

ILLINOIS REGISTER

DEPARTMENT OF PUBLIC HEALTH

NOTICE OF PROPOSED AMENDMENTS

- 1) Heading of the Part: Private Sewage Disposal Code
- 2) Code Citation: 77 Ill. Adm. Code 905
- 3)

<u>Section Numbers</u> :	<u>Proposed Action</u> :
905.10	Amend
905.15	Amend
905.20	Amend
905.30	Amend
905.40	Amend
905.50	Amend
905.55	Amend
905.60	Amend
905.70	Amend
905.100	Amend
905.110	Amend
905.120	Amend
905.125	Amend
905.130	Amend
905.140	Amend
905.180	Amend
905.190	Amend
905.195	New
905.200	Amend
905.APPENDIX A	
905.ILLUSTRATION C	Amend
905.ILLUSTRATION D	Amend
905.ILLUSTRATION G	Amend
905.ILLUSTRATION L	Amend
905.ILLUSTRATION M	Amend
905.ILLUSTRATION N	Amend
905.ILLUSTRATION Y	New
905.ILLUSTRATION Z	New
905.APPENDIX B	Amend
- 4) Statutory Authority: Implementing and authorized by the Private Sewage Disposal Licensing Act [225 ILCS 225].
- 5) A Complete Description of the Subjects and Issues Involved:

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This rulemaking addresses the ongoing maintenance and inspection for private sewage disposal systems. The rulemaking requires the use of suitable soils for subsurface seepage private sewage disposal systems when possible. The rulemaking also addresses requirements for compliance regarding the Illinois Environmental Protection Agency and National Pollutant Discharge Elimination System permits for surface discharging private sewage disposal systems. The rulemaking also clarifies the Department's ability to provide statewide approval for technology that has already been tested by another governmental entity.

The rulemaking addresses requirements for sizing of chambers, sample ports, and effluent reduction trenches. The rulemaking also addresses the design of sample ports, effluent reduction trenches, and subsurface seepage private sewage disposal systems. In addition, location and restrictions of surface discharges from surface discharging private sewage disposal systems are addressed. The rulemaking provides updated reference materials, sizing data, contact information, and dates. The rulemaking also provides clarification and additional definitions of terms that are included in the Act. The rulemaking also addresses contractor requirements, as well as consequences for failing to attend examinations. The rulemaking also sets out the minimum set back distances for IEPA, Class V wells and treated effluent discharge points.

- 6) Published studies or reports, and sources of underlying data, used to compose this rulemaking: NSF International/ANSI Standard 40, NSF International/ANSI Standard 41 and NSF International/ANSI Standard 46.
- 7) Will this rulemaking replace any emergency rulemaking currently in effect? No
- 8) Does this rulemaking contain an automatic repeal date? No
- 9) Does this rulemaking contain incorporations by reference? Yes
- 10) Are there any other proposed rulemakings pending on this Part? No
- 11) Statement of Statewide Policy Objectives:

This rulemaking does not create or expand a State mandate.
- 12) Time, Place and Manner in which interested persons may comment on this proposed rulemaking:

Interested persons may present their comments concerning this rulemaking within 45 days after the publication of this issue of the *Illinois Register* to:

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- 13) Initial Regulatory Flexibility Analysis:
- A) Types of small businesses, small municipalities and not for profit corporations affected:
- Installation contractors
- B) Reporting, bookkeeping or other procedures required for compliance:
- Reporting of service and maintenance they have conducted.
- C) Types of professional skills necessary for compliance:
- None

- 14) Regulatory Agenda on which this rulemaking was summarized:
- January 2007

The full text of the Proposed Amendments begins on the next page:

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TITLE 77: PUBLIC HEALTH
CHAPTER I: DEPARTMENT OF PUBLIC HEALTH
SUBCHAPTER r: WATER AND SEWAGE

PART 905
PRIVATE SEWAGE DISPOSAL CODE

Section	
905.10	Definitions
905.15	Incorporated and Referenced Materials
905.20	General Requirements
905.30	Approved Private Sewage Disposal Systems
905.40	Septic Tanks
905.50	Distribution Boxes
905.55	Subsurface Seepage System Design Requirements
905.60	Subsurface Seepage System Construction Requirements
905.70	Buried Sand Filters
905.80	Recirculating Sand Filter
905.90	Waste Stabilization Ponds
905.95	Illinois Raised Filter Bed
905.96	Peat Filter Systems
905.100	Aerobic Treatment Plants <u>and NSF International/ANSI Standard 40 Wastewater Treatment Systems</u>
905.110	Effluent Discharges
905.120	Disinfection
905.125	Pumps, Pumping/Dosing Chambers and Ancillary Equipment
905.130	Human Waste Disposal
905.140	Holding Tanks
905.150	Sanitary Dump Stations
905.160	Swimming Pool Wastewater
905.170	Servicing, Cleaning, Transporting and Disposing of Wastes from Private Sewage Disposal Systems
905.180	Examinations for Licensure
905.190	Installation Approval
<u>905.195</u>	<u>Operational Permits</u>
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905.EXHIBIT B
905.ILLUSTRATION Z

Effluent Receiving Trench Configuration
Residential Septic Tank Maintenance Schedule

905.APPENDIX B Contact Information for the Central and Regional Offices
 Telephone or Address Inquiries to the Regional Office

AUTHORITY: Implementing and authorized by the Private Sewage Disposal Licensing Act [225 ILCS 225].

SOURCE: Filed October 19, 1974, effective October 25, 1974; rules repealed, new rules adopted at 6 Ill. Reg. 3095, effective March 9, 1982; amended at 8 Ill. Reg. 8552, effective June 4, 1984; codified at 8 Ill. Reg. 19821; amended at 9 Ill. Reg. 20738, effective January 3, 1986; amended at 10 Ill. Reg. 11054, effective July 1, 1986; amended at 20 Ill. Reg. 2431, effective March 15, 1996; amended at 23 Ill. Reg. 5080, effective April 10, 1999; 27 Ill. Reg. 3074, effective February 10, 2003; amended at 32 Ill. Reg. _____, effective _____.

Section 905.10 Definitions

In addition to the definitions contained in the Private Sewage Disposal Licensing Act [225 ILCS 225], the following definitions shall apply:

"Aerobic Treatment Plant" means equipment or devices for the treatment of sewage by the forced addition of air or oxygen.

"Act" means the Private Sewage Disposal Licensing Act [225 ILCS 225].

"Ag. Experiment Station" means the University of Illinois Agricultural Experiment Station.

"Approved" or "Approval" means accepted by or acceptable to the Department or local authority.

"Approved Certification Agency" means an organization that has been accredited by the American National Standards Institute (ANSI) and found to meet the requirements specified in International Organization for Standardization (ISO)/International Electrotechnical Commission Guide 65, to evaluate wastewater treatment units and components for compliance with NSF International/ANSI Standard 40, NSF International/ANSI Standard 41 and NSF International/ANSI Standard 46.

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"ASTM" means the American Society for Testing and Materials.

"Building Drain" means that part of the lowest horizontal 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 (house) sewer. The building drain's developed length terminates 5 feet outside the building foundation wall.

"Building Sewer" means that part of the horizontal piping of a drainage system which extends from the end of the building drain, receives the discharge of the building drain and conveys it to a public sanitary sewer, or private sewer, individual sewage disposal system, or other point of disposal. The building sewer commences 5 feet outside the building foundation wall.

"Clear Water" means cooling water and condensate waste from refrigeration or air conditioning equipment, cooled condensate from steam heating systems and seepage water.

"Common Collector" means an underground, enclosed conduit designed to carry treated sewage effluent exclusive of stormwater, ~~from 3 or fewer properties provided the combined treated sewage effluent is less than 1500 gallons per day and has a surface discharge. An example of a common collector is a solid plastic pipe installed to carry treated sewage effluent from 2 or 3 discharging systems with a combined design flow of less than 1500 gallons per day. Examples of what is not a common collector are road ditches, field ditches, curbs and gutters, grassed waterways, concrete or other lined drainage ways.~~

"Component" means an integral part of a private sewage disposal system that is necessary for the satisfactory design, construction and operation of the system.

"Discharge Point" means the point at which treated effluent discharges from an approved private sewage disposal system.

"Effective Size" means the size of screen opening where 90 percent by weight of a sample of filter media is retained on the screen and 10 percent passes through the screen.

"Effluent" means something that flows out.

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“Estimated Seasonal High Water Table” means the highest level to which the soil is saturated as determined by direct observation or as may be determined by examining soil color patterns, other features of the soil profile, landscape position, the vegetation growing on the site, and such additional information on water table fluctuations in the local soil-landscape as may be provided in the soil survey report for the area.

"Gravelless Seepage System" means the use of approved perforated 8-inch or 10-inch diameter, filter-wrapped, plastic pipe, in lieu of 4 inch pipe and gravel, in subsurface fields and serial distribution systems.

"Hot Tub" means an artificial container of water with a liquid capacity greater than 100 gallons and designed with a mechanical air injection system and/or recirculating device. These devices may filter and/or disinfect the water for reuse and are not intended to be drained between uses.

“Influent” means something that flows in.

"Limiting Layer" means a horizon or condition in the soil profile or underlying strata ~~that which~~ includes:

~~An estimated seasonal high-water table, whether perched or regional, determined by direct observation of the water table or indicated by soil mottling where common mottles, comprise at least 2% to 20% of the soil, in a progressive downward direction in the soil.~~

Masses of loose rock fragments, including gravel, with insufficient fine soil to fill the voids between the fragments; ~~and -~~

Rock formation, other stratum or soil condition ~~that which~~ is so slowly permeable that it effectively limits downward passage of effluent.

"Liquid Capacity" means the volume of a tank below the invert of the outlet line.

"Local Authority" means a local unit of government ~~that which~~ enforces a private sewage disposal ordinance ~~that which~~ has been approved by the Department; or a local health department ~~that which~~ has been designated an agent of the State for conduct of the Private Sewage Disposal Program.

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"Non-Residential Property" means any property that is not residential property.

"NPDES Permit" means any General or Individual National Pollutant Discharge Elimination System Permit issued by the Illinois Environmental Protection Agency.

"NRCS" means the USDA Natural Resource Conservation Service.

"NSF International" means the National Sanitation Foundation International, an independent testing laboratory.

"NSF International/ANSI Standard 40 Wastewater Treatment System" means any system that has been certified by an approved certification agency to meet NSF International/ANSI Standard Number 40, Residential Wastewater Treatment Systems.

"Residential Property" means a single family home or multi-family unit intended for occupation as living quarters, which that is not used to conduct any business that generates wastewater or domestic sewage.

"Septage" means the solid and liquid wastes removed from private sewage disposal systems.

"Shall" means the stated provision is mandatory.

"Soil Boring" means an observation pit, dug by hand or backhoe, or an undisturbed soil core taken intact and undisturbed by a probe.

"Soil Classifier" means one of the following:

A Certified Professional Soil Classifier ~~certified soil classifier~~ of the Illinois Soil Classifiers Association (ISCA) or a Certified Professional Soil Classifier ~~certified soil classifier~~ with the Soil Science Society of America (SSSA), formerly the American Registry of Certified Professionals in Agronomy, Crops and Soils (ARCPACS).

A person who is a full member or associate member of the Illinois Soil Classifiers Association (ISCA), provided that direct supervision is

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provided to this person by an ISCA or SSSA Certified Professional Soil Classifier ~~ARCPACS certified soil classifier~~ who accompanies the person on at least 25% of the soil investigations and reviews and signs all of that person's soil investigation reports.

"Surface Discharging System" is an approved Private Sewage Disposal System that discharges properly treated effluent to an approved discharge point.

"Subsurface Seepage System" means a subsurface seepage field or seepage bed; ~~or an 8 inch or 10 inch gravelless seepage system.~~

"Uniformity Coefficient" means a number obtained by dividing that size of sand in millimeters of which 60% by weight is smaller, by that size of sand in millimeters of which 10% by weight is smaller.

"Wastewater Source" means any equipment, facility, or other source of any type whatsoever that discharges wastewater, directly or indirectly, to the waters of the State.

"Water Table" means the upper limit of the portion of the soil ~~that~~ which is completely saturated with water. ~~The seasonal high water table is the highest level to which the soil is saturated, as may be indicated by mottling (soil color patterns).~~

Soil science terms used throughout the text of this Code are defined in the Soil Science Society of America, Glossary of Soil Science Terms (2001 ~~July 1987~~) unless otherwise defined.

(Source: Amended at 32 Ill. Reg. _____ effective _____)

Section 905.15 Incorporated and Referenced Materials

The following standards of nationally recognized organizations and federal and State regulations are incorporated or referenced in this Part:

- a) The following materials are incorporated by reference:
 - 1) NSF International/ANSI ~~ANSI/NSF~~, Standard 46, Evaluation of Components and Devices Used in Wastewater Treatment Systems (October 22, 2004 ~~May 2, 2002~~) published by:

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NSF International
789 Dixboro Road
Ann Arbor, Michigan 48105

Referenced in Section ~~950.40, Section 905.120~~ 905.30

- 2) NSF International/ANSI ~~ANSI/NSF~~, Standard 40, Residential Wastewater Treatment Systems (August 1, 2005 ~~July 12, 2000~~) published by:

NSF International
789 Dixboro Road
Ann Arbor, Michigan 48105

Referenced in Section 905.100

- 3) NSF International/ANSI ~~ANSI/NSF~~, Standard 41, Non-Liquid Saturated Treatment Systems (March 28, 2005 ~~1998~~) published by:

NSF International
789 Dixboro Road
Ann Arbor, Michigan 48105

Referenced in Section 905.130

- 4) American Society for Testing and Materials (ASTM) required standards are listed under Section 905. Appendix A of this Part. List of approved plastic pipe for private sewage disposal system uses and standards may be obtained from:

American Society for Testing and Materials
100 Barr Harbor Drive
West Conshohocken, Pennsylvania 19428-2959

Referenced in Sections 905.40, 905.60, 905.70

- 5) Standard Methods for Examination of Water and Wastewater (21st edition, October 2005) published by:

American Public Health Association

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1015 8th Street
Washington, D.C. 20036

Referenced in Section 905.110

- 6) Glossary of Soil Science Terms (~~2001 July 1987~~) published by:

The Soil Science Society of America
677 South Segoe Road
Madison, Wisconsin 53711

Referenced in Section 905.10

- 7) Title 40 of the Code of Federal Regulations, Standards for the Use or Disposal of Sewage Sludge (40 CFR 503)

Referenced in Section 905.170

- 8) National Electrical Code, ~~2005 1993~~ Edition, published by:

National Fire Protection Association
1 Batterymarch Park
Quincy, Massachusetts 02269

Referenced in Section 905.20

- 9) International Organization for Standardization (ISO)/International Electrotechnical Commission (IEC) Guide 65 (December 18, 2006) published by:

ISO Central Secretariat
International Organization for Standardization (ISO)
1, ch. de la Voie-Creuse
Case Postale 56
CH-1211 Geneva 20
Switzerland

IEC Central Office
3, rue de Varembe
P.O. Box 131

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Switzerland

Referenced in Section 905.100

- b) The following materials are referenced in this Part:
- 1) Department of Public Health regulations
 - A) Private Sewage Mound Code (77 Ill. Adm. Code 906)
Referenced in Section 905.30
 - B) Illinois Plumbing Code (77 Ill. Adm. Code 890)
Referenced in Sections 905.20, 905.140, 905.150 and Appendix A:
Illustration C
 - C) Recreational Area Code (77 Ill. Adm. Code 800)
Referenced in Section 905.150
 - D) Rules of Practice and Procedure in Administrative Hearings (77 Ill.
Adm. Code 100)
 - 2) Pollution Control Board regulations
 - A) Introduction (35 Ill. Adm. Code 301)
Referenced in Section 905.110
 - B) Permits (35 Ill. Adm. Code 309)
Referenced in Sections 905.110 and 905.170
 - C) Waste Disposal (35 Ill. Adm. Code Subtitle G)
Referenced in Sections 905.20 and 905.140
 - D) Classification of Injection Wells (35 Ill. Adm. Code 704.106)

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Referenced in 905.Appendix A, 905.Illustration D

E) Environmental Protection Act (415 ILCS 5)

Referenced in 905.140

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- 3) Illinois Department of Transportation Specifications for Road and Bridge Construction (January 1, 2007 ~~2002~~) published by:

Illinois Department of Transportation
Manuals Office, Room 128 ~~012~~
2300 S. Dirksen Parkway
Springfield, Illinois 62764

Referenced in Section 905.95

- 4) Illinois Highway Code, 605 ILCS 5/9-123

Referenced in Section 905.110

5) Environmental Protection Act [415 ILCS 5]

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- c) All incorporations by reference of federal regulations and the standards of nationally recognized organizations refer to the regulations and standards on the date specified and do not include any amendments or editions ~~additions or deletions~~ subsequent to the date specified.
- d) All citations to federal regulations in this Part concern the specified regulation in the 2005 ~~1994~~ Code of Federal Regulations, unless another date is specified.
- e) All materials incorporated by reference are available for inspection and copying at the Illinois Department of Public Health, Department's Central Office, ~~Department's Central Office~~, Division of Environmental Health, 525 West Jefferson, Springfield, Illinois 62761.

(Source: Amended at 32 Ill. Reg. _____, effective _____)

Section 905.20 General Requirements

- a) Rate of Flow for Domestic Sewage. Each unit of the private sewage disposal

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system shall be designed to treat the volume of domestic sewage discharged to it. The volume of sewage flow shall be determined from Appendix A, Illustration A of this Part. For non-residential establishments, the Department will consider the use of actual flow volumes obtained from similar installations in lieu of the quantities contained in Appendix A, Illustration A of this Part, when the flow data is documented. Examples of the documentation that could be accepted would be actual measurements of the quantity of wastewater, or water use receipts. In the design of a private sewage disposal system, peak flows shall be designed for and/or attenuated. When the sewage flow exceeds 1500 gallons per day, and there is a surface discharge, then approval shall be obtained from the Illinois Environmental Protection Agency.

