cast) with joints of preformed gaskets	10	25
2. Sewer pipe installed to remain watertight and root-proof	50	7

*Under no circumstances shall a well suction line pass under a building sewer line

4(2) Requirements for building sewers

a. Type

Building sewers used to conduct wastewater from a building to the primary treatment unit of a private sewage disposal system shall be constructed of Schedule 40 plastic pipe (or SDR 26 or stronger) with solvent-weld or bell-and-gasket type joints, or cast iron with integral bell-and-gasket type joints.

b. Size

Such building sewers shall not be less than 4" in diameter.

c. Grade

Such building sewers shall be laid to the following minimum grades:

4-inch sewer……..12 inches per 100'
6-inch sewer……...8 inches per 100'

4(3) Cleanouts

a. Spacing

A cleanout shall be provided where the building sewer leaves the house and at least every 100'.

b. Change of direction

An accessible cleanout shall be provided at each change in direction or grade, if the change exceeds 45 degrees.

4(4) Grease interceptors

a. Applicability

Grease interceptors shall be provided for kitchen flows at restaurants, nursing homes, schools, hospitals and other facilities from which grease can be expected to be discharged.

b. Installation

Grease interceptors shall be installed on a separate building sewer serving kitchens flows into which the grease will be discharged. The discharge from the grease trap must flow to a properly designed septic tank or to a building sewer prior to the septic tank.

Section 5 Primary treatment – septic tanks

5(1) General requirements

a. Septic tank required

Every private sewage disposal system shall have as a primary treatment unit a septic tank as described in this rule. All wastewater from the facility serviced shall discharge into the septic tank (except as noted in **d** below).

b. Easements

No septic tank shall be located upon property under ownership different from the ownership of that property or lot upon which the wastewater originates unless easements to that effect are legally recorded and approved by the Board.

c. Effluent discharge requirements

All septic tank effluent shall discharge into a secondary treatment system in compliance with this rule or other system approved by the Board according to **Section 18**.

d. Prohibited wastes

Septic tanks shall not be used for the disposal of chemical wastes or grease in quantities which might be detrimental to the bacterial action in the tank or for the disposal of drainage from roof drains, foundation drains, or area drains.

5(2) Capacity

a. Minimum capacity

The minimum liquid holding capacity shall be as specified in the following chart (capacity may be obtained by using one or more tanks).

1, 2, and 3-bedroom homes……..1250 gallons
4-bedroom homes…….1500 gallons
5-bedroom homes…….1750 gallons
6-bedroom homes…….2000 gallons

b. Other domestic waste systems

In the event that any installation serves more than a 6-bedroom home or its equivalent, or serves a facility other than a house and serves the equivalent of less than 16 individuals, approval of septic tank capacity and design must be obtained from the Board. Minimum septic tank liquid holding volume shall be two times the estimated daily sewage flow.

c. Non-residential flows

For wastewater flow rates for non-residential and commercial domestic waste applications serving the equivalent of less than sixteen individuals on a continuous bases, refer to Appendix A.

d. Minimum depth

Minimum liquid holding depth in any compartment shall be 40".

e. Maximum depth

Maximum liquid holding depth for calculating capacity of the tank shall not exceed 6.5'.

f. Dimension

The interior length of a septic tank should not be less than 5' and shall be at least 1.5 times the width (larger length-to-width ratios are preferred). No tank or compartment shall have an inside width of less than 2'. The minimum inside diameter of a vertical, cylindrical septic tank shall be 5'.

5(3) Construction

a. Fill soil

Any septic tank placed in fill soil shall be placed upon a level, stable base that will not settle.

b. Compartmentalization

Every septic tank system shall be divided into two compartments as follows:

(1) The capacity of the influent compartment shall not be less than one-third nor more than one-half of the total tank capacity.

(2) The capacity of the effluent compartment shall not be less than one-third nor more than one-half of the total tank capacity.

c. Inlet/outlet

The invert of the inlet pipe shall be a minimum of 2" and a maximum of 4" higher than the invert of the outlet pipe.

d. Baffles

Four-inch diameter Schedule 40 plastic pipe tees shall be used as inlet and outlet baffles. Inlet tees shall extend at least 6" above and 8" below the liquid level of the tank. The inlet tee shall extend below the liquid level no more than 20% of the liquid depth. The outlet tee shall extend above the liquid level a distance of at least 6" and below the liquid level a distance of at least 15" but no more than 30% of the liquid depth. A minimum clearance between the top of the inlet and outlet tees and the bottom of the tank lid of

2" shall be provided. A horizontal separation of at least 36" shall be provided between the inlet baffle and the outlet baffle in each compartment.

Outlet baffles shall be fitted with an effluent screen. All effluent screens shall be certified by an ANSI-accredited third-party certifier to meet National Sanitation Foundation Standard 46, including appendices or other equivalent testing as determined by the Dept. Effluent screens require periodic inspection and cleaning to ensure their continued proper operation.

A horizontal slot 4" by 6", or two suitably spaced 4" diameter holes in the tank partition, may be used instead of a tee or baffle, the top of the slot or holes to be located below the water level a distance of one third the liquid depth. A ventilation hole or slot shall be provided in the partition, at least 8" above the liquid level.

e. Access

Access must be provided to all parts of septic tanks necessary for adequate inspection, operation, and maintenance.

An access opening shall be provided at each end of the tank over the inlet and outlet. These openings shall be at least 18" in the smallest dimension.

Water tight risers shall be installed to bring the access openings to the ground surface. Risers shall be secured using stainless steel fasteners of sufficient complexity, locking devices, concrete lids of sufficient weight or other device approved by the Dept. to deter tampering.

f. Materials

Tanks shall be constructed of water-tight, poured concrete, fiberglass, or plastic resistant to corrosion or decay and designed so that they will not collapse or rupture when subjected to anticipated earth and hydrostatic pressures when the tanks are either full or empty. Metal tanks are prohibited. Tanks shall be water-tight. The Dept. may ask for proof a tank is water-tight prior to approval.

g. Dividers

Tank divider walls and divider wall supports shall be constructed of heavy, durable plastic, fiberglass, concrete, or other similar corrosion-resistant materials approved by the Board.

h. Inlet and outlet ports

Inlet and outlet ports of pipe shall be constructed of heavy, durable Schedule 40 PVC plastic sanitary tees or other similar approved corrosion-resistant material.

5(5) Wall thickness

Minimum wall thickness for tanks shall conform to the following specifications:

Poured concrete……	6" thick
Poured concrete, reinforced……..	4" thick
Special concrete mix, vibrated & reinforced……	2.5" thick
Fiberglass or plastic……..	.25" thick

5(4) Concrete specifications

Concrete used in pre-cast septic tank construction shall have a maximum water-to-cement ratio of 0.45. Cement content shall be at least 650 pounds per cubic yard. Minimum compressive strength (f'c) shall be 4000 psi ((28 MPa) at 28 days of age. The use of ASTM C150 Type II cement or the addition of silica fume or Class F fly ash is recommended.

5(5) Tank Bottoms

Septic tank bottoms shall conform to the specifications set forth for septic tank walls except special mix concrete shall be at least 3" thick.

5(6) Tank tops

Concrete or masonry septic tank tops shall be a minimum of 4" in thickness and reinforced with 3/8" reinforcing rods in a 6" grid or equivalent. Fiberglass or plastic tank tops shall be a minimum of 0.25" in thickness and shall have reinforcing and be of ridged construction.

5(7) Reinforcing steel placement

The concrete cover for reinforcing bars, mats, or fabric shall not be less that 1".

5(8) Bedding

Fiberglass or plastic tanks shall be bedded according to manufacturer's specifications. Provisions should be made to prevent flotation when the tanks are empty.

5(9) Connecting pipes

a. Minimum diameter

The pipes connecting septic tanks installed in series and at least the first 5' on the effluent side of the last tank shall be a minimum of 4" diameter SCH 40 plastic.

b. Tank connections

All inlet and outlet connections at the septic tanks shall be made by self-sealing gaskets cast into the concrete or formed into the plastic or fiberglass.

c. Joints

All joints in connecting Schedule 40 plastic pipe shall be approved plastic pipe connections such as solvent-welded or compression-type gaskets.

d. Pipe in unstable ground

Schedule 40 plastic pipe shall be used extending across excavations or unstable ground to at least 2' beyond the point where the original ground has not been disturbed in septic tank installations. If the excavation spanned is more than 2', it must be filled with sand or compacted fill to provide a firm bed for the pipe. The first 12" of backfill over the pipe shall be applied in thin layers using material free from stones, boulders, large frozen chunks of earth or any similar material that would damage or break the pipe.