- b) Type of Waste. A private sewage disposal system shall be designed to receive all waste from the buildings served. ~~No cooling water, groundwater, discharge from roof drains, discharge from footing tile drains, swimming pool wastewater, or other clear water discharges shall be directed to the private sewage disposal system. Drains or fixtures receiving any product other than domestic sewage shall be discharged to a holding tank and not to a private sewage disposal system.~~
- 1) Prohibited Influent. No groundwater, discharge from roof drains, discharge from footing tile drains, swimming pool wastewater, or clear water discharges shall be directed to the private sewage disposal system. Backwash water from a water softener shall discharge to one of the following:
- A) ~~A septic tank followed by a seepage field, sand filter or waste stabilization pond.~~
 - B) ~~A separate subsurface seepage system, provided the seepage field is designed to accommodate the flow from this device on a daily basis. A septic tank is not required in front of a seepage field receiving flow from this device.~~
- 2) Water Softener and Hot Tub Wastewater. Backwash water from a water softener or wastewater from a hot tub or similar device shall discharge to one of the following: Wastewater generated by a hot tub or other similar device shall be discharged to one of the following:
- A) A separate building drain in accordance with the Illinois Plumbing Code. The seepage field serving the domestic wastewater flow.

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~~provided that the seepage field is increased in size to accommodate the additional flow from the water softener and/or hot tub on a daily basis. This drainage shall be piped so that it does not enter the septic tank, but is directed into the subsurface seepage field. A separate subsurface seepage system, provided the seepage field is designed to accommodate the liquid capacity of the hot tub on a daily basis. A septic tank is not required in front of a seepage field receiving flow from this device.~~

B) ~~A separate building drain in accordance with the Illinois Plumbing Code, which will discharge to a separate subsurface seepage system, provided the seepage field is designed to accommodate the flow from this device on a daily basis. A septic tank is not required in front of a seepage field receiving flow from this device. The seepage field serving the domestic wastewater flow, provided the seepage field is increased in size to accommodate the additional flow from the hot tub on a daily basis. This drainage shall be piped around the septic tank and directly into the seepage field.~~

3) Motorized Equipment. Waste products such as automotive grease, oils, solvents, and chemicals shall not discharge to a private sewage disposal system. These waste products shall be handled according to rules for disposal of oil, gas and grease promulgated under the Environmental Protection Act, or according to 35 Ill. Adm. Code, Subtitle G, or shall be taken to an oil and gas reclamation center. The floor drain of any non-residential property that meets the requirements of subsection (b)(3)(A) or (B) of this Section, and is connected to a public sewer, shall be connected to an approved gas and oil interceptor meeting the requirements of Section 890.520 of the Illinois Plumbing Code. Wastes from floor drains in areas where vehicles or motorized equipment are serviced and parked shall be treated in accordance with the following:

A) For any non-residential property in which a floor drain may receive fluids from vehicle or motorized equipment repair or maintenance activities, floor drains shall be connected to a public sewer or holding tank and not to a private sewage disposal system. Repair and maintenance facilities shall include, but shall not be limited to, service stations and auto body, muffler, transmission, small engine, and brake repair shops. Floor drains in any facility that performs

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vehicle or motorized equipment repair work shall be connected to a public sewer or holding tank. If the floor drain is connected to a public sewer, then the floor drain shall be connected to an approved gas and oil interceptor meeting the requirements of Section 890.520 of the Illinois Plumbing Code. If the floor drain is connected to a holding tank, a gas and oil interceptor is not required.

- B) For any non-residential property in which vehicles or motorized equipment ~~is are~~ parked or stored and repair or maintenance ~~is are~~ not performed, floor drains may discharge to a public sewer or a private sewage disposal system, provided floor drains are only used to receive water from motorized equipment or vehicle washing or to drain melted snow. When floor drains in such properties are connected to a private sewage disposal system, the system must be increased in size based upon the anticipated daily flow. When a maintenance area is adjacent to a parking area, physical barriers, such as a raised curb or recessed floor in the maintenance area, ~~shall must be~~ provided to assure that oil and gas are not discharged to floor drains.
- C) For any residential property with a garage of any size, floor drains may discharge directly to a private sewage disposal system. No increase in size of the residential private sewage disposal system is required to handle this liquid waste.
- 4) Other Waste. Drains or fixtures receiving any product other than domestic sewage or wastewater specified in subsection (b)(2) of this Section shall be discharged to a holding tank and not to a private sewage disposal system.
- c) Individual Service. The use of a private sewage system to serve more than one property is prohibited except where a common property is provided, under joint ownership of the users, or where the system is under public jurisdiction or managed by a district established for the maintenance of such systems.
- d) Water and Sewer Line Separation. The following criteria shall govern the separation of water supply lines and sewer lines:
 - 1) Horizontal Separation. Sewers shall be installed at least 10 feet

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horizontally from any existing or proposed water line. When local conditions prevent a lateral separation of 10 feet, a sewer may be laid closer than 10 feet to a water line provided that the elevation of the crown of the sewer is at least 18 inches below the invert of the water line.

- 2) Crossings. Where sewer lines must cross water lines, the sewer line shall be laid at such an elevation that the crown of the sewer line is at least 18 inches below the invert of the water line. This vertical separation shall be maintained for that portion of the sewer line located within 10 feet horizontally of any water line it crosses. When sewer lines must cross above water lines, the sewer lines shall be Schedule 40 or equivalent material with watertight joints.
- e) Sanitary Sewer. New or renovated private sewage disposal systems shall not be approved where a sanitary sewer operated and maintained under permit of the Illinois Environmental Protection Agency is available for connection. A sanitary sewer is available for connection when it is within 300 ~~200~~ feet of a residential property or a non-residential property with a sewage flow less than 1500 gallons per day, or within 1000 feet of a non-residential property with a sewage flow greater than or equal to 1500 gallons per day unless a physical barrier or local ordinance exists ~~that which~~ prevents connection to the sewer. If connection from the property to the sanitary sewer cannot be made with an individual line (i.e., 4" line), then a private sewage disposal system may be installed.
- f) Acceptable Pipe Materials.
 - 1) All piping located more than 5 feet from the building foundation, used to convey wastewater to a private sewage disposal system, shall be considered a part of the private sewage disposal system and shall be watertight. This piping shall be ductile iron, vitrified clay, or plastic pipe. Only vitrified clay or plastic pipe shall be used from the septic tank and after the distribution box (where used). Perforated pipe or open-jointed tile shall be used only as provided in this Code.
 - 2) Use of plastic pipe and fittings shall conform to ~~the uses designated in~~ Appendix A, Illustration C of this Part.
 - 3) Piping used to carry domestic sewage under areas such as driveways, roads, or parking areas shall be Schedule 40 equivalent or greater.

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- g) Pipe Size and Slope. Solid pipes carrying treated effluent by gravity shall have a nominal diameter of 4 inches and a minimum slope of 6 inches per 100 feet. All solid pipes carrying domestic sewage by gravity flow shall have a nominal diameter of at least 4 inches and a minimum slope of 12 inches per 100 feet. Solid header lines used for equal distribution shall be level.
- h) Prohibited Discharges. There shall be no discharge of raw or improperly treated domestic sewage to the surface of the ground or to farm tiles, streams, rivers, ponds, lakes, or other collectors of water. Improperly treated domestic sewage is sewage that does not meet the effluent requirements of Section 905.110(b) or sewage ~~that which~~ comes directly from a septic tank or building sewer. Domestic sewage or effluent from any private sewage disposal system or component shall not be discharged into any well, cistern, or basement or into any underground mine, cave, sinkhole or tunnel.
- i) Pipe Length. Building sewers in excess of 50 feet in length ~~that which~~ carry wastewater from the buildings served to the septic tank, distribution box or aeration treatment plant shall be provided with at least one cleanout ~~clean-out~~ every 50 feet that terminates at grade.
- j) Private Sewage Disposal System Development. The following factors shall govern the development of a private sewage disposal system:
- 1) Drainage. A private sewage disposal system shall not be located in areas where surface water will accumulate. Provisions shall be made to minimize flow of surface water over the private sewage system. Examples of such provisions would be the use of dikes, embankments, ditches or flow diverters.
 - 2) Distances. The location of the various components of a private sewage disposal system shall comply with Appendix A, Illustration D of this Part.
 - 3) Area Reserved for Sewage Disposal. The area to be used for a private sewage disposal system shall be selected and maintained so that it is free from encroachment by driveways, accessory buildings, swimming pools, parking areas, buried lawn sprinkling systems and underground utility services, patios, slabs, and additions to the original structure or any other structure ~~that which~~ limits free access to the system for maintenance, servicing or proper operation. The designated area shall be marked to deter any traffic in the area of the proposed subsurface system.

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- 4) Creviced Limestone Formations. A subsurface seepage system shall not be constructed in an area where there is less than 4 feet of soil between the lowest point in a subsurface seepage system and the top of a creviced limestone formation. In areas where creviced limestone is known to occur, a soil boring to a depth of at least 4 feet below the bottom of the subsurface seepage system shall be made to verify that creviced limestone is not present.
- 5) After March 1, 2008, every proposal for installation or replacement of a private sewage disposal system shall meet the requirements of Section 905.55 of this Part to determine the feasibility for the use of a subsurface seepage system. If the soils on the lot are identified within Design Groups II through VII as illustrated in Section 905. Appendix A. Illustration M. Exhibit A, a subsurface system shall be used when there is sufficient area for a subsurface seepage system, excluding the area for the structure served by private sewage disposal system and provided that the minimum distance can be met as established in Section 905.60 (a)(7) and Appendix A. Illustration D. of this Part.
- k) Electrical Devices. All electrical devices shall be wired in accordance with the National Electrical Code or a municipal, county, or local electrical code, whichever is more stringent.
- 1) ~~Any component of a private sewage disposal system that which is electrically activated shall be provided with a visible and audible warning device placed within the building served. All electrical devices shall be wired in accordance with the National Electrical Code or a municipal, county, or local electrical code, whichever is more stringent.~~
- 2) Alarms installed after March 1, 2008, shall be located outside of the building served. The power supply for the alarm shall be on a dedicated circuit. The design of the alarm shall meet the requirements specified in Section 5.8 of NSF International/ANSI Standard 40 requirements. The alarm shall be housed in a weather-proof box.
- 3) Electrical devices installed after March 1, 2008, shall be provided with an electrical disconnect that is located within sight of and not more than 50 feet away from the device.

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- l) Variances. If conditions exist at a proposed installation ~~that which~~ make ~~impractical or impossible~~ compliance with the requirements of this Part impractical or impossible, a variance may be requested by submitting to the Illinois Department of Public Health, Division of Environmental Health, or appropriate local authority a written proposal that is to be used in lieu of compliance with this Part. Such written request shall include pertinent data such as soil conditions, water table elevations, drainage patterns and distances to water supplies in order to support the request. The capability of the system to comply with the intent of this Part will be the basis for approval or denial of the variances. The Department or local authority will notify the applicant in writing of its decision to either grant or deny the variance. A variance shall be requested and approved before construction begins.
- m) Experimental Use Permits. If a private sewage disposal system or component is of a new and/or innovative type and does not comply with the requirements of this ~~Part Code~~, the homeowner or private sewage contractor or manufacturer may request an experimental use permit. Such a request shall be submitted in writing to the Illinois Department of Public Health, Division of Environmental Health, and a permit issued prior to construction or installation. The request and shall include meet the following ~~requirements~~:
- 1) The request shall specify the type of proposed system or component to be used and be accompanied by plans, specifications, and engineering data to support the system's compliance with the general requirements under Section 905.20 and with the effluent criteria under Section 905.110 for surface discharges, if applicable.
 - 2) Information (such as topographical or plat maps) regarding the location of each installation shall be provided to the Department.
 - 3) The homeowner, private sewage disposal system installation contractor, and/or manufacturer shall provide the Department with proof that area is available for installation of an approved system should the experimental system fail.
 - 4) The homeowner, private sewage disposal system installation contractor, and /or manufacturer shall guarantee in writing the replacement of the experimental system with an approved system if the experimental system fails to perform in accordance with any of the Sections of this Part, or with criteria established as a condition to approval of the system.

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- 5) The private sewage disposal system installation contractor and/or the manufacturer shall notify the homeowner, or the person obtaining the experimental use permit, of the aforementioned guarantee, and of the ~~requirements minimum standards of this Part the Illinois Private Sewage Disposal Code that~~ which must be met, as determined through the process described in subsections (n)(3) and (4) of this Section for developing criteria to be used in the evaluation of the experimental system.
 - 6) Upon receipt of the information required by this subsection (m), the Department will review the experimental system to determine the system's capability of being considered equal to or more stringent than applicable Sections in this Part Code, and will notify the applicant, in writing, of its decision to grant or deny the request for an experimental use permit. If the request is approved, the Department will issue an "Experimental Use Permit" for each installation, up to 30 installations in the State.
- n) Experimental Use Evaluation.
- 1) A minimum of 10 experimental installations shall be evaluated before an unconditional approval may be granted.
 - 2) The experimental permit shall be valid for a period of up to ~~two~~ 2 years, during which time the Department will evaluate the performance of the experimental system. At the end of the ~~two-~~ 2 year evaluation period, the Department will determine ~~make a determination as to~~ whether the system will be approved.
 - 3) The Department, in consultation with the experimental use permit applicant, shall develop a test method for the experimental system, which ~~that~~ will include the following information:
 - A) purpose of the test;
 - B) length of the test;
 - C) analytical methods to be used;
 - D) wastewater characteristics;

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- E) loading requirements; and
 - F) test criteria, including installation procedures, operating procedures, site evaluation criteria, control system criteria, start-up procedures, sampling procedures, and observation procedures.
- 4) The Department, in consultation with the permit applicant, shall develop performance requirements that will detail the criteria to be used to evaluate the product to determine its ability to become an approved private sewage disposal system. Such performance requirements shall include, but are not limited to, ponding in subsurface systems indicating that failure of the system is imminent.
- 5) The experimental system will be deemed unacceptable:
- A) when sewage erupts from the ground;
 - B) when effluent from the system does not meet the criteria of Section 905.110(d); or
 - C) when the experimental system does not comply with the requirements of subsections (n)(3) and (4) of this Section.
- 6) If acceptable, the experimental system shall become an approved private sewage system. If found to be unacceptable, the experimental system shall not be approved for use as a private sewage disposal system and shall be replaced with an approved private sewage disposal system. The Department shall notify the applicant, in writing, of its determination.
- 7) A homeowner, private sewage contractor or manufacturer whose experimental system has been denied approval for use as a private sewage disposal system may request a hearing to appeal the Department's determination. The request shall be submitted in writing within 10 days after receipt of the Department's determination. The Department's Rules of Practice and Procedure in Administrative Hearings (77 Ill. Adm. Code 100) shall apply to all proceedings conducted under this Section.
- 8) When an experimental system has been designated by the Department as an approved private sewage disposal system, the Department will amend this Part to include design, construction, operation and maintenance

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criteria for the newly approved system and will add the system to a list of approved systems maintained by the Department.

- o) Garbage Grinders. When garbage grinders are used in residential property, solids shall be retained by one of the following methods:
 - 1) A solids retention tank constructed in accordance with Section 905.40 shall be placed between the wastewater source and the septic tank to intercept solids from the garbage grinder. This tank shall receive waste from the garbage grinders or the kitchen wastes only. No other fixtures shall discharge into this tank. The solids retention tank shall be at least 50% in liquid volume of the septic tank sized for the waste from the rest of the property; however, the minimum size tank to be used shall be 500 gallons.
 - 2) A septic tank receiving all flows from the property sized in accordance with Appendix A, Illustration F of this Part.
- p) Whenever an existing private sewage disposal system is repaired or replaced, that portion of the system being repaired or replaced shall comply with all the requirements of this Part.
- q) Maintenance of Private Sewage Disposal Systems.
 - 1) After March 1, 2008, private sewage disposal systems permitted under Section 905.190 of this Part are required to be maintained and serviced to ensure proper operation in accordance with the following:
 - A) Septic tank or septic tank followed by a sand filter discharging to a subsurface seepage system.
 - i) Private sewage disposal systems serving residential properties shall be pumped out and have maintenance performed at the frequency specified in Appendix A, Illustration Z.
 - ii) Private sewage disposal systems serving non-residential property shall have the tanks pumped out and have maintenance performed at least annually. If annual pumping is not sufficient to maintain the septic tank, then it

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shall be pumped out on a more frequent basis.

- B) An aerobic treatment unit (ATU) requires maintenance at least once every six months.
 - C) Sand filters and lagoons with surface discharges require maintenance at least once every year.
 - D) All other private sewage disposal systems that are not listed above shall be maintained in accordance with the manufacturer's specifications or based on a maintenance interval approved by the Department.
 - E) The owner of a private sewage disposal system may submit an alternative maintenance interval to the Department for approval. Such alternative interval will be evaluated by the Department on a case-by-case basis and shall be evaluated upon change of property ownership or use.
- 2) After March 1, 2008, as a condition of applying for an installation approval required by Section 905.190 of this Part, the signature by the property owners on the Installation Approval submission for any private sewage disposal system being installed, repaired or renovated serves as written acknowledgement that said property owners are aware of and accept the responsibility to service and maintain the private sewage disposal system in accordance with the Act and this Part.
 - 3) All maintenance shall be recorded on forms provided by the Department. The person providing maintenance of the private sewage disposal systems and/or the homeowner shall submit the completed form to the Department within 60 days after the date of maintenance.
 - 4) Failure to maintain a private sewage disposal system is a violation of the Act and this Part.
- r) Installation Contractor Onsite. A licensed Private Sewage Disposal System Installation Contractor shall be present at the site during construction, installation, repair, modification or maintenance of a private sewage disposal system. Cleaning, pumping, disposing and hauling of waste from a private sewage disposal system shall be performed by a licensed Private Sewage Disposal System

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Pumping Contractor. A person who owns and occupies a single family dwelling and who constructs, installs, maintains, services or cleans the private sewage disposal system which serves his single family residence shall not be required to be licensed under this Act, however, such person shall comply with all other provisions of this Act and the private sewage disposal code promulgated hereunder by the Department. [225 ILCS 225/4]

- s) Construction and Excavation. Any construction or excavation performed by any individual other than the person who owns and occupies a single family dwelling shall be performed by a licensed Private Sewage Disposal System Contractor.
- t) The Department may issue approval for a private sewage disposal system or a component thereof that has been approved by another governmental body or an Approved Certification Agency, based upon, but not limited to, the Department's review of the following information: submittals to other governmental bodies, analysis from third party testing, testing results from other governmental bodies, historical use within the jurisdiction of other governmental bodies.

(Source: Amended at 32 Ill. Reg. _____ effective _____)

Section 905.30 Approved Private Sewage Disposal Systems

- a) The following systems are approved for private sewage disposal when designed, constructed, operated, and maintained in accordance with this Part Code:
 - 1) Septic tank, Imhoff tank or aerobic treatment plants followed by:
 - A) Subsurface seepage field;
 - B) Seepage bed;
 - C) Sand filter (buried or recirculating);
 - D) Waste stabilization pond;
 - E) 8 inch or 10 inch gravelless seepage system;
 - F) Chamber system; or
 - G) Peat filter system.