Section 6 Secondary treatment – subsurface soil absorption systems

Soil absorption systems are the best available treatment technology and shall always be used where possible.

6(1) General requirements

a. Location

All subsurface soil absorption systems shall be located on the property to maximize the vertical separation distance from the bottom of the absorption trench to the seasonal high groundwater level, bedrock, hardpan, or other confining layer, but under no circumstances shall this vertical separation be less than 3'.

b. Soil evaluation

A percolation test or professional soil analysis is required before any soil absorption system is installed. A percolation test shall be performed by Board personnel or by a registered, professional engineer who shall consult the Health Dept. prior to conducting the percolation test or soil analysis.

(1) Percolation test

The percolation test procedure is outlined in Appendix B.

(2) Alternative analysis

If a professional soil analysis is performed, soil characteristics such as soil content, color, texture, and structure shall be used to determine a loading rate.

(3) Acceptable percolation rate

An area is deemed suitable for conventional soil absorption if the average percolation test rate is 60 minutes per inch (mpi) or less and greater than one minute per inch. However, if an alternative soil absorption system is proposed (e.g., mound), then the percolation test should be extended to determine whether a percolation rate of 120 mpi is achieved.

(4) Confining layer determination

An additional test hole 6' in depth or to rock, whichever occurs first, shall be provided in the center of the proposed absorption area to determine the location of groundwater, rock formations, or other confining layers. This 6' hole may be augured the same size as the percolation test holes or may be made with a soil probe.

c. Groundwater

If seasonal high groundwater level is present within 3' of the trench bottom final grade and can not be successfully lowered by surface tile drainage, the area shall be classified as unsuitable for the installation of a standard subsurface soil absorption system. Consult Health Dept. personnel for an acceptable alternative me-thod of wastewater treatment.

d. Site limitations

In situations where specific location or site characteristics would appear to prohibit normal installation of a soil absorption system, design modifications may be approved by the Board which could overcome such limitations. Examples of such modifications could be the installation of subsurface drainage, use of shallow or at-grade trenches, drip irrigation, mound system or use of pre-treated effluent.

e. Prohibited drainage

Roof, foundation and storm drains shall not discharge into or upon subsurface absorption systems. Nothing shall enter the subsurface absorption system which does not first pass through the septic tank.

f. Prohibited construction

There shall be no construction of any kind, including driveways, covering the septic tank, distribution box or absorption field of a private sewage disposal system. Vehicle access should be infrequent, primarily limited to vegetation maintenance.

g. Driveway crossings

Connecting lines under driveways shall be constructed of Schedule 40 plastic pipe or equivalent, and shall be protected from freezing.

h. Easements

No wastewater shall be discharged upon any property under ownership different from the ownership of the property or lot upon which it originates unless easements to that effect are legally recorded and approved by the Board.

6(2) Trench length requirements

a. Percolation and soil loading charts

Table IIIa provides a correlation between percolation rates and soil loading rates. Table IIIb provides soil loading rates based upon soil texture and structure. Use Tables IIIa and IIIb to determine the appropriate soil loading rated. Table IIIc specifies linear feet of lateral trenches required utilizing the soil loading rate, wastewater flow rate and trench width. Tables IIId lists optional methods for determining length of lateral trenches or sizing. The alternative option for increased rock usage (Table IIId) shall be used only when the size of lots limits the use of trench lengths prescribed in Table IIIa and IIIb. Further details concerning limitations of this option should be obtained from the Health Dept. personnel prior to requesting authorization for installation.

TABLE IIIa

Maximum Soil Application Rates Based Upon Percolation Rates

Percolation Rate (min./inch)	Septic Tank Effluent (1) gals/sq. ft./day	Pre-treated Effluent (2) gals/sq. ft./day
0 to 5	1.2	1.6
Fine sands	0.5	0.9
6 to 10	0.8-0.6	1.2
11 to 29	0.6-0.5	0.9
30 to 45	0.5-0.4	0.7
46 to 60	0.4-0.2	0.5

Note: (1) BOD 30 mg/L-220 mg/L and TSS 30 mg/L-150 mg/L
(2) BOD <30 mg/L and TSS < 30 mg/L
Typical waste strengths for domestic waste. Higher strength waste should consider pre-treatment.
Percolation rates and soil loading rates do not precisely correlate; therefore, a range is provided.

TABLE IIIb

Maximum soil loading rates based upon soil evaluations in gals/sq. ft./day for septic tank effluent.
Values in ( ) are for secondary treated effluent.

This chart is available in Iowa Dept. of Natural Resources
Chapter 69 Private Sewage Disposal Systems
3-18-09 Version or newer

TABLE IIIc

Length of absorption trenches in feet

	2 bedroom		3 bedroom		4 bedroom		5 bedroom		6 bedroom	
Width of Trench (ft)	2’	3’	2’	3’	2’	3’	2’	3’	2’	3’
Soil loading Rate (gal/sq. ft.)										
0.1	Not suitable for soil absorption trenches.									
0.2	750*	500	1125*	750*	1500*	1000*	1875*	1250*	2250*	1500*
0.3	500	333	750*	500	1000*	666*	1250*	833*	1500*	1000*
0.4	375	250	562	375	750*	500	938*	625*	1125*	750*
0.5	300	200	450	600*	400	750*	500	500	900*	600*
0.6	250	167	375	250	500	333	625*	417	750*	500
0.7	214	143	321	214	428	286	536	357	643*	429
0.8	188	125	281	188	375	250	469	312	562	375
0.9	167	111	250	167	333	222	417	278	500	333
1.0	150	100	250	150	300	200	375	250	450	300
1.1	136	91	205	136	273	182	341	227	409	273
1.2	125	84	188	125	250	167	313	208	375	250

An * requires pressure distribution by pumping

TABLE IIId

Alternative Option for Increased Rock Usage
(Only if necessary)

Depth of gravel* below distribution line	Reduction in trench lengths as taken from Table IIIa
12’	20%
18”	33%
24”	40%

The * indicates total depth must not exceed 36”. Soil profile must be consistent with the percolation Rate throughout the depth used. Separation from groundwater and confining layers must be maintained.

b. Unsuitable absorption

Conventional subsurface soil absorption trenches shall not be installed in soils that have a percolation rate less than one minute per inch or greater than 60 mpi. Plans for an alternative method of wastewater treatment shall be submitted to the Health Dept. personnel for approval prior to construction

6(3) Construction details

a. Depth

Soil absorption trenches shall not exceed 36” in depth and a more shallow trench depth of 12-18” is recommended. Not less than 6” of porous soil shall be provided over the laterals. Minimum separation be-tween trench bottom and groundwater, rock formation or other confining layer shall be 36” even if ex-tra rock is used under the pipe.

b. Length

No gravity soil absorption trench shall be greater than 100’ long.

c. Separation distance

At least 6’ of undisturbed soil shall be left between each trench edge on level sites. The steeper the slope of the ground, the greater the separation distance should be. Two feet of separation distance should be added for each 5% increase in slope from level.

d. Grade

Trench bottom should be constructed level from end to end. On sloping ground, the trench shall follow a uniform land contour to maintain a minimum soil cover of 6" while ensuring a level trench bottom.

e. Compaction

There shall be minimum use or traffic of heavy equipment on the area proposed for soil absorption. In addition, it is prohibited to use heavy equipment on the bottom of the trenches in the absorption area.

f. Fill soil

Soil absorption systems shall not be installed in fill soil. Disturbed soils which have stabilized for at least one year would require a recent percolation test. Health Dept. personnel may reject any fill soil site deemed to not be suitable for an absorption system.

g. Bearing strength

Soil absorption systems shall be designed to carry loadings to meet ASSHTO H-10 standards.

h. Soil smearing

Soils with significant clay content should not be worked when wet. If soil moisture causes sidewall smearing, the trench bottom and sidewalls shall be scarified.

6(4) Gravel systems

a. Gravel

A minimum of 6" of clean, washed river gravel, free of clay and clay coatings shall be laid below the distribution pipe, and enough gravel shall be used to cover the pipe. This gravel shall be of such a size that 100% will pass a 2.5" screen and 100% will be retained on a .75" screen. Limestone or crushed rock is not allowed as a rock medium.

b. Trench width

Soil absorption trenches for gravel systems shall be a minimum of 24" and a maximum of 36" in width at the bottom of the trench.

c. Grade

The distribution pipes shall be laid with a minimum grade of 2" per 100' of run and a maximum of 4" per 100' of run, with preference given to the lesser slope.

d. Pipe

Distribution pipe shall be PVC rigid plastic meeting ASTM Standard 2729, or other suitable material approved by the Board. The inside diameter shall be not less than 4", with perforations at least 0.5" and no more than 0.75" in diameter spaced no more than 40" apart. Two rows of perforations shall be provided located 120 degrees apart along the bottom half of the tubing (each 60 degrees up from the bottom center line). The end of the pipe in each trench shall be sealed with a watertight cap unless, on a level site, a footer is installed connecting the trenches together. Coiled, perforated plastic pipe shall not be used when installing absorption systems.

e. Gravel cover

Untreated building paper, synthetic drainage fabric, straw, or other approved material shall be laid so as to separate the gravel from the soil backfill.