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- 2) Aerobic treatment plant and NSF International/ANSI Standard 40 wastewater treatment systems discharging to supplementary treatment or to the surface, as provided in Section 905.100 and [Section 905.110](#).
 - 3) Privies, chemical toilets, recirculating toilets, incinerator toilets, compost toilets.
 - 4) Mounds designed in accordance with the requirements of the Private Sewage Mound Code (77 Ill. Adm. Code 906).
 - 5) Holding tanks installed in accordance with Section 905.140.
 - 6) Any other system for which a variance in accordance with Section 905.20(1) has been issued or for which an experimental permit in accordance with Section 905.20(m) has been issued.
 - 7) Illinois raised filter bed preceded by a batch treatment aeration system.
 - 8) Technologies approved by the Department under Section 905.20(t) of this Part.
- b) All other systems or components are not approved.

(Source: Amended at 32 Ill. Reg. ____, effective _____)

Section 905.40 Septic Tanks

- a) Septic Tank Approval. Manufacturers of prefabricated septic tanks shall submit ~~three~~ 3 sets of plans for each size and configuration of septic tank to the Department for approval. Such plans shall be drawn to scale and show all dimensions, baffles, tees, cleanouts, and material specifications. [The Department will provide a](#) written approval for each size tank ~~shall be provided by the Department~~ when the plans are found to conform to the requirements of this Part Code.
- 1) The Department shall issue an approval number to each manufacturer for each series of approved septic tanks, and shall maintain a listing of the approved manufacturers and approved septic tank series.

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- 2) No prefabricated septic tank shall be sold, offered for sale, or installed other than those which have been approved by the Department. The tank shall bear the manufacturer's approval number and the liquid capacity of the tank, in gallons, prominently displayed on the outside end wall of the tank above, or next to, the outlet pipe so that this information is readily visible after installation and prior to covering. The Illinois Department of Public Health approval number shall not be used on any tank other than the septic tank for which it ~~is~~ has been issued.
- 3) All persons who manufacture, sell, offer for sale or deliver septic tanks or aerobic treatment plants in or into the State of Illinois shall record the following information about each septic tank or aerobic treatment plant sold or delivered. This information shall be available for inspection by the Department or local authority upon request.
 - A) Name of purchaser and/or property owner (if different);
 - B) Location of delivery (county and address, legal description or driving directions);
 - C) Date of sale and delivery; and
 - D) Size of septic tank or model of aerobic unit.
- b) Septic Tank Construction. Septic tanks shall be designed and constructed in accordance with the following: (Appendix A₂, Illustration E of this Part is an illustration of these requirements.)
 - 1) A septic tank shall be watertight and constructed of sound and durable materials not subject to excessive corrosion, decay, frost damage, or cracking due to settling or backfilling.
 - 2) Engineering Specifications.
 - A) The tank shall support a top-dead load of not less than 500 pounds per square foot, and concrete tanks shall have a minimum 28-day compressive strength of 3000 pounds per square inch (psi).
 - B) Tanks must be designed and constructed so that they will not collapse or rupture when subjected to anticipated earth and

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hydrostatic pressures when the tanks are either full or empty. The manufacturer, design engineer, and/or structural engineer shall certify in writing to the Department that the tank is designed and constructed to meet the load requirements of this Part. If additional loading is anticipated, the tank shall be strengthened to accommodate the additional loading.

- 3) Materials. Septic tanks shall be constructed of the following approved materials:
 - A) Poured-in-place reinforced concrete.
 - B) Precast reinforced concrete.
 - C) Concrete block, provided that the core is filled with concrete and reinforcing rods are inserted in the core prior to pouring.
 - D) Reinforced plastic.
 - E) Reinforced fiberglass.
 - F) Thermoplastic.
- 4) Depth. The minimum liquid depth of the tank shall be 42 inches, and the maximum liquid depth shall be 72 inches.
- 5) Inlet and Outlet Connections.
 - A) The invert elevation of the inlet shall be at least 2 inches above the liquid level in the tank.
 - B) The inlet and outlet openings of the septic tank shall be provided with cast-in watertight openings.
- 6) Baffles. Septic tank baffles shall meet the following requirements:
 - A) Inlet baffles shall be provided and shall extend at least 6 inches below the surface of the liquid.
 - B) Inlet baffles shall be located no farther than 12 inches from the

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inlet orifice.

- C) Inlet and outlet baffles shall have a clearance of at least ~~1 one~~ inch but not greater than 3 inches of free space between the underside of the tank lid and the baffles.
- D) Outlet baffles shall be provided and shall extend to a depth equal to ~~of~~ 40% of the liquid depth level.
- E) Outlet baffles shall be located no farther than 6 inches from the outlet end wall.
- F) Slip-in baffles shall extend the full width of the tank.
- G) The sides of "V" or semi-circular type baffles shall fit tightly against the end wall of the tank.
- H) Venting shall be provided through all baffles, and a free vent area equal to the cross-sectional area of the building ~~house~~ sewer shall be provided.
- I) Submerged pipe T-branches or sanitary tees may be used at the inlets and outlets in lieu of baffles, provided that all of the above stated distances and depths are maintained.
- J) Submerged pipe T-branches or sanitary tees used as inlet baffles shall be 6 inches in diameter or larger. Outlet baffles shall be 4 inches in diameter.
- K) Submerged pipe T-branches or sanitary tees shall meet the requirements of ASTM 2661, ASTM 2665 or ASTM 3034, ~~ASTM 3033~~, or ASTM 2751 provided the pipe does not have an SDR (Standard Dimension Ratio) number greater than 35.
- L) When submerged pipe T-branches or sanitary tees are used as baffles, it shall be the responsibility of the septic tank manufacturer to assure proper location of components during initial installation.
- M) When a single compartment septic tank is manufactured or used, a gas deflection baffle shall be provided below the outlet baffle of

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the tank configured to deflect rising gas bubbles away from the outlet structure and toward the interior of the tank. This baffle shall be constructed of a durable material not subject to corrosion or decay. (Appendix A₂, Illustration E₂, Exhibit C of this Part is an illustration.) An NSF International/ANSI Standard 46, Section 10 septic tank filter may be used in lieu of the gas deflector baffle. The septic tank filter baffle shall be installed so that it is extended or suspended to a depth equal to 40% of the liquid level of the tank.

- 7) Access. Access shall be provided over the inlet and outlet of the tank to facilitate inspection and cleaning. The manhole or access opening shall have a fitted lid with a minimum dimension of 12 inches (width or diameter). Risers shall be watertight and constructed of a durable material. If the top of the tank is greater than 12 inches below the ground surface, a riser with a minimum dimension of 12 inches (width or diameter) shall be provided to bring access over the inlet and outlet to within 12 inches of the ground surface. The joint between the septic tank and the risers shall be watertight. If a two-2-compartment tank is used, and the tank has an opening over the wall between the compartments, the center opening shall have access provided within 12 inches of the ground surface.
- c) Capacity.
 - 1) Septic tanks for individual residences shall be sized in accordance with Appendix A₂, Illustration F of this Part. Septic tanks for any establishment other than residential property shall be sized in accordance with the estimated flow provided in Appendix A₂, Illustration A of this Part and as follows:
 - 2) The volume below the liquid level for flows up to 500 gallons per day shall be at least 750 gallons. For flows greater than 500 gallons per day, the volume shall be equal to at least one and one-half times the estimated daily sewage flow. When the total flow exceeds 1,350 gallons per day, 2 or more tanks in series, or a multi-compartment tank, shall be installed.
 - d) Multiple Tanks or Compartments. When multiple compartment septic tanks or multiple septic tanks in series are used, the capacity of the first compartment or tank shall be one-half to two-thirds of the total required capacity. Two-

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compartment tanks shall also comply with the following:

- 1) The wall separating the first and second compartments shall be tight-fitting and designed to handle the differential in pressure if one side is pumped.
 - 2) The wall separating the compartments shall extend to within 3 inches of the tank lid and shall have a free vent area equal to the cross-sectional area of the house sewer.
 - 3) The center of the opening between compartments shall be in line with the center of the inlet and outlet openings.
 - 4) The depth to the invert of the opening between compartments shall be 40% of the liquid depth.
 - 5) A gas deflection baffle shall be provided below the outlet baffle of the tank, configured to deflect rising gas bubbles away from the outlet structure and toward the interior of the tank. This baffle shall be constructed of a durable material that is not subject to corrosion or decay. An NSF International/ANSI Standard 46, Section 10 septic tank filter may be used in lieu of the gas deflector baffle. The septic tank filter baffle shall be installed so that it is extended or suspended to a depth equal to 40% of the liquid level of the tank.
 - 6) For a ~~two-~~ 2 compartment tank, openings with a minimum dimension of 18 inches shall be located over the inlet and outlet of the tank or 12-inch openings as follows:
 - A) one located over the inlet,
 - B) one over the outlet, and
 - C) one centered over the compartment wall.
- e) Septic Tank Installation.
- 1) The septic tank shall be set level and backfilled to prevent floatation or drifting of the tank. Level shall mean plus or minus one-half inch in any direction (length or width or diameter of the tank).

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- 2) If the inlet, outlet or access openings are to be set at or below the seasonal high water table, all openings in the tank shall be made watertight using mastic, tar, silicone caulk, etc.
- 3) There shall be no connections such as joints, splices, or fittings within the area of overdig around the septic tank.
- f) Abandoned Treatment Units. Septic tanks, cesspools, pit privies, aerobic treatment plants and seepage pits that are no longer in use shall be completely pumped. The floor and walls shall be cracked or crumbled so the tank will not hold water, and the tank shall be filled with sand or soil. If the tank is removed from the ground, the excavation shall be filled with soil.

(Source: Amended at 32 Ill. Reg. _____ effective _____)

Section 905.50 Distribution Boxes

- a) General. Distribution boxes may be installed between a septic tank, aerobic treatment plant or NSF Standard 40 wastewater treatment system ~~or aerobic treatment plant~~ and a subsurface seepage system or buried sand filter. If a distribution box is used, it shall be installed level on unexcavated earth, and shall provide equal distribution of flow to the subsequent disposal system.
- b) Connecting Pipe. The pipe connecting the septic tank, aerobic treatment or NSF Standard 40 wastewater treatment system to the distribution box and the pipe connecting the distribution box to the disposal system shall be watertight.
- c) Construction. Distribution boxes shall be constructed of a durable, watertight, non-corrosive material. They shall be designed to accommodate the necessary distribution lines.
- d) Access. Distribution boxes shall be provided with an opening ~~that which~~ will serve as a ready access for inspection, cleaning, and general maintenance.
- e) There shall be no connection such as joints, splices or fittings within the area of the overdig around the distribution box.

(Source: Amended at 32 Ill. Reg. _____ effective _____)

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Section 905.55 Subsurface Seepage System Design Requirements

When designing a subsurface seepage system, the absorption capacity of the soil shall be determined by subsection (a) or (b) of this Section ~~as follows~~. On or after January 1, 2009, when designing a subsurface seepage system, the absorption capacity of the soil shall be determined by subsection (a) of this Section. After January 1, 2009, subsection (b) of this Section shall be used to judge if the soils may be suitable for a subsurface system.

- a) Soil Investigation.
 - 1) Soil investigations shall be conducted in the following manner:
 - A) Determination of soil characteristics on sites proposed for development with private sewage disposal systems shall be based on soil boring data collected by a soil classifier or an Illinois licensed professional engineer.
 - B) There shall be a minimum of 3 borings per soil absorption system site. The soil borings shall be at least 50 feet apart, and the proposed subsurface seepage system shall be located within the area where the soil borings were located. More soil borings may be necessary for accurate and appropriate evaluation of a site where there is some concern about the consistency of the soil materials. One of the borings shall be made at the lowest elevation of the proposed absorption field area. Borings shall extend a minimum of 60 inches below the natural ground surface. An observation pit shall be used in gravelly materials.
 - C) Observation and determination of soil characteristics may also be ~~also~~ determined from a pit dug by a backhoe or other excavating equipment. The Department or local authority may require soil pits (backhoe excavation) in cases where ground is frozen, where the soil materials are considerably varied in texture, where there has been previous or current fill material, cutting of soils, or where gravelly soils are encountered. Such soil pits shall be prepared at the perimeter of the expected soil absorption area to minimize damage to natural soil structure. Soil pits shall extend a minimum of 60 inches below the natural ground surface.

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- D) Site characteristics to be described include zones of seasonal and permanent water saturation, U.S.D.A. soil textural changes, U.S.D.A. soil structural features, slope, compaction and depth, soil coloration, depth of limiting layer, depth of soil mottling (depth to low chroma equal to or less than 2 and a value of 4 or more - Munsell Color System), internal drainage classification, and permeability range, and other limiting soil characteristics that may reduce permeability.
- 2) The following persons are qualified to conduct soil investigations:
- A) any person who meets the definition of soil classifier in Section 905.10;
- B) an Illinois Licensed Professional Engineer ~~a licensed professional engineer~~;
- C) an Illinois Licensed Professional Geologist
- ~~D~~) an employee of a local health department who has 3 years of experience in designing or approving private sewage disposal systems using soil classification information and has 6 semester hours of soils-related coursework;
- E) an employee of a local health department with 5 years experience reviewing the design and ~~designing or~~ approving private sewage disposal systems using soil classification information under the direct supervision of those persons listed in subsection (A), (B), or (C) or (D) of this subsection (a)(2).
- ~~A list of qualified persons will be available from the Department upon request.~~
- 3) If conflicting soils investigation information is provided about a given site, an NRCS soil scientist who is a Certified Professional Soil Classifier may be required ~~requested~~ to provide additional professional information or help to resolve the conflict.
- b) Percolation Tests.

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- 1) Performance of Percolation Tests. At least ~~three~~ 3 separate percolation tests, a minimum of 50 feet apart, shall be performed at the site of each proposed subsurface seepage system.
- 2) Procedure for Performing Percolation Tests. Percolation tests shall be performed in accordance with the procedure outlined in Appendix A, Illustration G of this Part. Alternate procedures for performing percolation tests may be submitted to the Department for review. If determined to be as stringent as that described in Appendix A, Illustration G of this Part, the alternate procedure shall be approved.
- 3) The Department or its agent may not accept percolation data results and may require a soil analysis if soils information, permits for private sewage disposal systems in proximity to the proposed site, direct observation or other information shows conditions that will have an impact on the design, construction installation, modification or performance of the private sewage disposal system. ~~If soils information, permits for private sewage disposal systems in close proximity to the proposed site, direct observations or other information show conditions which will impact the design, construction, installation, modification or performance of the private sewage disposal system, the Department or local authority shall cause the determination of the seasonal high water table, fill, soil compaction, poor soil structure, high bulk density, dense unleached glacial till, fragipans, sodic horizons or other limiting soil characteristics that may reduce permeability or impact on design, construction or location of a subsurface seepage system~~

(Source: Amended at 32 Ill. Reg. _____ effective _____)

Section 905.60 Subsurface Seepage System Construction Requirements

- a) Seepage Field Requirements – Gravel, Gravelless and Chamber Systems. Subsurface seepage fields shall be designed and constructed in accordance with Appendix A, Illustrations H, I, and J of this Part and the following:
 - 1) All subsurface seepage systems using soils information for sizing shall use the soil suitability table in Appendix A, Illustration M of this Part to determine the size requirements of the subsurface seepage system. The least permeable soil profile between the top of the gravel or gravelless pipe or chamber system and the limiting layer shall be used to determine

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the size of the subsurface seepage system.

- 2) The bottom of the subsurface seepage field, each trench and its distribution line shall be level. Level for this Part shall mean plus or minus ½ inch in any direction over the entire area of the subsurface seepage system.
- 3) There shall be a minimum of 6 inches and a maximum of 24 inches of earth backfill over the bedding materials, gravelless pipe or chamber system.
- 4) There shall be a minimum of 5 feet of undisturbed earth between the septic tank and the nearest trench.
- 5) If precipitation falls onto the excavation and evidence of soil washing into the excavation of the subsurface seepage system exists, that portion of the seepage system damaged shall be reconstructed to conform with this Section.
- 6) The top of the gravel, gravelless pipe, or chamber system in the subsurface seepage field shall be at least 1 one inch below the invert of the outlet pipe from the septic tank or distribution box in a gravity flow system.
- 7) Site evaluation for subsurface seepage systems. Subsurface seepage systems receiving septic tank effluent ~~shall~~ ~~should~~ have at least 2 feet of vertical separation distance between the bottom of the subsurface seepage system and the top of the limiting layer. For soils in Design Group I-VI or with a loading rate of greater than 0.62 gallons per day per square foot, there ~~shall~~ ~~should~~ be at least a vertical separation distance of 3 feet between the bottom of the subsurface seepage system and the top of the limiting layer. When the limiting layer is the estimated seasonal high water table, drainage systems, which are designed to lower the estimated seasonal high water table, can be installed to achieve the specified vertical separation distances.
- 8) Sizing of a seepage system in fill soil.
 - A) The least permeable soil profile between the top of the gravel, gravelless pipe, or chamber system and the limiting layer shall be used to determine the size of the subsurface seepage system.

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- B) The use of fill for installing subsurface seepage systems shall not be approved for lots platted after March 15, 1996.
 - C) Fill soils may be used to cover a private sewage disposal system, provided that no part of the system is located in the fill and the fill material is at least equal to or better than the original soil or meets the requirements in subsection (a)(9) of this Section.
- 9) Soil criteria for use of fill for subsurface seepage systems.
- A) Soils to be utilized for fill shall be identified by a soil classifier or licensed professional engineer and a report submitted to the Department or local authority. The report shall contain specific information on the fill soil, including location, depth, permeability, and texture. Soils that can be used as fill are those identified in Appendix A, Illustration M of this Part as 2A, 2K, 3A, 3B, 3C, 3K, 3L, 4B and 4K (Design Group II, III and IV).
 - B) In addition to the above requirements, fill soil shall not contain extraneous material such as tires, concrete, brick, reinforcing bar, demolition material, etc.
 - C) All of the following conditions shall be met for a subsurface seepage system to be installed in fill.
 - i) Satisfactory original soil shall be at least 3 feet above bedrock.
 - ii) A maximum of 2 feet of fill soil shall be used.
 - iii) Fill shall not be placed on original soil with a slope greater than 10%.
 - iv) The fill shall be placed at the site so that a minimum of compaction occurs, and the fill shall be allowed to settle undisturbed for a period of at least 12 months. Soils in Design Group II, when used for fill, shall not be required to settle for a period of at least 12 months.