6(5) Gravelless pipe systems

a. Application

Gravelless subsurface soil absorption systems may be used as an alternative to conventional 4" pipe pla-ced in gravel-filled trenches.

b. Installation

Manufacturer's specifications and installation procedures shall be adhered to.

c. Material

The10" I.D. corrugated polyethylene tubing used in gravelless systems shall meet the requirements of ASTM F667, Standard Specification for Large Diameter Corrugated Polyethylene Tubing.

d. Perforations

Two rows of perforations shall be located 120 degrees apart along the bottom half of the tubing (each 60 degrees up from the bottom center line). Perforations shall be cleanly cut into each inner corrugation along the length of the tubing and should be staggered so that there is only one hole in each corrugation.

e. Top marking

The tubing shall be visibly marked to indicate the tope of the pipe.

f. Filter wrap

All gravelless drain field pipe shall be encased, at the point of manufacture, with a geotextile filter wrap specific to this purpose.

g. Trench width

The minimum trench width for the gravelless system shall be 24".

h. Length of trench

The total length of absorption trench for a 10" gravelless pipe installation shall be the same as given in Table IIIc for a conventional soil absorption trench.

6(6) Chamber systems

a. Application

Chamber systems may be used as an alternative to conventional 4" pipe placed in gravel-filled trenches.

b. Installation

Manufacturer's specification and installation procedures shall be closely adhered to.

c. Length of trench

The total length of soil absorption trench for chambers shall be the same as given in Table IIIc for a conventional soil absorption trench.

d. Sidewall

The chambers shall have at least 6" of sidewall effluent soil exposure height.

6(7) Gravity distribution

Dosing is always recommended and preferred to improve distribution, improve treatment and extend the life of the system.

a. General

On a hillside, septic tank effluent may be serially loaded to the soil absorption trenches by drop boxes. Otherwise, effluent shall be distributed evenly to all trenches by use of a distribution box or commercial distribution regulator approved by the Board.

b. Design

When a distribution box is used, it shall be of proper design and installed with separate watertight headers leading from the distribution box to each lateral. Header pipes shall be rigid PVC plastic pipe meeting ASTM Standards 2729 or equivalent.

c. Outlets height

The distribution box shall have outlets at the same level at least 4" above the bottom of the box to provide a minimum of 4" of water retention in the box.

d. Baffles

There shall be a pipe tee or baffle at the inlet to break the water flow.

e. Unused outlets

All unused outlet holes in the box shall be securely closed.

f. Materials

All distribution boxes and drop boxes shall be constructed of corrosion-resistant rigid plastic materials.

g. Outlets level

All outlets of the distribution box shall be made level. A 4" cap with an offset hole approximately 2.5" in diameter shall be installed on each outlet pipe. These caps shall be rotated until all outlets discharge at the same elevation.

h. Equal length required

The soil absorption area serviced by each outlet of the distribution box shall be equal.

6(8) Dosing systems

a. Pump systems

(1) Pump and pit requirements

In the event the effluent from the septic tank outlet cannot be discharged by gravity and still maintain proper lateral depths, the effluent shall discharge into a watertight vented pump with an inside diameter of not less than 24", equipped with a tight fitting manhole cover above grade level. The pump shall be of a submersible type of corrosion-resistant material.

(2) Pump setting

The pump shall be installed in the pump pit in a manner that ensures ease of service and protection from frost and settled sludge. The pump shall be set to provide a dosing frequency of approximately four times a day based on the maximum design flow. No one-site electrical connections shall be made in the pump pit. These connections shall be made in an exterior weatherproof box.

(3) Pressure line size

The pressure line from the pump to the point of discharge shall not be smaller than the outlet of the pump it serves.

(4) Drainage

Pressure lines shall be installed to provide total drainage between dosings to prevent freezing or be buried below frost level up to the distribution box.