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- v) After the fill has been settled, a percolation test shall be conducted in accordance with the procedure outlined in Appendix A₂, Illustration G of this Part₂, and a percolation rate of not greater than 270 minutes/6 inch fall or less than 60 minutes/6 inch fall shall be achieved.
- 10) Site Preparation for use of fill soil.
- A) Excess vegetation shall be cut and removed. The site shall be plowed with a mold board plow 7 to 8 inches deep with the plowing done perpendicular to the slope. It shall not be done with the furrow running up and down the slope. Chisel plowing may be used in place of mold board. Roto-tilling is prohibited.
 - B) Once the site is plowed, all traffic must be kept off the site. The fill material can be deposited on the top with a backhoe or pushed on from the side, preferably the upslope side, using a track type tractor, keeping 6 inches of fill beneath the tracks. At no time shall ruts be made in the plowed area. The fill shall be placed immediately after site preparation to avoid the possibility of precipitation falling on the plowed area.
 - C) Traffic on the downslope side of the fill area shall be minimal to reduce compaction. All work shall be performed from the ends and upslope side. Compaction of the natural soil downslope will reduce the lateral movement of the effluent.
 - D) The fill shall not be placed on frozen ground or when the soil is wet. Moisture content of the soil is very important when filling. Site preparation shall not take place when the soil is too wet. To check moisture content, a soil sample may be taken from the plow layer (7 to 8 inches) and rolled ~~roll it~~ between the palms of the hands. If the soil rolls into a ribbon, it is too wet to prepare. If the soil crumbles, site preparation can then proceed.
- b) Gravel Seepage Field Requirements.
- 1) Bedding Material. The bedding material shall be clean gravel or clean stone that is free of mud, silt, or clay, with particle size ranging from $\frac{3}{4}$ inch minimum to 4 inches maximum. The bedding material shall extend

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the full width of the trench and to a depth of at least 6 inches below the bottom of the distribution line. The bedding material shall extend at least 2 inches above the top of the distribution line.

- 2) Distribution Lines. Distribution lines shall be constructed of materials as approved in Section 905.20(f). The lines shall be perforated or open-joint tile. Where open joint tile is used, the tile sections shall be spaced not less than $\frac{1}{4}$ inch or more than $\frac{1}{2}$ inch apart. Perforated piping, with the exception of 8-inch or 10-inch gravelless seepage beds, shall have $\frac{1}{2}$ -to $\frac{3}{4}$ -inch diameter openings on 3- to 5-inch centers with a minimum of 2 rows. The openings in the pipe shall be placed downward.
 - 3) Separation Material. Bedding materials shall be covered by straw, newspaper, untreated building paper, geotextile fabric or other permeable or biodegradable material to support the backfill as the laying of the distribution line proceeds. Tar paper, plastic, or other impervious material shall not be used between the bedding material and the earth backfill.
 - 4) The ends of a gravel seepage field shall be looped except in serial distribution systems.
- c) Gravelless Seepage Field Requirements. In addition to Section 905.20(f), 8- or 10-inch gravelless seepage systems shall comply with the following specifications:
- 1) 8- and 10-inch inside diameter (I.D.) corrugated polyethylene tubing shall meet the requirements of ASTM F667-84, Standard Specification for Large Diameter Corrugated Polyethylene Tubing, with the following exceptions:
 - A) Perforations shall be uniformly spaced along the length of the tubing as follows: two ~~2~~ rows of holes $\frac{3}{8}$ inch in diameter for 8-inch tubing and $\frac{1}{2}$ inch in diameter for 10-inch tubing, located 120° to 140° apart along the bottom half of the tubing, each row 60° to 70° up from the bottom center line. The perforations shall be staggered so that there is at least one hole in each corrugation.
 - B) The pipe shall be marked to indicate the top of the pipe.
 - 2) All gravelless drainfield pipe shall be encased at the point of manufacture

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with a filter wrap having the following characteristics:

Physical Properties	Minimum Value
Grab Strength, lbs. (ASTM D1682-64— Reapproved 1975 or ASTM D4632-91(2003))	
Machine Direction	19
Traverse Direction	11
Burst strength, psi (ASTM D378606e1-80a)	26
Air Permeability, cfm per sq. ft. (ASTM D737-04 75, Reapproved 1980)	500

Particle Size Distribution (ASTM F662-80)
Polyethylene particles in water and alcohol
solution, coulter counter analysis, single pass:

Particle Size (Microns)	% Retained
70	80
60	68
50	56
40	40
30	22
20	5

- 3) ~~8- or 10-inch gravelless seepage trenches shall comply with the following Illustrations in all requirements that apply to standard gravel trench systems as stated in 905.~~ Appendix A unless otherwise stated in this Part.:

- A) Illustration D.
- B) Illustration H. Exhibit B.
- C) Illustration I. Exhibit C.
- D) Illustration I. Exhibit D.
- E) Illustration J. Exhibit C.
- F) Illustration J. Exhibit D.

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- G) Illustration K. Exhibit E through H.
- H) Illustration M. Exhibit A.
- 4) Bedding Material. 8 $\frac{1}{2}$ - and 10 $\frac{1}{2}$ -inch gravelless seepage systems or chamber systems may be bedded with material excavated to construct the system. The backfill material shall not contain large clods of earth, demolition material or other extraneous material.
- 5) Separation Material. No straw, newspaper or untreated building paper shall be placed between the gravelless seepage system or chamber system and the earth backfill.
- 6) Bending. 8 $\frac{1}{2}$ - inch and 10 $\frac{1}{2}$ -inch gravelless pipe shall not be bent around corners on a radius of less than 5 feet. If a sharper radius is required, a tee shall be used.
- 7) Gravelless seepage systems or chamber systems are not required to be looped. Gravelless seepage systems or chamber systems that are not looped shall be capped on the end.
- d) Serial Distribution. Serial distribution shall be used in areas where the slope of the terrain prohibits the installation of conventional subsurface seepage systems. The following criteria shall be used in the design and construction of a serial distribution system: (905.Appendix A $\frac{1}{2}$, Illustration K of this Part)
- 1) The bottom of each trench and its distribution line shall be level.
- 2) There shall be a minimum of 6 inches of earth backfill over the bedding material or chamber system or the gravelless pipe in the trenches.
- 3) The trench shall follow the ground surface contours so that variation in trench depth will be minimized.
- 4) There shall be a minimum of 5 feet of undisturbed earth between the septic tank and the nearest trench.
- 5) Adjacent trenches shall be connected with a relief line or a drop box arranged so that each trench is completely filled to the full depth of the

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gravel or gravelless pipe or chamber system before effluent flows to the succeeding trench.

- 6) The relief lines connecting the trenches shall have watertight joints and direct connections to the distribution lines in adjacent trenches. Tight joint T's and 45° ells, or a drop box arrangement shall be used to connect adjacent trenches.
 - 7) Where the relief pipe trench connects with the higher trench, it shall not be deeper than the top of the gravel or gravelless pipe or chamber system in the higher trench. Relief lines shall rest on undisturbed earth and the backfill shall be carefully tamped.
 - 8) The invert of the first relief line shall be at least 1 one inch lower than the invert of the septic tank or aerobic treatment plant outlet. (See 905.Appendix A, Illustration K of this Part.)
 - 9) All other construction features of the serial distribution field shall comply with subsections (a) through (d) of this Section.
- e) Seepage Beds. The total bottom area of the seepage bed shall be 1½ times the area specified in 905.Appendix A, Illustration H, Exhibit A or Illustration M, Exhibit A of this Part. Construction features shall conform to subsections (a) and (b) of this Section. Distribution lines shall be spaced no further than 6 feet center to center and shall be equally spaced. Lines adjacent to the bed sidewalls shall be 18 inches from the bed sidewall. (See 905.Appendix A, Illustration L of this Part.) Seepage beds shall be constructed so that construction equipment does not drive over the bottom of the bed.
- f) Chamber Systems. Chamber systems shall be sized and installed in accordance with the following:
- 1) Center-to-center spacing for chamber systems shall be in compliance with Appendix A, Illustration I, Exhibit D. The minimum center to center spacing of chambers shall be 7 feet.
 - 2) Chamber systems shall be sized in accordance with 905.Appendix A, Illustration I, Exhibit E.
 - 3) Chamber systems shall be designed to support all weight of earth backfill

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without collapsing.

- 4) Chamber systems shall be designed to prevent earth backfill from restricting flow within the chamber.

(Source: Amended at 32 Ill. Reg. _____ effective _____)

Section 905.70 Buried Sand Filters

- a) General. Buried sand filters may be used, provided that the effluent is discharged in accordance with the requirements of Section 905.110.
- b) Size. Buried sand filters shall be sized as follows:
 - 1) Residential. The sand filter surface area for residential property shall be 200 square feet per bedroom. Where a sand filter is used in conjunction with an approved aerobic treatment plant, the surface area of the sand filter may be reduced by 50 percent.
 - 2) Non-Residential. All of the following shall be met when a buried sand filter is to be installed on non-residential property.
 - A) The surface area of the sand filter shall be designed for one square foot per gallon per day for waste with an influent Biochemical Oxygen Demand (BOD) not to exceed 300 parts per million (ppm).
 - B) A sand filter with flows of 801 gallons or more per day shall have the influent effluent distributed into the sand filter by a pressure dosing system designed according to subsection (1) of this Section, and the sand filter shall be dosed 4 times per day with equal flows not to exceed the design capacity of the filter.
 - C) ~~The sand filter shall be dosed 4 times per day with equal flows not to exceed the design capacity of the filter.~~
- c) A single individual sand filter shall be used to treat flows from a wastewater source. Splitting flows prior to treatment or the use of multiple sand filters shall be prohibited unless subsurface disposal of the effluent is used. Where allowed, splitting of flows shall be done by pumps.

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- d) Minimum Size. The minimum size buried sand filter shall be designed to treat at least 100 gallons of waste per day.
- e) Sand Filter Media. The depth of filter media shall be a minimum of 24 inches. The sand shall have an effective size of 0.5 to 2.0 millimeters, and a uniformity coefficient of less than 3.5. It shall be clean and free of clay and silt.
- f) Alternate Media. Other filter media may be used in a subsurface filter provided that it meets the criteria of subsection (e) of this Section and complies with the following requirements.
- 1) Is chemically and biologically inert;
 - 2) Will support biological growth; and
 - 3) Has a hardness equivalent to, or greater than, that of sand.
- g) Filter Media Cover. The filter media shall be covered with a minimum of 10 inches of clean coarse gravel or clean stone that which is free of mud, silt or clay, ranging in size from 3/4 to 2 1/2 inches in diameter. The gravel or stone shall be covered with straw, untreated building paper, or other permeable material prior to backfilling. A minimum of 12 inches earth cover shall be provided. (See Appendix A: Illustration N of this Part.)
- h) Distribution and Collection Lines. The distribution and collection lines shall conform to the requirements for distribution lines as given in Section 905.60(b)(2). The distribution lines shall be level, shall be located 18 inches from sidewalls, and shall be spaced on 3 foot centers. There shall be solid pipe to the filter media. The collection lines shall have a slope of 6 inches per 100 feet, and one collection line shall be provided for each 10 feet of width or fraction thereof. The upper end of the collection line shall be capped.
- i) Bedding Material. The bedding material for the collection lines shall be placed as shown in Appendix A, Illustration N of this Part; and shall be clean gravel or clean stone that which is free of mud, silt or clay. The coarse gravel shall range in size from 3/4 to 2 1/2 inches in diameter, and pea gravel shall range from 1/8 to 3/8 inches in diameter. A minimum of 2 inches of coarse gravel shall be placed on the excavation before placement of the collection lines.
- j) Venting. A minimum of one vent shall be placed on the downstream end of the

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distribution lines as shown in Appendix A₂- Illustration N of this Part. These vents shall be placed as close as possible to the corners on the downstream distribution lines. The vents shall extend above the ground surface and be screened with 1/4 inch mesh screen or equivalent.

- k) Drainage. Surface drainage shall be directed away from the filter. If conditions prohibit gravity drainage of the filter effluent, a pumping chamber shall be installed. The chamber shall be constructed of a watertight, non-corrosive material and shall be provided with a removable lid, which will serve as an access for inspection, cleaning, and general maintenance. An access port or extension collar shall extend at least 6 inches above the ground surface, and the access shall have a minimum dimension of 12 inches. The chamber shall have sufficient depth and the pump controls shall be set in a manner to allow for complete drainage of the filter to eliminate any ponding of effluent within the filter. (See Section 905.125 Pumps, Pump Chambers and Ancillary Equipment.)
- l) Distribution of Effluent. Buried sand filters designed to treat non-residential property with flows of 801 gallons or more per day shall have the effluent distributed into the sand filter by pumping. The pumps, pumping chamber and ancillary equipment shall comply with Section 905.125 and the following:
- 1) Dosing volume. ~~Dosing shall not exceed 4 times a day.~~ The dosing volume is the amount of liquid pumped or siphoned during each cycle minus the amount that ~~which~~ drains back from the sand filter system after each dose.
 - 2) Pump Selection. The pump shall be a submersible pump designed for corrosive liquids.
 - 3) Siphons. Siphons can be designed where elevation exists between the sand filter and the siphon chamber. However, the siphon shall be designed to deliver the same flow rate at the same head at the distribution system as a pump system. The distribution system consisting of manifold and laterals shall be designed so that it will drain after each siphon. This shall be accomplished by placing the manifold above the laterals.

(Source: Amended at 32 Ill. Reg. _____ effective _____)

Section 905.80 Recirculating Sand Filter

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- a) General. The recirculating sand filter system (Appendix A, Illustration O of this Part) consists of a septic tank, recirculation tank, open sand filter, and flow splitter. It may be used provided the effluent is discharged in accordance with the requirements of Section 905.110.
- b) Septic Tank. The septic tank shall be sized and installed as described in Section 905.40.
- c) Recirculation Tank. The recirculation tank volume shall be 500 gallons and the tank shall be equivalent in strength and materials to the septic tank as provided in Section 905.40. No baffles are necessary. An access manhole, as described in Section 905.40(b)(7), shall be provided for pump maintenance or replacement.
- d) Sand Filter. The sand filter shall be sized at one square foot of filter surface for every 3 gallons per day of domestic sewage flow. Appendix A, Illustration P of this Part has a size chart for residences based on numbers of bedrooms. Unless otherwise stated in Appendix A, Illustration P of this Part the sizes shown are required. The filter media shall comply with requirements of Section 905.70(e) and (f) and shall be 30 inches in depth.
- e) Bedding Material. The bedding material for the collection lines shall be the same as that in a buried sand filter. The coarse gravel shall be 3/4 to 2 1/2 inch diameter and the pea gravel shall be from 1/8 to 3/8 inches diameter. A minimum of 2 inches of coarse gravel shall be placed on the excavation prior to placement of collection lines.
- f) Distribution and Collection Lines. The collection lines shall be constructed of materials as approved in Section 905.20(f) and shall be 4 inches inside diameter perforated piping laid with perforations facing downward. The distribution piping shall have an inside diameter of 1 1/2 inches. The perforated pipe shall have 1/2 to 3/4 inches diameter openings on 3 to 5 inch centers with 2 rows at 120 from each other. Distribution piping shall be spaced on 3 foot centers and shall be located a minimum of 1 1/2 feet from sidewalls.
- g) Pumps. The pump shall be a submersible pump designed for corrosive liquids and shall have a capacity of 15 to 25 gallons per minute at the 10 foot total dynamic head (TDH). The pump shall be controlled by a time clock which can be set to activate the pump at one hour or longer intervals. Pump shut-off shall be controlled by a low level float switch which allows the entire contents of the recirculation tank to be pumped during each pump cycle. A high level float

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switch shall be provided that energizes a visible and audible alarm to indicate pump failure or malfunction. (See Appendix A₂; Illustration Q of this Part.)

- h) Flow Splitter. The flow splitter shall be designed so that recirculation rates can be controlled between no recirculation and a 5 to 1 recirculation ratio. An example of one type of splitter is shown in Appendix A₂; Illustration O of this Part.

(Source: Amended at 32 Ill. Reg. _____ effective _____)

Section 905.90 Waste Stabilization Ponds

General. Waste stabilization ponds may be used if designed and constructed in accordance with the following criteria and provided the effluent is discharged in accordance with the requirements of Section 905.110 (See Appendix A₂; Illustration R of this Part as an illustration of these requirements). A septic tank sized according to 905. Appendix A₂; Illustration F of this Part or an aerobic treatment plant shall precede a waste stabilization pond.

- a) Location. A waste stabilization pond shall be located as distant as practical from residences, but in no case closer than the distances shown in Appendix A₂; Illustration D of this Part, and in an area where trees will not interfere with sunlight on the surface.
- b) Dimensions. Ponds shall have a length not exceeding 3 times the width.
- c) Capacity. When domestic sewage from a septic tank is to be discharged to the waste stabilization pond, the capacity of the pond shall be equivalent to 60 times the average daily flow. When preceded by a Class II aerobic treatment plant, the capacity of the pond shall be equivalent to 18 times the average daily flow.
- d) Depth. The wastewater depth for a waste stabilization pond shall be uniform and 3 feet to 5 feet.
- e) Freeboard. A minimum freeboard of 2 feet shall be provided.
- f) Embankments. Embankments shall be constructed of impermeable materials and shall be compacted. Embankment slopes shall be in 1 to 2 (vertical to horizontal) below the water line and 1 to 3 or flatter above the water line. The top width of the embankment shall be a minimum of 2 feet. Embankments shall be seeded or rip-rapped from the outside toe to the high water line. Perennial, low growing, spreading grasses that withstand erosion and can be kept mowed are most

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satisfactory for seeding of embankments.

- g) Inlet. The inlet line shall be placed 12 to 24 inches above the bottom of the pond at a point opposite the overflow structure and shall be supported at no greater than 10 foot intervals along its length. It shall discharge at least 10 feet from the water's edge. The inlet line shall be sloped in accordance with Section 905.20(g).
- h) Outlet. The outlet structure shall be designed to prevent the discharge of floating solids. This shall be accomplished through baffling. The baffle shall consist of a sanitary T or 90 elbow. If the 90~ elbow is used, a 1/4 inch hole shall be drilled into the top of the elbow to provide an air break. The outlet baffle shall extend 12 inches below the invert of the overflow. The outlet baffle shall be 3 to 5 feet from the embankment.
- i) Bottom. The bottom of the waste stabilization pond shall be cleared and leveled to the required elevation and shall be lined with an impermeable natural or man-made material. The pond shall be kept free of vegetation that would grow to or above the water surface.
- j) Drainage. All surface water shall be diverted away from the waste stabilization pond.