(5) High water alarm

Pump pits shall be equipped with a sensor set to detect if the water level rises above the design high water level when the pump fails. This sensor shall activate an auditory or visual alarm to alert the home-owner that repairs are required.

(6) Discharge point

The effluent shall discharge under pressure into a distribution box or may be distributed by small diameter pipes throughout the entire absorption field.

(b) Dosing siphons

Dosing siphons may also be used. Manufacturer's specifications shall be adhered to for installation. Similar dosing volumes and frequencies are recommended. Dosing siphons require periodic cleaning to ensure their continued proper operation.

6(9) Expanded polystyrene (EPS) synthetic aggregate system

a. Application

EPS aggregate systems may be used as an alternative to conventional 4" pipe placed in gravel filled trenches, where gravel trenches would be approved.

b. Installation

Manufacturer's specifications and installation procedures shall be closely adhered to.

c. Length of trench

The total length of soil absorption trench for EPS aggregate shall be the same as given in Table IIIc. The EPS aggregate shall cover 90% of the width of the trench bottom.

D. Cover

Untreated building paper, synthetic drainage fabric, or other approved material shall be laid so as to separate the EPS aggregate from the soil backfill.

6(10) At-grade systems

These regulations adopt Section 69.11 of the Iowa Administrative Code 567(455B) by reference.

Section 7 Mound System

7(1) General requirements

a. Mound systems shall be permitted only after a thorough site evaluation has been made and landscaping, dwelling placement, effect on surface drainage and general topography have been considered.

b. Mound systems shall not be utilized on sites which are subject to flooding with a ten-year or greater frequency.

c. Mound systems shall not be utilized on soils where the high groundwater level, impermeable bedrock or soil strata having a percolation rate exceeding 120 mpi occur within 12" of natural grade, or where creviced bedrock occurs within 20" of natural grade.

d. Mound systems shall be constructed only upon undisturbed naturally occurring soils.

e. Mound systems shall be located in accordance with the distances specified in Table I as measured from the outer edge of the mound.

f. No buildings, driveways or other surface or subsurface obstructions shall be permitted within 50' on the down gradient side of the mound when the mound is constructed on a slope greater than 5%. No future construction shall be permitted in this effluent disposal area as long as the mound is in use.

g. Specifications given in these rules for mounds are minimal and may not be sufficient for all applications. Technical specifications are changing with experience and research. Other design information beyond the scope of these rules may be necessary to properly design a mound system.

7(2) Specifications

These rules adopt Sections 69.10 of the Iowa Administrative Code 567 (455B) by reference.

Section 8 Drip irrigation

These rules adopt Section 69.12 of the Iowa Administrative Code 567 (455B) by reference.

Section 9 Packed bed media filters

9(1) General requirements

a. Use

Intermittent sand filters may be used when the Board determines the site is unacceptable for a soil absorption system.

b. Location

Intermittent sand filters shall be located in accordance with the distances specified in Table I.

c. Sampling

A sampling port shall be available at the discharge point of the filter or shall be installed in the discharge line. All intermittent sand filters having an open discharge will be sampled in accordance with the requirements of NPDES General Permit #4.

d. Prohibited construction

There shall be no construction, such as buildings or concrete driveways, covering any part of an intermittent sand filter.

9(2) Construction

a. Number

An intermittent sand filter shall consist of one filtering bed or two or more filtering beds connected in series and separated by a minimum of 6' of undisturbed earth.

b. Pipe lines

Each bed shall contain a horizontal set of collector lines. The collector lines shall be equivalent to SDR35 PVC pipe or other suitable material.

(1) One collector line shall be provided for each 6' of width or fraction thereof. A minimum of two collector lines shall be provided.

(2) The collector lines shall be laid to a grade of 1" in 10'.

(3) Each collector line shall be vented or connected to a common vent. Vents shall extend at least 12" above the ground surface with the outlet screened, or provided with a perforated cap.

(4) The 4" perforated collector lines shall be covered as follows:

1. Gravel .75" to 2.5" in size shall be placed around and over the lower collector lines until there is a minimum of 4" of gravel over the pipes.

2. The gravel shall be overlain with a minimum of 3" of washed pea gravel 1/8" to 3/8" size interfacing with the filter media. A layer of fabric may be used in place of the pea gravel. Fabric filters must be 30 by 50 mesh with a percolation rate of at least 5 gal/sq. ft.

(5) A minimum of 24" of coarse, washed sand shall be placed over the pea gravel or fabric. The sand shall meet the Iowa DOT standard for concrete sand: 100% shall pass a 9.5 mm screen, 90-100% shall pass a 4.75 mm screen, 70-100% shall pass a 2.36 mm screen, 10-60% shall pass a 600 micron screen, and 1-1.5% shall pass a 75 micron screen.

(6) The discharge pipe that extends from the collection system shall be SDR35 pipe at a minimum.

9(3) Subsurface sand filter

a. Distribution system and cover

(1) Gravel base

Six inches of gravel .75" to 2.5" in size shall be placed upon the sand in the bed.

(2) Distribution lines

Distribution lines shall be level and shall be horizontally spaced a maximum of 3' apart, center to center. Distribution lines shall be rigid perforated PVC pipe.

(3) Venting

Venting shall be placed on the downstream end of the distribution lines with each distribution line being vented or connected to a common vent. Vents shall extend at least 12" above the ground surface with the outlet screened, or provided with a perforated cap.

(4) Gravel cover

Enough gravel shall be carefully placed to cover the distributors.

(5) Separation layer

A layer of material such as untreated building paper of 40-60 pound weight, or synthetic drainage fabric shall be placed upon the top of the upper layer of gravel.

(6) Soil cover

A minimum of 12" of soil backfill shall be provided over the beds.

(7) Distribution boxes

A distribution box shall be provided for each filter bed where gravity distribution is used. The distribution box shall be placed upon undisturbed earth outside the filter bed. Separate watertight lines shall be provided leading from the distribution box to each of the distributor lines in the beds.

(b) Sizing of subsurface sand filters

(1) Gravity flow

For residential systems, subsurface sand filters shall be sized at a rate of 240 sq. ft. of surface area per bedroom.

(2) Pressure dosed

For residential systems, subsurface sand filters dosed by a pump or dosing siphon may be sized at a rate of 150 sq. ft. of surface area per bedroom.

(3) Non-household

Effluent application rates for commercial systems treating domestic waste water not exceed the following:

1. 1.0 gallon/sq. ft./day for single bed sand filters
2. Total surface area for any subsurface sand filter system shall not be less than 200 sq. ft.

9(4) Free access sand filter

These rules adopt Section 69.13(4) of the Iowa Administrative Code 567 (455B) by reference.

Section 10 Peat Moss Biofilter Systems

These rules adopt Section 69.13(6) of the Iowa Administrative Code 567 (455B) by reference.

Section 11 Recirculating textile filter systems

These rules adopt Section 69.13(7) of the Iowa Administrative Code 567 (455B) by reference.

Section 12 Individual mechanical aerobic wastewater treatment system

These rules adopt Section 69.14 of the Iowa Administrative Code 567 (455B) by reference.

Section 13 Constructed wetland

These rules adopt Section 69.15 (455B) of the Iowa Administrative Code 567 (455B) by reference. Constructed wetlands are a high maintenance system of last resort and not recommended as a treatment system.

Section 14 Waste stabilization pond

Waste stabilization ponds are not approved as a suitable method of sewage wastewater disposal for residential use. Waste stabilization ponds shall only be used for non-residential applications and shall be designed by an Iowa licensed engineer.

All waste stabilization ponds having an open discharge will be sampled in accordance with the requirements of NPDES General Permit #4.

All such plans must be approved by the Board of Health and the Dept. of Natural Resources, where required.

Section 15 Requirements for impervious vault toilets

All impervious vault toilets hereafter constructed or required by the Board to be reconstructed shall comply with the following requirements:

15(1) Location

Impervious vault toilets shall be located in accordance with the distances given in Table I for the closed portion of the treatment system.

15(2) Construction

The vault shall be constructed of reinforced, impervious concrete at least 4" thick. The super-structure including floor slab, seat, seat cover, riser and building shall comply with good design and construction practices to provide permanent, safe, sanitary facilities. The vault shall be provided with a cleanout opening fitted with a fly-tight cover.

15(3) Disposal

Waste from impervious vault toilets shall be disposed of as directed in Section 17 of these regulations.

Section 16 Requirements for portable toilets

All portable toilets shall be designed to receive and retain the wastes deposited in them and shall be located and maintained in a manner that will prevent the creation of any nuisance condition. Disposal of waste from a portable toilet shall be into a public sewage treatment facility.

Section 17 Other methods of wastewater disposal

Other methods or types of private wastewater treatment and disposal systems shall be installed only after plans and specifications for each project have been approved by the Board.