(Source: Amended at 32 Ill. Reg. _____ effective _____)

Section 905.95 Illinois Raised Filter Beds

- a) Illinois raised filter bed disposal systems shall have a filter loading rate of 4 gallons per square foot per day for residential systems of up to 1,500 GPD flows. Non-residential systems of any size or residential systems in excess of 1,500 GPD shall use a filter loading rate of 2.5 gallons per square foot per day. The system shall be designed in accordance with Appendix A, Illustration X, Exhibits A through E.
- b) An aeration batch treatment system that has been approved by NSF in accordance with NSF Standard 40 shall be used. The aeration tank volume shall hold at least 2 times the average daily wastewater flow for residential use (including the use of a garbage disposal). Non-residential systems shall have a tank volume size of 3 times the daily wastewater flow. Multiple tanks shall be used to achieve the volume required. Multiple tanks require connection at the bottom of each tank for flow equalization.

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- c) Filter beds shall not exceed 600 square feet. If a larger area is needed, multiple beds must be used, separated by a minimum distance of 15 feet, using a common mantle. The filter beds can be placed at any point on the mantle in order to accommodate existing ground contours.
- d) The filter length shall not exceed 3 times the width.
- e) The sand filter media shall have an effective size of 0.5 to 2.0 millimeters, a uniformity coefficient of less than 3.5, and a 30 inch depth.
- f) The mantle shall be sized in accordance with the formula $A = QT/25$, where A = Mantle Area, Q = Quantity of wastewater per day, and T = Percolation time of the original soil in minutes per inch. (See Section 905, Appendix A, Illustration X, Exhibit E to convert soil investigation information to T (percolation time).)
- g) The mantle shall be at least equal to the area of the filter bed. The mantle shall not be designed for percolation rates that exceed 120 minutes per inch.
- h) The mantle area is to be cut into original soil to a depth of 6 inches and back-filled with 12 inches of torpedo sand that is graded as FA1-FA8 in accordance with Standard Specifications for Road and Bridge Construction, adopted January 1, 2002 by the Illinois Department of Transportation.
- i) The slope of the bottom of the mantle shall be level, plus or minus 1 inch. The slope of the earth sidewalls of the filter shall be a maximum of 3 feet horizontal to 1 foot vertical.
- j) The mantle area must be at least 12 inches deep. If the maximum high groundwater table is less than 6 inches from the bottom of the filter bed, additional torpedo sand must be used to increase the isolation distance between the bottom of the filter bed and the high groundwater table to at least 6 inches. Other separation distances (e.g., well, property line, etc.) shall be measured from the toe of the filter bed.
- k) The distribution piping (4 inch perforated pipe) shall be placed level to 15 inch centers in 12 inches of $\frac{3}{4}$ inch stone.
- l) Sod shall be placed over the filter beds and mantle.

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(Source: Amended at 32 Ill. Reg. _____ effective _____)

Section 905.100 Aerobic Treatment Plants and NSF International/ANSI Standard 40 Wastewater Treatment Systems

- a) General. Aerobic treatment plants and NSF International/ANSI Standard 40 wastewater treatment systems shall be tested and listed by NSF International or a laboratory approved by ANSI and certified compliant with the International Organization for Standardization (ISO)/International Electrotechnical Commission (IEC) Guide 65 to determine compliance with the requirements of ANSI/NSF International/ANSI Standard 40, Residential Wastewater Treatment Systems, August 1, 2005 July 12, 2000. Standard 40 is a standard that covers an organized and coordinated system of components that functions to treat wastewater generated by individual residences. This Part shall allow approved aerobic treatment plants and NSF International/ANSI Standard 40 wastewater treatment systems to serve residential property that is occupied on a year-round or full-time basis. Aerobic treatment plants shall not be used to serve residential property that is used as a seasonal, weekend or part-time residence.
- b) Class II Effluent. Aerobic treatment ~~systems~~ plants listed by NSF International or a laboratory approved by ANSI to determine compliance with ANSI/NSF International/ANSI Standard 40 for Class II effluent shall discharge to one of the following:
 - 1) A subsurface seepage system designed and constructed in accordance with the requirements of Section 905.60.
 - 2) A sand filter designed and constructed in accordance with the requirements of Section 905.70 or 905.80.
 - 3) A waste stabilization pond designed and constructed in accordance with the requirements of Section 905.90.
- c) Class I Effluent. NSF International/ANSI Standard 40 wastewater treatment systems ~~Aerobic treatment plants~~ listed by NSF International or a laboratory approved by ANSI to determine compliance with ANSI/NSF International/ANSI Standard 40 for Class I effluent shall discharge to one of the following:
 - 1) A subsurface seepage field designed and constructed to be at least $\frac{2}{3}$ the size determined necessary by Section 905.60. The subsurface system shall

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be installed as shallow as possible while maintaining a minimum of 6 inches of cover and if feasible at least 1 foot above the shallowest limiting layer; or

- 2) ~~A To~~ a surface discharge in accordance with Section 905.110.
- d) Sizing. Aerobic treatment plants that are listed by NSF International or a laboratory approved by ANSI to determine compliance with ~~ANSI/NSF~~ International/ANSI Standard 40 as Class I and rated at 500 gallons per day will be allowed for the treatment of sewage from residential property having up to and including 4 bedrooms. Other aerobic treatment plants that are listed by NSF International or a laboratory approved by ANSI to determine compliance with ~~ANSI/NSF~~ International/ANSI Standard 40 as Class I shall be sized as follows:

Bedrooms	Minimum Rated Treatment Capacity-Gallons
1	400
2	400
3	500
4	500
5	750
6	900
7	1000
8	1200
9	1350
10	1500

- e) Installation. All components of aerobic treatment plants shall be installed at the time of the original installation. If this is not possible, a solid end cap shall be securely placed over the end of the discharge line until the system can be completed. This will prevent the discharge of raw sewage to the ground surface.
- f) Accessibility for inspection and maintenance. The aerobic treatment plants or NSF International/ANSI Standard 40 wastewater treatment systems plant shall be equipped with one or more grade-level access manholes having a minimum inside dimension of 18 inches, which extends a minimum of 3 inches above the ground surface. The manhole shall be equipped with a lid that is secured in compliance with Section 5.7.2 of NSF International/ANSI Standard 40. These manholes shall be located to permit periodic physical inspection and maintenance of all

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compartments and component parts. Component parts include submerged bearings, moving parts, tubes, intakes, slots, filters, and other devices. ~~Grade level access manholes shall be installed in a manner to prohibit the entry of soil, water and dirt into the unit.~~

- g) Service. Devices falling within the scope of Standard 40 require periodic maintenance to achieve performance consistent with demonstrated capabilities. Implicit in Standard 40 is the recognition that assured professional service is imperative. Standard 40 and this Part require a ~~two-~~ 2 year service policy to be provided as part of the initial service agreement. (Note: The following initial service policy includes items not included in the NSF International/ANSI Standard 40 service policy.)
- 1) Initial service policy: A ~~two-~~ 2 year policy shall be furnished to the purchaser by the private sewage disposal installation contractor through the manufacturer or the distributor of the aerobic treatment unit. This policy shall provide:
 - A) Four inspection/service calls, at least one every ~~six~~ 6 months, which includes inspection, adjustment, and servicing of the mechanical and the applicable component parts to ensure proper function;
 - B) For an effluent quality inspection consisting of a visual check for color, turbidity, scum overflow, and an examination for odors;
 - C) For improper operation ~~that which~~ cannot be corrected at that time, to be reported to the owner immediately. This shall be followed with a written report that includes the date for the condition to be corrected.
 - 2) Continuing service policy: Each manufacturer shall make available for purchase by the owner a continuing service policy with terms equal to the initial service policy.
 - 3) Standby parts: Standby mechanical and electrical component parts shall be stocked by the local distributor for use when the plant's mechanical or electrical components must be removed from the site for repairs.
 - 4) Component parts: The mechanical and electrical component parts shall be

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guaranteed against any defects in materials and workmanship as warranted.

- 5) Service: Service shall be available within two ~~2~~ working days following a request.
- 6) Owner's manual: An owner's manual shall be provided by the manufacturer with each unit. The manual shall include the following information:
 - A) Model numbers.
 - B) Functional description of unit, including a statement of minimum performance requirements as established by test.
 - C) Design and flow diagrams.
 - D) Warranty.
 - E) Replacement policy and service policy.
 - F) Installation instructions.
 - G) Detailed operation and maintenance requirements (including user responsibility, parts and service).
 - H) Rated service flow in GPM (gallons per minute) or GPD (gallons per day).
 - I) Energy source and energy required for proper operation of the plant.
 - J) Specification of models tested under ~~ANSI~~NSF International/ANSI Standard 40.
- 7) Service label: A clearly visible, permanently attached label or plate giving instructions for obtaining service shall be placed at the audible and visual alarm.
- 8) Responsibility of property owner: The property owner shall be

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responsible for maintaining and operating the plant in accordance with this Part and the manufacturer's specifications.

- h) Operation. Aerobic treatment plants and NSF International/ANSI Standard 40 wastewater treatment systems shall produce an effluent meeting the physical, chemical and biological requirements of Section 905.110. Under normal operation and in the event of an electrical or mechanical failure or other performance failure or malfunction, the design and construction of the aerobic treatment plant or NSF International/ANSI Standard 40 wastewater treatment systems shall prevent the discharge of wastewater from any opening that is not part of the designed flow path of the entire treatment process and shall prevent the discharge of wastewater that is not in compliance with Section 905.110.
- i) Maintenance. In the event that a routine service call indicates an electrical, mechanical or performance failure or malfunction or if routine laboratory test results indicate improper treatment, the property owner shall immediately take action to bring the aerobic treatment plant or NSF International/ANSI Standard 40 wastewater treatment system into compliance with this Part.
- j) Non-residential use. Aerobic treatment plants and NSF International/ANSI Standard 40 wastewater treatment systems that are listed by NSF International or a laboratory approved by ANSI to determine compliance with ANSI/NSF International/ANSI Standard 40 as Class I will be considered for use to serve a non-residential property provided all of the following are met:
 - 1) Total daily flows from the wastewater source into the plant are at least 75% of the rated hydraulic capacity and do not exceed the rated hydraulic capacity of the plant.
 - 2) Wastewater influent shall not exceed the manufacturer's design specifications for BOD5 loading as established by NSF International or a laboratory approved by ANSI to determine compliance with ANSI/NSF International/ANSI Standard 40 during testing of the plant.
 - 3) Hourly flows from the wastewater source into the plant are less than or equal to the treatment capacity of the plant divided by 24. This may require the installation of a flow equalization device.
 - 4) A buried sand filter sized with a surface area equal to 2 gallons per square foot per day and dosed at least once but not more than 4 times per day

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shall immediately follow the aerobic treatment plant.

- k) ~~Splitting of flows Any wastewater source shall be served by a single individual aerobic treatment plant.~~ Splitting of flows from a wastewater source or the use of multiple aerobic treatment plants or NSF International/ANSI Standard 40 wastewater treatment systems shall be prohibited unless subsurface disposal of the effluent is used. Where allowed, splitting of flows shall be done by pumps.
- l) Private sewage disposal installation contractors or homeowners who maintain or service aerobic treatment plants and NSF International/ANSI Standard 40 wastewater treatment systems shall be required to maintain the integrity of the NSF International seal or the seal of a laboratory approved by ANSI to determine compliance with ~~ANSI/NSF International/ANSI Standard 40~~. Only component parts approved for use in an individual plant may be used. No design changes or component part changes may be made that will void the NSF International seal or the seal of a laboratory approved by ANSI to determine compliance with ~~ANSI/NSF International/ANSI Standard 40~~. Any person who voids the NSF International seal or the seal of a laboratory approved by ANSI to determine compliance with ~~ANSI/NSF International/ANSI Standard 40~~ shall be responsible for repairing the plant so it can bear the NSF seal or the seal of a laboratory approved by ANSI to determine compliance with ANSI/NSF Standard 40 or shall replace the plant with an approved private sewage disposal system.

(Source: Amended at 32 Ill. Reg. _____ effective _____)

Section 905.110 Effluent Discharges

- a) General. Buried sand filters, recirculating sand filters, waste stabilization ponds, and aerobic treatment plants and NSF International/ANSI Standard 40 wastewater treatment systems listed by NSF International/ANSI for Class I effluent (See Section 905.100(a) and (c)) may be discharged to any one of the following three 3 options:
- 1) A receiving stream, river, lake, or pond ~~that which~~ provides greater than a five 5 to one 1 dilution of the effluent, based on the seven 7 day, 10-year low flow rate. A discharge within 10 feet of the above shall be considered to be a discharge to the receiving body of water. Discharges greater than 10 feet from the receiving body of water shall comply with subsection (a)(2) or (3) of this Section. Discharges to a lake or pond shall be limited to 2 two discharges per surface acre of water. More than two 2 discharges

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may occur per individual surface acre of water; however, the total number of discharges to total surface acres of water shall not exceed a ratio of two ~~2~~ to one ~~4~~. An example of this is as follows: In a 20-acre lake, several discharges may enter the lake in a ½-acre cove; however, the total discharges entering the lake would be limited to 40. Where discharges are not equally distributed around a lake or pond, the Department or local authority shall be consulted to assure that nuisance conditions are not created.

- ~~2)~~ ~~A common collector provided that the collector does not discharge within one mile upstream from a public water supply intake, public bathing beach, or to any public use area. A public use area is any area which is frequently used by the public. Examples of a public use area are playgrounds and picnic areas. Common collectors used to carry treated effluent for 2 or more discharging systems with a combined design flow of less than 1500 gallons per day shall be constructed of materials as listed in Appendix A: Illustration C of this Part, and shall discharge in accordance with subsections (a)(1) and (3) of this Section. If the flow from any number of discharging systems is combined and exceeds 1500 gallons per day, then the owner of the property shall provide a copy of the construction permit obtained in accordance with 35 Ill. Adm. Code 309.202(a) and (b) and a National Pollutant Discharge Elimination System (NPDES) permit issued by the Illinois Environmental Protection Agency to the Department or local authority to demonstrate that the effluent from this private sewage disposal system can discharge to this location.~~
- ~~2~~ 3) The ground surface, where the discharge points of private sewage disposal systems with surface discharges does not exceed an average of one per acre and the effluent does not pond or create a nuisance condition.
- 3) A subsurface seepage field designed and constructed to be at least two-thirds the size determined necessary by Section 905.60. The subsurface system needs to be installed as shallow as possible while maintaining a minimum of six inches of cover and if feasible at least 1 foot above the shallowest limiting layer.
- b) Whenever a subdivision is platted that does not provide private sewage disposal systems in compliance with Section 905.60 or subsection (a) of this Section, then a sewage system in compliance with 35 Ill. Adm. Code 301 shall be provided.

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- c) Where lots have been platted prior to March 15, 1996, the applicant for plan approval or local authority approval may apply for a variance to this Section in accordance with the provisions of Section 905.20(1).
- d) Effluent Limitations. Standards:
- 1) After March 1, 2008, the owner(s) of a new, repaired, renovated or replaced surface discharging private sewage disposal system that is required to obtain a National Pollutant Discharge Elimination System (NPDES) Permit shall comply with all requirements and effluent limitations of the permit issued for the surface discharging private sewage disposal system. Surface discharging private sewage disposal systems that are not required to obtain an NPDES Permit shall not exceed the following effluent standards: All surface discharges from private sewage disposal systems shall comply with United States Environmental Protection Agency Secondary Treatment Guidelines for BOD5 and Suspended Solids:
- A) The system shall comply with NSF International/ANSI Standard 40, Section 8.5.2.1.1 for carbonaceous five-day biochemical oxygen demand (CBODs) and Section 8.5.2.1.2 for total suspended solids (TSS).
BOD5
- i) Arithmetic mean of all effluent samples collected in a period of 30 consecutive days; 30 mg/l (milligrams per liter) and 85 percent removal.
- ii) Arithmetic mean of all effluent samples collected in a period of 7 consecutive days; 45 mg/l.
- B) Suspended Solids:
- i) Arithmetic mean of all effluent samples collected in a period of 30 consecutive days; 30 mg/l and 85 percent removal.
- ii) Arithmetic mean of all effluent samples collected in a period of 7 consecutive days; 45 mg/l.

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- ~~B~~C) No effluent shall contain settleable solids.
- ~~C~~D) Color, odor, and turbidity shall ~~must~~ be reduced to below discernable levels.
- ~~D~~E) No effluent shall contain floating debris, visible oil, grease, scum, or sludge solids.
- ~~E~~F) ~~Fecal A-fecal~~ coliform bacteria concentration shall not exceed ~~exceeding~~ 400 organisms per 100 ml (milliliter) ~~except where chlorination is not required.~~
- F) Sample Ports. After March 1, 2008, any surface discharging system installed, repaired, renovated or replaced shall have a sample port or free fall discharge of at least 12 inches located after the disinfection component for all surface discharging systems.
- G) After March 1, 2008, effluent-receiving trenches shall be required for all systems designed to have a surface discharge of treated effluent. The effluent-receiving trenches shall be designed in accordance with Section 905.60 and Appendix A. Illustration Y, Exhibits A and B, except for the minimum separation to the limiting layer required by Section 905, Appendix A, Illustration H, and Illustration M. Exhibit A. Effluent receiving trenches shall be installed as shallow as possible while maintaining a minimum of 6 inches of cover and if feasible at least 1 foot above the shallowest limiting layer.
- H) Any system designed to have a surface discharge of treated effluent, that is installed, renovated or replaced after March 1, 2008, shall not be connected to a common collector.
- I) A surface discharging system shall not discharge to a roadside ditch, as stipulated in 605 ILCS 5/9-123, Illinois Highway Code.

- 2) Samples shall be analyzed in accordance with the "Standard Methods for the Examination of Water and Wastewater".

(Source: Amended at 32 Ill. Reg. _____ effective _____)

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Section 905.120 Disinfection

- a) As of March 1, 2008, the effluent from any new, repaired or replaced private sewage disposal system that is designed and approved to have a discharge point shall be disinfected prior to discharge. ~~General. Surface discharges shall be disinfected with a chlorine solution under the following conditions:~~
- 1) ~~When the effluent is discharged to the ground surface and the effluent leaves the property.~~
 - 2) ~~When an individual effluent or the effluent from a common collector is discharged to a pond, lake, or stream in which swimming, water skiing, or other water contact recreation occurs.~~
- b) Chlorine Feeders. Chlorination equipment shall have a means of removal of solids. Appendix A, Illustration S of this Part provides an example of a typical chlorine feeder. All chlorine feeders shall meet the requirements of Appendix A, Illustration S of this Part. Other feeders ~~that~~ which meet the requirement of this Section are also acceptable.
- c) Chlorine Contact Tanks. Chlorine contact tanks shall be baffled and shall provide a contact time of at least 30 minutes based on ~~two and one half~~ 2 1/2 times the average flow. The minimum contact tank capacity shall be 30 gallons. Access to the distribution feeder shall extend to the ground surface.
- d) ~~Sample Port. A sampling port at least 4 inches in diameter shall be provided on the effluent line or into the chlorine contact tank, unless a free fall discharge from the system is easily accessible within 200 feet of the system.~~
- de) Chlorine Residual. A final effluent-free chlorine residual of 0.2 to 1.5 mg/l shall be maintained.
- ef) Chlorine products used for the disinfection of treated wastewater effluent shall be used according to the product's labeling.
- f) After March 1, 2008, any disinfection process or equipment that does not meet the requirements of NSF International/ANSI Standard 46, Section 11 or does not provide proper disinfection as determined by adequate third party testing will not be approved for installation.

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(Source: Amended at 32 Ill. Reg. _____ effective _____)

Section 905.125 Pumps, Pumping/Dosing Chambers and Ancillary Equipment

- a) Pumps shall meet the following requirements:
- 1) The pump shall be submersible.
 - 2) The pump shall be designed to handle wastewater and a minimum of 1/2 inch diameter solids.
 - 3) The pump shall be capable of delivering the required flow at the design total dynamic head. The discharge pipe shall be the same size or larger than the discharge of the pump.
 - 4) The pump shall be constructed of corrosion resistant materials.
 - 5) Performance curves and specification sheets indicating that the above criteria have been met shall be submitted with the plan review application when pumps are to be used in a system.
- b) Pump Chambers
- 1) Pumping Chamber. The pumping chamber shall be watertight. Watertight shall consist of sealing all joints. The pumping chamber shall be filled with water after being installed and backfilled to prevent the pumping chamber from floating out of position due to hydrostatic pressures, unless the tank is installed in dry soil.
 - 2) The volume of the pumping chamber shall be sufficient to provide the desired dosing volume, space for controls, space for setting the pump, reserve capacity malfunction and flow-back after the pump shuts off (volume of manifold and laterals).
 - 3) A reserve capacity above the active pumping volume equal to one-half day's design flow shall be provided if single pumps are used. A reserve volume is not needed if siphons or dual pumps are used.
 - 4) An access riser shall extend at least 6 inches above the ground surface.

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- 5) Dosing Volume. The dosing volume shall be at least 5 times the pipe volume of the dosing network plus provide for filling and drainback of the network. The average flow shall be used to determine the dosing volume.
 - 6) Pump and Alarm Control. The pump control device shall be adjustable so that the required dosing volume is discharged during each pumping cycle. The control system for the pumping chamber shall consist of a control for operating the pump and an alarm system to detect when the system is malfunctioning. Pump controls shall allow flexibility in adjusting the on-off depth. An example of acceptable controls is shown in Appendix A₂ Illustration Q of this Part.
 - 7) Electrical and Alarm System. A high water alarm shall be provided with audible and visual signals and a test function. The alarm shall be on a separate circuit and located in the home or facility served. The alarm control device shall be a sealed float or diaphragm switch and shall be located to activate 2 to 3 inches above the pump turn-on level or siphon activation level. After March 1, 2008, all electrical devices shall comply with Section 905.20(k).
- c) Ancillary Equipment
- 1) A quick disconnect device shall be included in the discharge piping to facilitate removal of the pump for inspection, repair, or replacement. The disconnect device shall be a threaded union, pitless adapter, or lift-out rail system.
 - 2) A corrosion resistant rope or cable of adequate strength shall be affixed to the pump to facilitate installation and removal so that personnel need not enter the chamber to disconnect the pump.
 - 3) A pump control device must be adjustable so that the desired dosing volume can be discharged during each pumping cycle. The control device may consist of one or more sealed float or diaphragm switches which may cooperate with a relay or contact. Separate control panels located outside the chamber must be protected from the weather and must provide no air path between the panel and the pump chamber.
 - 4) A check valve between the pump and the piping network shall not be allowed unless this piping system is below the frost line.

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(Source: Amended at 32 Ill. Reg. _____ effective _____)

Section 905.130 Human Waste Disposal

- a) General. Privies, portable toilets, recirculation toilets, incinerator toilets, and compost toilets are approved for private sewage disposal of human wastes. Other domestic wastes shall be disposed of in a conventional system (Section 905.30); however, the size of all components may be reduced 25 percent (except that septic tanks may not be smaller than 750 gallons). Note: Compost toilets may be used to dispose of other organic domestic wastes.
- b) Privy Construction. All privies shall be constructed and maintained in accordance with the following and Appendix A, Illustration T of this Part:
 - 1) Pit Construction. The pit shall be constructed of materials and in such a manner as to be able to endure the anticipated load and use and to withstand the local environmental conditions without deteriorating. The pit shall be constructed such that there shall be access to the pit for pumping and cleaning purposes.
 - 2) Pit Size. The pit shall have a minimum capacity of 50 cubic feet per seat.
 - 3) Floor and Seat Riser. The floor and seat riser shall be constructed of an impervious material and in a manner to exclude insects and rodents. The seat riser shall be bonded to the floor to prevent seepage through the riser onto the floor.
 - 4) Seat Cover. The seat opening shall be covered with a hinged lid that ~~which~~ forms a tight seal.
 - 5) Vent. Each pit or vault privy shall be provided with a vent to the outside that creates airflow out of the building through the vent. The vent opening shall be screened with 16 mesh screen to prevent the entry of flies and shall terminate through the roof.
 - 6) Maintenance and Abandonment. When any privy is abandoned or filled to within 18 inches of the bottom of the riser, it shall be pumped by a private sewage disposal system pumping contractor. Any abandoned privy pit shall be filled with compacted sand or soil ~~earth~~.

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- c) Vault Privy. Watertight, non-metal vaults are required where privies are used in areas where the groundwater or limestone formations are within 4 feet of the bottom of the pit. The vault shall be provided with a readily accessible cleanout that ~~which~~ prohibits the entry of rodents, insects, and surface water. (See Appendix A. Illustration T of this Part.)
- d) Septic Privy. The vault of a septic privy shall be watertight. The subsurface seepage field shall consist of a minimum of one 10-foot distribution line placed in a 2-foot wide trench constructed in accordance with Section 905.60 and Appendix A. Illustration U of this Part.
- e) Standards for the Construction and Servicing of Non-Sewered (Portable) Toilet Systems. A portable toilet is a self-contained unit equipped with a waste receiving holding container. Non-sewered toilet systems shall be constructed and maintained in the following manner:
 - 1) Rooms, buildings or shelters housing toilets shall be of solid construction, easy to clean, providing shelter and privacy. The toilet room shall be ventilated to the outside, with the vent covered with 16-mesh screen. Internal latches shall be provided to prevent inadvertent entry.
 - 2) Waste containers shall be fabricated from impervious materials such as plastic, steel, fiberglass or their equivalents. Containers shall be watertight and capable of containing the waste. Containers shall be adequate in size to be used by the number of persons anticipated without filling the container to more than half of its volume before regularly scheduled service.
 - 3) Servicing shall include removing waste from containers, recharging containers with an odor-controlling solution, installing a supply of toilet tissue based on the system's intended use, and cleaning urinals and seats. Employers and event sponsors are responsible for contracting service intervals frequent enough to ensure clean, sanitary facilities.
 - 4) Any defective or inadequate toilet unit shall be repaired or withdrawn from service by locking or removal.
 - 5) Removal of waste shall be handled in a sanitary manner by means of a vacuum hose and discharge to a leak-proof tank truck. All ports on the

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tank shall be valved and capped.

- 6) Service trucks shall have access to the toilets to be serviced.
 - 7) Disposal of waste from tank trucks shall be in accordance with Section 905.170(g).
- f) Recirculating Toilets.
- 1) Self-contained toilets ~~that which~~ treat and recirculate the flushing liquid shall be constructed of an impervious, easily cleanable material and vented to the outside air through a screened pipe. The effluent, if any, from the recirculating toilet shall discharge into a subsurface seepage field or into a disposal bag. The subsurface seepage field shall consist of a minimum of one 10-foot long distribution line placed in a 2-foot wide trench constructed in accordance with Section 905.60. The owner of a recirculating toilet shall dispose of any residual from the unit in an approved public or private sewage disposal system.
 - 2) Recirculating toilets shall comply with the requirements of the National Sanitation Foundation (NSF International/ANSI) Standard 41 and shall bear the NSF International seal.
- g) Incinerator Toilets.
- 1) Incinerator toilets shall be designed and operated to provide complete incineration of the contents without production of odors. The owner of an incinerator toilet shall maintain the toilet and dispose of the contents in accordance with Section 905.170(e).
 - 2) Incinerator toilets shall comply with the requirements of the National Sanitation Foundation (NSF International/ANSI) Standard 41 and shall bear the NSF International seal.
- h) Compost Toilets.
- 1) Compost toilets shall be designed in accordance with the manufacturer's recommendations to serve the anticipated number of persons. The owner of a compost toilet shall maintain the toilet and dispose of the contents in accordance with Section 905.170.

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- 2) Compost toilets shall comply with the requirements of the National Sanitation Foundation (NSF International/ANSI) Standard 41 and shall bear the NSF International Seal.

(Source: Amended at 32 Ill. Reg. _____ effective _____)

Section 905.140 Holding Tanks

- a) General. Holding tanks are approved for private sewage disposal only under the following circumstances:
 - 1) To serve a seasonal use; single family residence, such as a cabin used only on weekends or; short vacations, and other similar situations.
 - 2) As a temporary measure while awaiting the availability of a municipal sewer extension. This temporary condition shall not exceed one + year in length.
 - 3) As a sanitary dumping station to receive the discharge from holding facilities on recreational vehicles.
 - 4) To receive the discharge from fixtures or drains that receive waste products such as automotive grease, oils, solvents and chemicals that are not allowed to be discharged into a private sewage disposal system. These waste products shall be handled according to rules for the disposal of oil, gas and grease promulgated under the Environmental Protection Act [\[415 ILCS 5\]](#), or according to 35 Ill. Adm. Code Subtitle G, or shall be taken to an oil and gas reclamation center. Note: Also see Illinois Plumbing Code (77 Ill. Adm. Code 890.) Holding tanks to be used for applications within this Section shall be Underwriters Laboratories, Inc. (UL) certified and constructed of materials approved for gas and oil interceptors as specified in Section 890.520 of the Illinois Plumbing Code, and shall be properly anchored to prevent flotation.
- b) Approval. Approval for holding tanks shall be obtained in writing from the Department or local authority prior to installation. Such approval shall be based on compliance with this Section.
- c) Construction and Location. Holding tanks shall be designed and constructed in

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compliance with Section 905.40, "Septic Tanks", except that the outlet shall be permanently sealed. Holding tanks shall be located to comply with the requirements for "Septic Tanks or Aerobic Treatment Plants" as listed in Appendix A, Illustration D of this Part.

- d) Conversion to Conventional Private Sewage Disposal Systems. Holding tanks installed under subsection (a)(2) of this Section shall be converted to a conventional private sewage disposal system if a municipal sewer has not been extended to serve the property within one year of the original installation.

(Source: Amended at 32 Ill. Reg. _____ effective _____)

Section 905.180 Examinations for Licensure

a) Applications

- 1) Each person who desires to apply for admittance to the examination for a Private Sewage Disposal System Installation Contractor license or a Private Sewage Disposal System Pumping Contractor license shall file an application for examination on forms provided by the Department. These forms may be obtained by writing to the Illinois Department of Public Health, Division of Environmental Health.
- 2) Examination dates and locations shall be established by the Department. A completed application, a photograph of the applicant, and a fee of \$100.00 for each examination ~~25.00 shall~~ ~~must~~ be filed with the Department at least 30 days prior to the examination date.

b) Examination Requirements and Results

- 1) Installation License Examination. The examination for a Private Sewage Disposal System Installation Contractor license shall test the applicant's knowledge of the design, installation, operation, maintenance, repairing and servicing of private sewage disposal systems.
- 2) Pumping Licensing Examination. The examination for a Private Sewage Disposal System Pumping Contractor license shall test the applicant's knowledge of the pumping, hauling, and disposal of wastes removed from private sewage disposal systems.

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- 3) Individuals desiring both the installation contractor license and pumping contractor license ~~shall~~ must pass the examination for each license.
- 4) Passing Grade. The examination shall consist of questions with a combined grade value of 100 points. In order to successfully pass the examination, a grade of not less than ~~70~~ 75 ~~shall~~ must be obtained.
- 5) Failure to attend an examination. Any person who fails to notify the Department in writing by letter, fax or e-mail within two working days prior to the date of the exam and fails to attend the exam will be required to resubmit a new application and fee to be eligible to take an exam on another date. ~~Failure to Pass. Any person who fails to pass the examination shall be admitted to a subsequent regularly scheduled examination after filing a new application and fee with the Department in accordance with subsection (a) of this Section. However, persons who fail to pass the exam 2 times in a calendar year shall be required to wait at least one calendar year from the date of the last examination before taking the examination again.~~

(Source: Amended at 32 Ill. Reg. _____ effective _____)

Section 905.190 Installation Approval

- a) Plan approval shall be obtained from the Department or local authority prior to beginning any construction of a new private sewage disposal system. A new private sewage disposal system shall consist of, but not necessarily be limited to, the following:
 - 1) A system where a septic tank is replaced or where a major component of the system is removed or added. Examples of major components would be the replacement or addition of an aeration unit, recirculating sand filter, sand filter, seepage pit, seepage bed or waste stabilization pond.
 - 2) A system where the size of the absorption field is increased in size by 25% or more or where 25% or more of the existing absorption field is removed and replaced with new piping and backfill material.
- b) Submittal for approval shall be made on the forms provided by the Department or local authority. At a minimum, the necessary information ~~that which~~ which must be submitted to the Department or local authority for approval shall consist of:

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- 1) Plans or drawings to scale indicating lot size with dimensions showing the location of the system; type of system to be constructed; the dimensions and the length of lateral to be installed, showing type of backfill material, if applicable; distances to water lines, water wells, potable water storage tanks and buildings; site elevations and ground surface elevations sufficient to determine the elevation of system components and the slope of the ground surface; location of sanitary sewer, if available, within 200 feet of the property and typical cross section of the system.
 - 2) Number of bedrooms or design volume.
 - 3) Soil investigation results or percolation test results and the separation distance from the trench bottom to a limiting layer. The private sewage disposal system installation contractor or homeowner shall submit information with the plan approval application or local authority permit application that a limiting layer does not exist within the distances provided in Section 905.60(a)(7)(A) of this Part.
 - 4) Owner's name and address.
 - 5) Name and signature of applicant.
 - 6) Signature by the property owner(s) on the Installation Approval submission required by this Section for any private sewage disposal system being installed, repaired or renovated after March 1, 2008, serves as written acknowledgement that said property owner(s) are aware of, and accept the responsibility to service and maintain the private sewage disposal system in accordance with the Act and this Part.
- c) Persons who construct, install, repair or modify a private sewage disposal system shall notify the Department or local authority at least 48 hours prior to commencement of the work.
- d) If any person constructs, installs, repairs or modifies a private sewage disposal system without complying with the requirements of subsections (a) through (c) of this Section and backfills any portion of the system or covers any portion of the system with earth, cinders, gravel, shale or any other material that will prevent the Department or local authority from viewing the system to determine compliance with this Part, the property owner and/or private sewage disposal installation

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contractor shall uncover the backfilled or covered portions of the system.

- e) Contractor Responsibility. The private sewage disposal system installation contractor is responsible for the following:
 - 1) Constructing, installing, repairing, modifying or maintaining the private sewage disposal system in accordance with this Part.
 - 2) Percolation test results and the sewage disposal system that is designed and constructed using those results. Acceptance of percolation tests from other sources does not relieve the installation contractor from responsibility.
 - 3) Providing the results of soil classification information and/or percolation tests used to design a private sewage disposal system to the property owner and retaining copies of this information for at least five ~~5~~ years.
 - 4) Providing service to aerobic treatment plants at least equal to Section 905.100(g).
 - 5) Assuring compliance with all codes that may apply to the system, including the National Electrical Code.
- f) Soil Classifier Responsibility. The soil classifier or Illinois licensed professional engineer shall be responsible for the accuracy of the information from ~~in~~ soil investigations used to design private sewage disposal systems.
- g) Systems that require an Operational Permit (see Section 905.195) shall be reviewed and approved by the local health department, and the Department as necessary, prior to construction.

(Source: Amended at 32 Ill. Reg. _____ effective _____)

Section 905.195 Operational Permits

- a) The following private sewage disposal systems are required to obtain an Operational Permit:
 - 1) Those serving four or more single family residences or multi-family residences having four or more units.

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- 2) Non-residential private sewage disposal systems with a design flow of greater than 2,000 gallons a day.
- 3) Experimental use permit systems.
- b) All Operational Permits are good for a period of two years from the date [on which](#) the permit was issued and shall be renewed upon expiration.
- c) Operational Permits shall include but not be limited to the following:
 - 1) Ownership of the system:
 - 2) Date of issuance and expiration:
 - 3) Performance standards for the system:
 - 4) Frequency of maintenance:
 - 5) Procedures for emergency service or maintenance, should the system need repair and or unanticipated service outside of the regular maintenance schedule:
 - 6) Declaration by the owner of the system that all service, maintenance, repair and renovation shall be done by a licensed Private Sewage Disposal System Installation Contractor.
- d) Application for an Operational Permit shall be made on forms provided by the Department. The system shall not be put in operation until the Operational Permit has been issued.
- e) If the Department, at any time, [has](#) determined that any portion of the standards established within the Operation Permit have been violated, the violation shall be corrected immediately and the system shall be repaired, renovated or replaced.
- f) When service, maintenance or minor repair has been conducted on the system, the Private Sewage Disposal System Contractor or Private Sewage Disposal System Pumping Contractor shall notify the Department within 14 days. The notification shall be submitted on forms provided and/or approved by the Department and shall illustrate all activities and services conducted.