Section 18 Disposal of septage from private sewage disposal systems

The collection, storage, transportation and disposal of all septage shall be carried out in accordance with the requirements of Chapter 68 of the Iowa Administrative Code 567 (455B).

The Dept. shall enforce the licensing program for commercial septic tank cleaners in accordance with the requirements of Chapter 68 of the Iowa Administrative Code 567 (455B)

Section 19 Experimental private sewage disposal systems

Experimental systems are to be designed and operated in accordance with approved standards and operating procedures established by the Board.

a. Plans and specifications meeting all applicable rule requirements should be prepared and submitted to the Board by a licensed professional engineer. Included with the engineering submittal should be adequate supporting data relating to the effectiveness of the proposed system.

b. For systems designed to discharge treated effluent into water of the State, it will be necessary to obtain a Notice of Intent to fall under the requirements of NPDES General Permit No. 4. The Board is responsible for determining that the requirements of the permit are met including the monitoring program.

c. The Board shall prepare for signature an enforceable agreement to be placed on record which would require that present and future system owners meet all applicable rule requirements. In the event of non-compliance, the Board shall require that adequate steps be taken by the system owner to bring the system into compliance.

Section 20 Wastewater management districts

Wastewater management districts may be formed for the purpose of providing specialized control of on-site wastewater treatment and disposal systems located in certain problem areas or in intensive development areas. Formation of such wastewater management districts shall be coordinated under the guidance of the Board and shall meet all applicable regulations.

Section 21 Variances

Variances to these rules may be granted by the Board provided sufficient information is submitted to substantiate the need and propriety for such action. Applications for variances and justification shall be in writing and copies filed in the Board of Health minutes.

Appendix A

These rules adopt Appendix A of Chapter 69 of the Iowa Administrative Code 567 (455B).

Appendix B

Percolation Test Procedure

1. A minimum of five test holes distributed evenly over the proposed soil absorption field is required.
2. Percolation test holes shall be 4-12” in diameter and to the same depth as the proposed soil absorption trenches (not to exceed 36” in depth).
3. Sides and bottoms of the test holes shall be scratched or roughened to provide a natural surface. All loose material shall be removed from each hole.

4. At least 4" diameter plastic tubes with holes in the sides in the lower 1' shall be placed in the test holes and surrounded with pea gravel in the annular space to near the surface as well as placing 2" of pea gravel in the bottom of the hole.
5. The hole shall be filled with at least 12" of clean water and this depth shall be maintained for at least 4 hours and preferably overnight if clay soils are present. It is important that the soil be allowed to soak for a sufficiently long period of time to allow the soil to swell if accurate results are to be obtained.
6. Percolation rate measurements should be made at least 4 hours but no more than 24 hours after the soaking period began. At no time during the test is the water level allowed to rise more than 6" above the gravel.
7. Immediately after adjustment, the water level is measured from a fixed reference point to the nearest 1/8" at set intervals (e.g., 20 minutes). The test is continued until two successive water level drops do not vary by more than 1/8". At least three measurements are made.
8. After each measurement, the water level is re-adjusted to approximately the same level. The last water drop is used to calculate the percolation rate.
9. The percolation rate is calculated for each hole by dividing the time interval used between measurements by the magnitude of the last water level drop. This calculation results in a percolation rate in terms of minutes per inch. If more than one test hole in the area varies by more than 20 minutes per inch from the other holes, variations in soil type are indicated. Under these circumstances, percolation rates should not be averaged and the site should be re-evaluated or another percolation test done.
10. To determine the average percolation test rate for the site, the fastest and slowest rate holes are eliminated and the middle three are averaged to determine the value to be used in the percolation rate tables (IIIa and IIIb).
11. If the percolation test is not done by the Health Dept. personnel, it must be done by a certified, professional engineer.
12. The Board reserves the right to evaluate and reject any test submitted if there are questions about the procedure used or the results obtained.

These regulations were submitted to the Guthrie County Board of Health at the March 18, 2009 meeting.

The Guthrie County Board of Health held a public hearing on these regulations at its April 15, 2009 meeting. The regulations were tabled at this meeting for further discussion at the May meeting.
The Guthrie County Board of Health approved these regulations at the May 20, 2009 meeting.

The regulations received final approval at the June 4, 2009 meeting of the Guthrie County Board of Supervisors.