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(Source: Amended at 32 Ill. Reg. _____ effective _____)

Section 905.200 Licenses and Fees

- a) An individual may obtain a license as a Private Sewage Disposal System Pumping Contractor or a Private Sewage Disposal System Installation Contractor upon successfully passing the examinations given for each, then making application on forms provided by the Department and submitting the annual license fee of \$100.00 ~~50.00~~ to the Department.
- b) *Each person who holds a currently valid plumbing license issued under the Illinois Plumbing License Law [225 ILCS 320] is not required to pay an annual license fee, but must comply with all other provisions of the Act and this Part. [Section 5(a) of the Act 225 ILCS 225/5(a)]*
- c) The fee to be paid for the annual renewal of either a Private Sewage Disposal System Pumping Contractor or a Private Sewage Disposal System Installation Contractor license shall be \$100.00 ~~50.00~~.
- d) The fee to be paid for the reinstatement of a Private Sewage Disposal System Pumping Contractor license or a Private Sewage Disposal System Installation Contractor license ~~that which~~ has expired for a period of less than 3 years shall be \$50.00 ~~20.00~~, plus all lapsed renewal fees.
- e) A license ~~that which~~ has expired for more than 3 years may be restored only by passing the written examination and paying the required fees.
- f) A person who does not obtain a license within 2 years after successfully completing the appropriate examination shall be required to file a new application and fee with the Department in accordance with Section 905.180(a) and again successfully pass the examination prior to applying for a license.
- g) *No reinstatement fee will be charged and no examination will be required of an applicant who is seeking reinstatement within two years of terminating military service, upon payment of annual license fee and submission of evidence of military service. [225 ILCS 225/5(b)]*
- h) As of March 1, 2008, all individuals licensed as a Private Sewage Disposal System Pumping Contractor or a Private Sewage Disposal System Installation

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Contractor shall be required to obtain 2 hours of continuing education, relevant to each license, every 2 years. The education courses shall be approved by the Department. The contractor shall submit the certificate of completion of the required education to the Department prior to the reissuing of the licenses.

(Source: Amended at 32 Ill. Reg. _____ effective _____)

Section 905.205 Civil Penalties and Time Allowances for Corrective Action

- a) Amount of Penalty
 - 1) The Department may assess civil fines against any person who constructs, installs, repairs, modifies or maintains a private sewage disposal system, or any person who pumps, hauls and/or disposes of wastes from a private sewage disposal system in violation of any Section of the Private Sewage Disposal Licensing Act or this Part.
 - 2) The Department shall determine the amount of the fine based upon the seriousness of the violation. The seriousness of the violation will be determined as follows:
 - A) Type A – violations considered the most grievous, which shall be grounds to assess a larger fine, shall be activities that create a health hazard, unlicensed activities and repeat violations. Examples of these activities include violations of vertical or horizontal separation distances, falsifying information on permits or reports, addition of prohibited materials to a private sewage disposal system, use of improper septage disposal methods and prohibited discharges. The amount of the fine shall not exceed \$1,000 for each violation in addition to \$100 per day for each day the violation continues.
 - B) Type B – violations relating to improper construction practices, the use of improper materials, failure to install a system according to the approved plan and pumper equipment violations shall be considered more serious. The maximum fine shall not exceed \$750 for each violation in addition to \$100 per day for each day the violation continues.
 - C) Type C – administrative violations involving paperwork, such as

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failure to obtain a permit or improper pumping truck lettering, shall be considered the least serious. The maximum fine shall not exceed \$500 for each violation, in addition to \$100 per day for each day the violation continues.

- D) For the purposes of determining a repeat violation, an initial violation means the first violation of a particular Section of the Act or this Part within the previous ~~three~~ 3 years. If the same or a similar violation (example: a violation of vertical or horizontal separation distance or septage disposal) occurs within a ~~three~~ 3 year period, it will be considered a repeat violation.
- b) Correction of Violation. Correction of violations that are considered serious health hazards as determined by the Department or local health department shall begin immediately and be completed within ~~seven~~ 7 days. Other violations shall be corrected within 30 days after notification by the Department or the local health department. An exception to this requirement may be authorized by the Department or local health department when extenuating circumstances prevent correction in a timely manner. Examples of such circumstances include weather, physical conditions that prevent construction or repair, lack of adequate materials, etc. The Department or local health department may also grant an extension of time for correction based on the type and seriousness of the violation, and demonstrated effort on the part of the violator to make progress in correcting the violation.
- c) Any violation may be referred to the State's Attorney of the county in which it occurs or to the Attorney General for prosecution.

(Source: Amended at 32 Ill. Reg. _____ effective _____)

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Section 905.APPENDIX A Illustrations and Exhibits

Section 905.ILLUSTRATION C List of Approved Plastic Pipe for Private Sewage Disposal System

TYPES OF PIPES	ASTM STANDARD	BUILDING SEWER ¹ OR COMMON COLLECTOR	SEWER LINES ¹	ALL SUBSURFACE SEEPAGE SYSTEMS
		5 ft. from building to septic-aeration tank to 5 ft. beyond the septic tank, aeration tank or distribution box	Additional treatment facilities and sand filter distribution lines and collection lines	
PVC (Type PS 46)	F789-82	x	x	x
ABS (DWV Schedule 40)	F628-0685	x	x	x
ABS (DWV Schedule 40)	D2661-06-78	x	x	x
ABS	D1527-99 (2005)-77	x	x	x
ABS (Sewer Pipe)	D2751-05-80	x ²	x ²	x ²
PVC	D1785-06-76	x	x	x
PVC (DWV Schedule 40)	D2665-07-78	x	x	x
PVC (DWV Schedule 40)	F891-04-86	x	x	x
PVC (Type PSM) (SDR 35)	D3034-06-80	x ²	x ²	x ²
PVC (Type PSP) (SDR 35)	D3033-81	x²	x²	x²
PVC (Sewer & Drain PS-50)	F891-04-86	x	x	x
PVC (Sewer & Drain PS-25)	F891-04-86	x	x	
PVC (Corrugated-Smoothwall)	F949-06-85	x	x	
PVC (Std. or Perforated)	D2729-03-80		x	x
PE (Smoothwall)	R810-07-83 AASHTO Standard M252-06854		x	x
PE (Corrugated-Perforated)	F405-0582 (Heavy Duty Only)			x
PE (Corrugated-Perforated)	F667-0684			x

x – Indicates approved use.

¹Commingling of plastic materials shall not be done within this area except through the use of proper

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adapters. (See Illinois Plumbing Code (77 Ill. Adm. Code 890).) When the building sewer is of a type of material that is different from the building drain, proper transition fittings shall be used.

²Pipe shall be SDR (Standard Dimension Ratio) 35 only.

Note: The last 2 numbers of the ASTM Standard indicate the date of the edition.

(Source: Amended at 32 Ill. Reg. _____ effective _____)

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Section 905.ILLUSTRATION D Location of Components of Private Sewage Disposal Systems

MINIMUM DISTANCE ALLOWABLE FROM^{1,2}

COMPONENT PART OF SYSTEM	Cistern ₂	Water	Lake, Stream ₂	Property Dwelling	Property Line ⁴	Artificial Drain
	Well ₅ or Suction Line from Pump To Well	Supply Line ³ Pressure	In-ground Swimming Pool or Other Body of Water			
	FEET	FEET	FEET	FEET	FEET	FEET
Building Sewer ²⁵	50	10	25	—	—	—
Septic Tank or Aerobic Treatment Plant	50	10	25	5	5	—
Distribution Box	75	10	25	10	5	—
Subsurface Seepage System	75	25	25	10	5	10
Sand Filter	75	25	15	10	5	10
Privy	75	25	25	20	5	10
Waste Stabilization Pond	75	25	25	20	5	10
Surface Discharge Effluent Line ²	50	10	—	—	5	—
Effluent Receiving Trench	75	25	15	10	5	10
<u>Treated Effluent Discharge Point⁶</u>	<u>50</u>	<u>10</u>	<u>—</u>	<u>20</u>	<u>25</u>	<u>25</u>
<u>Class V Injection Wells⁷</u>	<u>200⁸</u>	<u>25</u>	<u>25</u>	<u>10</u>	<u>5</u>	<u>10</u>

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- ¹ These distances have been determined for use in clay, silt and loam soils only. The minimum distances required for use in sand or other types of soil shall be determined for the proposed private sewage disposal system and approved by the this Department. Such approval will be given where the Department determines that the soil will provide treatment of the sewage.
- ² ~~For separation distances to closed loop wells reference 77 Ill. Adm. Code 920.180, Water Well Construction Code. The building sewer or surface discharge effluent line may be located to within 10 feet of a well or suction line from the pump to the well when cast iron pipe with mechanical joints or Schedule 40 PVC pipe with watertight joints is used for the building sewer or surface discharge effluent line.~~
- ³ See Section 905.20(d) for additional details on water line and sewer separation. ~~This includes lawn irrigation piping.~~
- ⁴ If a common area is used, the boundary of the common area shall be used.
- ⁵ The building sewer or surface discharge effluent line may be located to within 10 feet of a well or suction line from the pump to the well when cast iron pipe with mechanical joints or Schedule 40 PVC pipe with watertight joints is used for the building sewer or surface discharge effluent line.
- ⁶ Any surface discharging system installed, repaired or renovated after March 1, 2008.
- ⁷ Illinois Environmental Protection Agency (IEPA), Class V Injection Wells are defined in 35 Ill. Adm. Code 704.105.
- ⁸ A lesser separation distance may be obtained with approval or a waiver from IEPA.

(Source: Amended at 32 Ill. Reg. _____ effective _____)

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Section 905.APPENDIX A Illustrations and Exhibits

Section 905.ILLUSTRATION G Instructions for Conducting Percolation Tests

Percolation tests shall not be made in frozen ground or ground that has been filled in the preceding 12 months. Percolation tests shall be performed in accordance with the following procedures:

1. Number and Location of Percolation Tests. Select an area where the seepage field will be located. When digging the holes, avoid animal burrows, large root channels, etc. At least ~~three~~ 3 separate percolation tests shall be performed at the site of each proposed disposal area. The percolation test holes shall be at least 50 feet apart. At least one hole shall be located at the lowest elevation of the proposed absorption field area. The ~~two~~ 2 holes with the highest results shall be used to determine percolation rate.
2. Depth of Percolation Test Hole. Dig or bore the holes with horizontal dimensions approximately 4 to 6 inches in diameter to the depth of the proposed seepage field or seepage bed.
3. Preparation of Test Hole.
 - a) Carefully pick the bottom and sides of the hole with a knife blade or sharp pointed instrument to remove smeared or smoothed soil and to provide a natural soil interface into which water may percolate.
 - b) Remove all loose material from the hole.
 - c) Add 2 inches of coarse gravel to protect the bottom from scouring and sediment. A removable hardware cloth screen to line the lower part of the hole also helps prevent sloughing of the hole sides during testing.
4. Saturation and Swelling of Soil: It is important to distinguish between saturation and swelling. Saturation means the void spaces between soil particles are full of water. This can be accomplished in a very short period of time. Swelling is caused by the intrusion of water into the individual soil particle. This is a slow process, especially in a clay type soil and is the reason for requiring a prolonged soaking period.

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- a) On the day prior to conducting the percolation test, carefully fill the hole with water and keep it full for at least four 4 hours. The percolation test shall be conducted on the day following this presoaking at least 18 hours after presoaking is completed but prior to 30 hours after presoaking is completed. Cover the hole during this 18-30 hour waiting period. In sandy soils with greater than 70% sand and less than 15% clay (sand and loamy sand), after the four 4 hour presoak, a percolation test may be attempted without the 18 hour waiting period. If the percolation test results are greater than 45 minutes for a 6 inch drop in water, the test must be repeated after the 18 hour waiting period. If the percolation test results are 45 minutes or less, the percolation rate shall be used to size the system.
 - b) On the day of conducting the percolation test, carefully fill the hole with water to 12 inches above the gravel.
 - c) Allow the water level to drop to a point 6 inches above the gravel. If the water does not fall from 12 inches to 6 inches in six 6 hours, the percolation test is terminated and an alternate system is required.
 - d) Measure the last 6 inch drop in water level at thirty minute intervals until all the water has seeped away. Warning: Under no conditions shall measurements be taken from water filled to the top of the hole or on water 12 inches deep in the hole. Such results are completely invalid and will not be accepted. Results from the last 6 inches of drop in water are the only results that will be accepted.
5. Recording of Results. Record results of all tests as the total minutes required for the last 6 inches of seepage. If the last 6 inches of water has not seeped away at the end of six 6 hours, the soil must be considered unsuitable for seepage field disposal and the appropriate statement marked on the results form. If there is more than a 30 minute difference between the highest two 2 percolation tests, use the larger result or perform additional percolation tests.
 6. Calculating the Percolation Rate. Add the total minutes required for the last 6 inches of water to fall from the two 2 holes with the highest result and divide by two 2. If the average is less than 60 minutes, use the percolation rate of 60 minutes. If the average is greater than 60 minutes, refer to Section 905. Appendix A: Illustration H of this Part. Locate in the first column (Time (minutes) required for last 6 inches of water to fall) where the highest two 2 hole average fits and use the next highest result as the percolation rate for sizing and design. An example

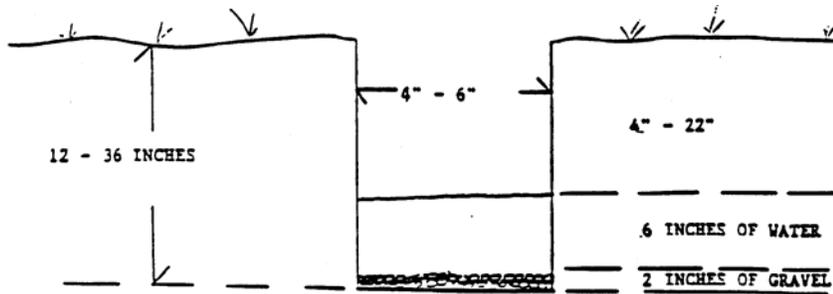
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of this procedure is as follows: If three 3 percolation tests are conducted with results of 120 minutes, 140 minutes, and 155 minutes, the highest two 2 hole average would be $(140 + 155)/2$ or 147.5 minutes. Looking at Section 905. Appendix A: Illustration H of this Part, the next highest result would be 150 minutes. The 150 minute rate would be used to size and design the subsurface seepage system.

7. Distribution of Results. The results of the percolation tests shall be given to the homeowner and shall be retained by the contractor for at least five 5 years. The percolation test data report shall be returned to the appropriate regional office or local authority.



TEST HOLE:

TEST HOLE #1

TEST HOLE #2

TEST HOLE #3

READING #	TIME (in min.)	WATER LEVEL (in inches)	TIME (in min.)	WATER LEVEL (in inches)	TIME (in min.)	WATER LEVEL (in inches)
1	0		0		0	
2	30		30		30	
3	60		60		60	
4	90		90		90	
5	120		120		120	
6	150		150		150	

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7	180	180	180
8	210	210	210
9	240	240	240
10	270	270	270
11	300	300	300
12	330	330	330
13	360	360	360

(Source: Amended at 32 Ill. Reg. _____ effective _____)

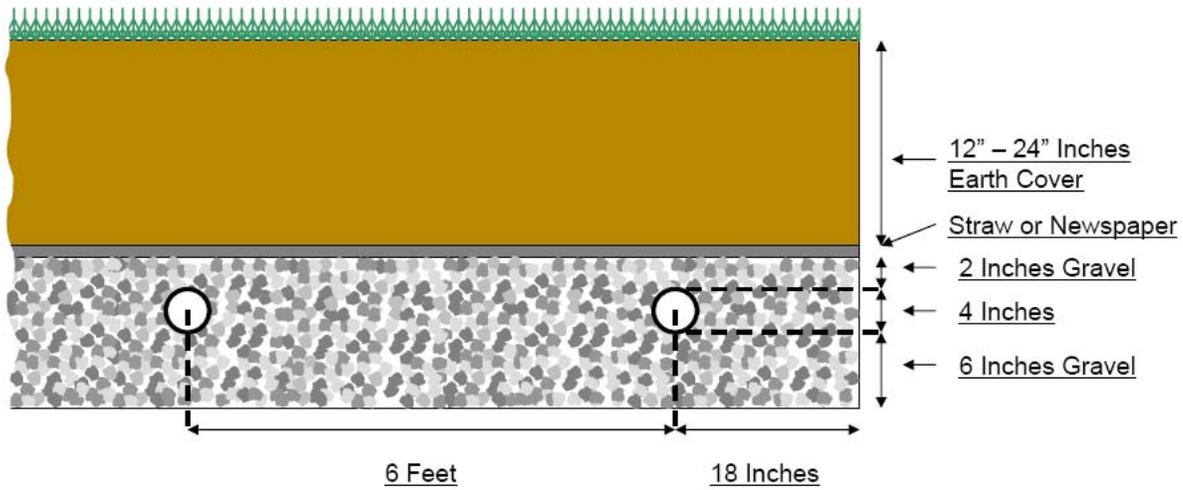
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Section 905.APPENDIX A Illustrations and Exhibits

Section 905.ILLUSTRATION L Seepage Bed

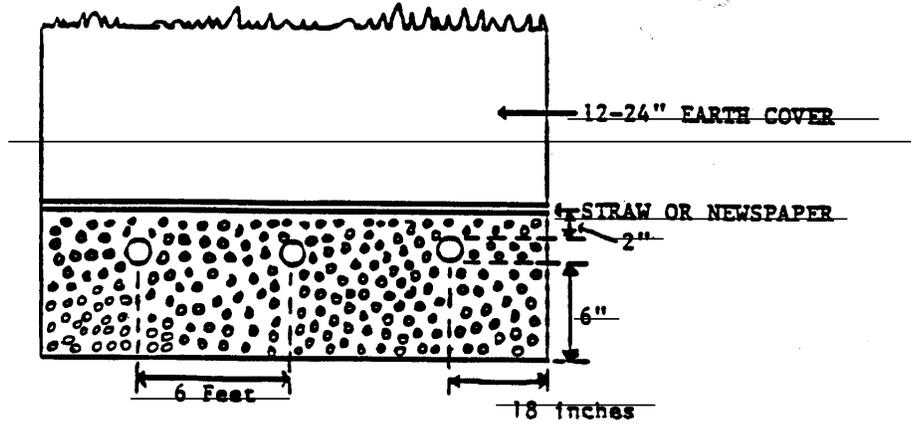
Section 905.EXHIBIT C End View



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Section 905.APPENDIX A Illustrations and Exhibits

Section 905.ILLUSTRATION M Soil Suitability for On-Site Sewage Design

Section 905.EXHIBIT A Loading Rates in Sq. Ft. Per Bedroom and Gallons/Sq. Ft/Day

Design Group	Soil Group (Most limiting Layer)	Minimum Separation To Limiting Layer ⁽¹⁾	Permeability Range	Size of System	
				Residential Reg. Absorption (ft ² /bedroom)	Institutional/Commercial Allowable Application Rate (GPD/ft ²)
I	1A	NRN/A	Very Rapid	NRN/A	NRN/A
II	2A; 2B; 2K	3 feet	Rapid	200	1.0
III	3B; 3K	3 feet	High Moderately Rapid	220	0.91
IV	3A; 3C; 3L; 4D4B; 4K	3 feet	Low Moderately Rapid	240	0.84
V	4A; 4B-4C; 4H 4D; 4L; 4M; 5B; 5D	3 feet	Very High Moderate	265	0.75
VI	4F; 4M; 5B 5C; 5E; 5K; 6F	3 feet	High Moderate	290	0.69
VII	4N; 5A; 5C 5H; 5K; 6D	2 feet	Moderate	325	0.62
VIII	4N; 5E; 5I; 5L 6A; 6B; 6E; 6H; 6G; 6K	2 feet	Low Moderate	385	0.52
IX ⁽²⁾	5EJ; 5M; 6C; 6H; 6L; 7A; 7D; 7F	2 feet	High Moderately Slow	445	0.45
X ⁽²⁾	5G; 6F; 6I; 7E; 7C; 7H 8A	2 feet	Low Moderately Slow	500	0.40
XI ⁽²⁾	5N; 6G; 6J; 6M; 7F; 7I; 7K	2 feet	Slow	740	0.27
XII ⁽²⁾	7G; 7J; 7L; 8E; 8I	2 feet	Very Slow	1000	0.20
XII ⁽²⁾	5O; 6N; 6O; 7M; 7N; 7O; 8J; 8N; 8M; 8O	NRN/A	NRN/A	NRN/A	0.00
XIII	9	SUBSURFACE DISPOSAL NOT RECOMMENDED			

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NOTES:

- (1) Limiting layers include fragipans; bedrock; compact glacial tills; seasonal high water table or other soil profile features that will materially affect the absorption of liquid from the disposal field.
- (2) Soils in this group are less than the minimum percolation rate established in Section 905. Illustration H of this Part as suitable for subsurface seepage systems.
- (3) NR = Subsurface disposal not recommended

(Source: Amended at 32 Ill. Reg. _____, effective _____)

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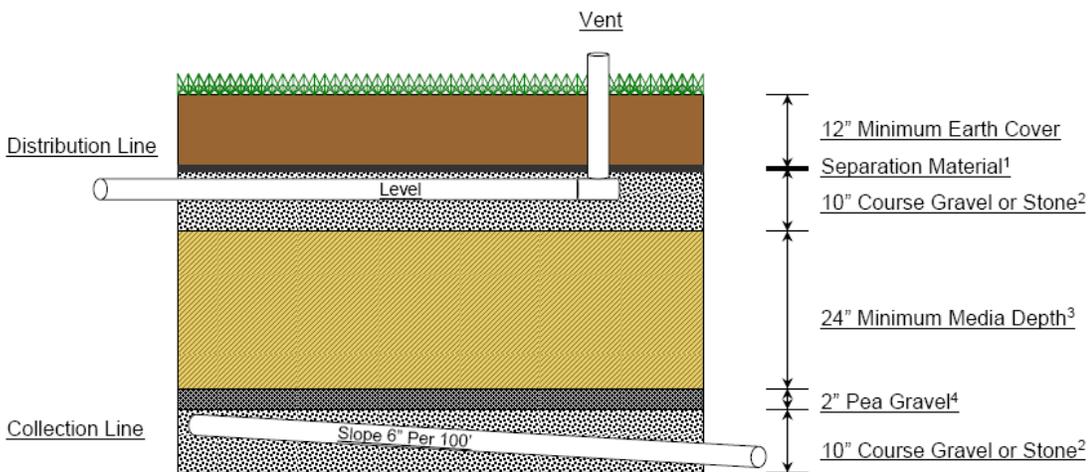
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Section 905.APPENDIX A Illustrations and Exhibits

Section 905.ILLUSTRATION N Buried Sand Filter

Section 905.EXHIBIT B Section View

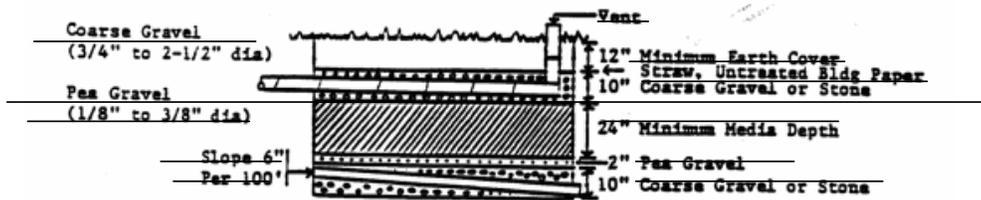


¹ Separation Materials: straw, newspaper untreated building paper, geotextile fabric or other permeable or biodegradable material to support the backfill.

² Coarse Gravel or Stone: 3/4" to 2 1/2" diameter

³ Sand Filter Media: The sand shall have an effective size of 0.5 to 2.0 millimeters, and a uniformity coefficient of less than 3.5.

⁴ Pea Gravel: 1/8" to 3/8" diameter



(Source: Amended at 32 Ill. Reg. _____, effective _____)

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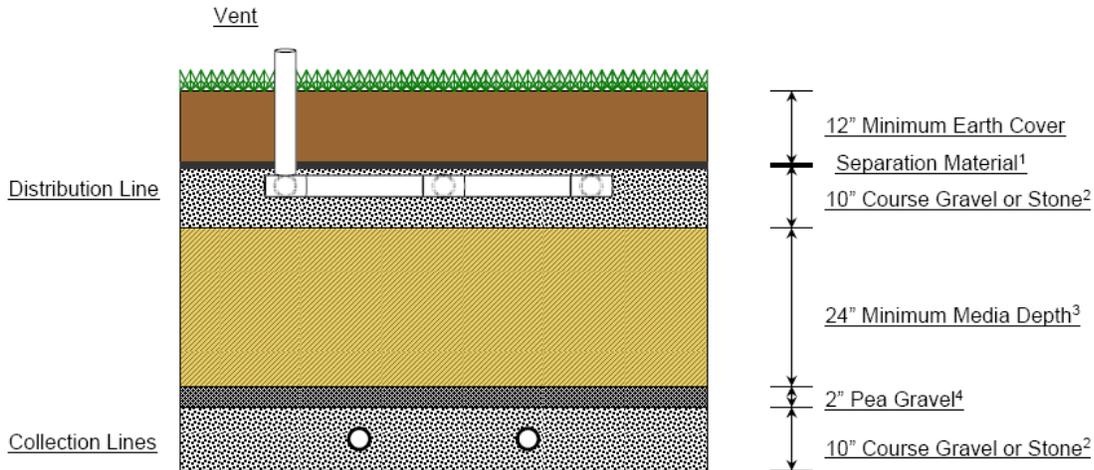
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-Section 905.APPENDIX A Illustrations and Exhibits

Section 905.ILLUSTRATION N Buried Sand Filter

Section 905.EXHIBIT C End View

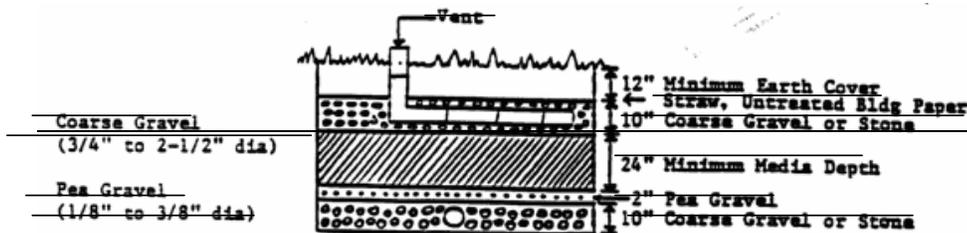


¹ Separation Materials: straw, newspaper, untreated building paper, geotextile fabric or other permeable or biodegradable material to support the backfill.

² Coarse Gravel or Stone: 3/4" to 2 1/2" diameter

³ Sand Filter Media: The sand shall have an effective size of 0.5 to 2.0 millimeters, and a uniformity coefficient of less than 3.5.

⁴ Pea Gravel: 1/8" to 3/8" diameter



(Source: Amended at 32 Ill. Reg. _____, effective _____)

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Section 905.APPENDIX A Illustrations and Exhibits

Section 905.ILLUSTRATION Y Effluent Receiving Trenches

Section 905.EXHIBIT A Effluent Receiving Trench Sizing Requirements¹

Aerobic Treatment Plants and NSF International/ANSI Standard 40 Wastewater Treatment System

<u>Bedrooms</u>	<u>Square Feet of Effluent Receiving Trench</u>
<u>1 & 2</u>	<u>300</u>
<u>3 & 4</u>	<u>600</u>
<u>5 & 6</u>	<u>800</u>
<u>7 & 8</u>	<u>1,000</u>
<u>9 & 10</u>	<u>1,200</u>

Non-residential Surface Discharging Systems Sizing Requirements

<u>Gallons Per Day</u>	<u>Square Feet of Effluent Receiving Trench</u>
<u>Less than 500</u>	<u>400</u>
<u>500 to 750</u>	<u>600</u>
<u>751 to 1,000</u>	<u>800</u>
<u>1,000 to 1,250</u>	<u>1,000</u>
<u>1,250 to 1,500</u>	<u>1,200</u>

¹ Lagoons and Sand Filters are not required to utilize Effluent Reduction Trenches.

| (Source: Added at [3432](#) Ill. Reg. _____, effective _____)

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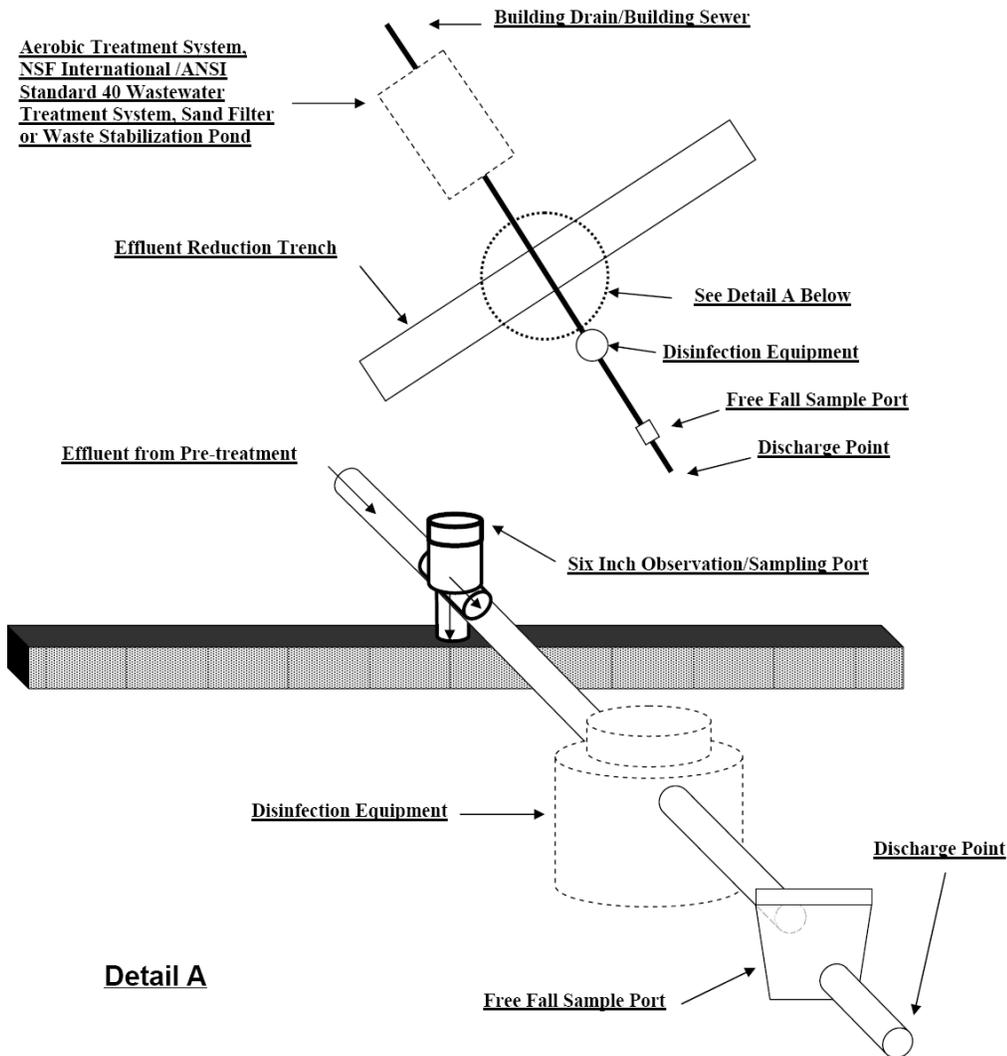
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Section 905.APPENDIX A Illustrations and Exhibits

Section 905.ILLISTRATION Y Effluent Receiving Trenches

Section 905.Exhibit B Effluent Receiving Trench Configuration



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Section 905.Appendix A Illustrations and Exhibits

Illustration Z Residential Septic Tank Maintenance Schedule

Pumping Frequency for a Residential Septic Tank or Septic Tanks Followed by a Sand Filter with a Discharge to a Subsurface Seepage System

Pumping Frequency in Years with no Garbage Grinder

TANK SIZE	Household Size or Average Number of Users							
	1	2	3	4	5	6	7	8
750	5	4.2	2.6	1.8	1.3	1	0.7	0.6
1000	5	5	3.7	2.6	2	1.5	1.2	1
1250	5	5	4.8	3.4	2.6	2.1	1.7	1.4
1500	5	5	5	4.2	3.3	2.6	2.1	1.8
1750	5	5	5	5	3.9	3.1	2.6	2.2
2000	5	5	5	5	4.5	3.7	3.1	2.6
2250	5	5	5	5	5	4.2	3.5	3
2500	5	5	5	5	5	4.8	4	4

Pumping Frequency in Years with Garbage Grinder

TANK SIZE	Household Size or Average Number of Users							
	1	2	3	4	5	6	7	8
750	5	3.3	2	1.4	1	0.8	0.5	0.4
1000	5	4.7	2.9	2	1.6	1.2	0.9	0.8
1250	5	5	3.8	2.7	2	1.6	1.3	1.1
1500	5	5	4.7	3.3	2.6	2	1.6	1.4
1750	5	5	5	4	3.1	2.4	2	1.7
2000	5	5	5	4.7	3.6	2.9	2.4	2
2250	5	5	5	5	4.1	3.3	2.8	2.4
2500	5	5	5	5	4.7	3.8	3.2	3.2

NOTE: Interpolate for tank sizes within the range provided in the tables. For instance: An 1125 gallon tank should be pumped out at a frequency half way between the frequencies provided for a 1000 gallon and a 1250 gallon tank. Contact the Department for larger tank sizes or when the number of users is greater than what is provided in the tables.

CAUTION: Pumping a tank in an area where the water table is elevated may cause the tank to float or collapse.

ILLINOIS REGISTER

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NOTICE OF PROPOSED AMENDMENTS

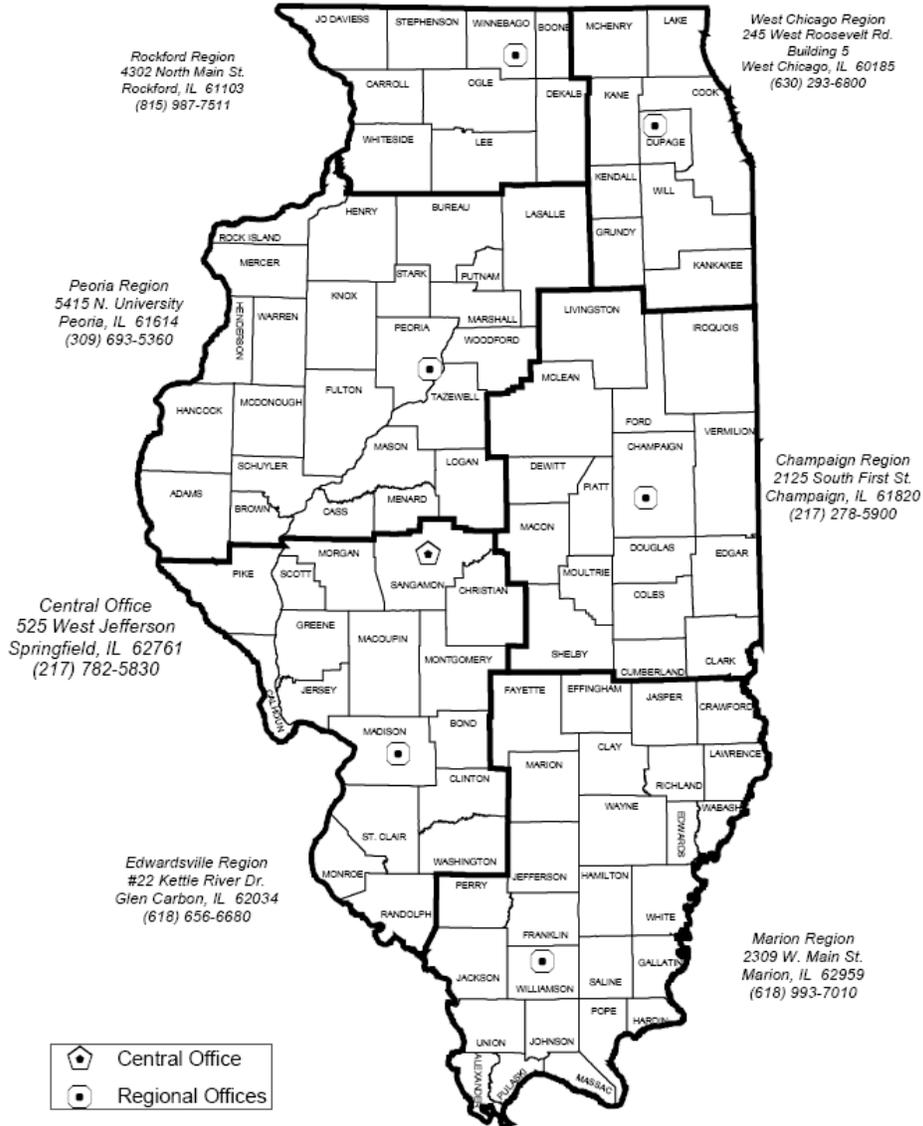
(Source: Added at 32 Ill. Reg. _____, effective _____)

ILLINOIS REGISTER

DEPARTMENT OF PUBLIC HEALTH

NOTICE OF PROPOSED AMENDMENTS

Section 905.APPENDIX B Contact Information for the Central and Regional Offices
Telephone or Address Inquiries to the Regional Office



ILLINOIS REGISTER

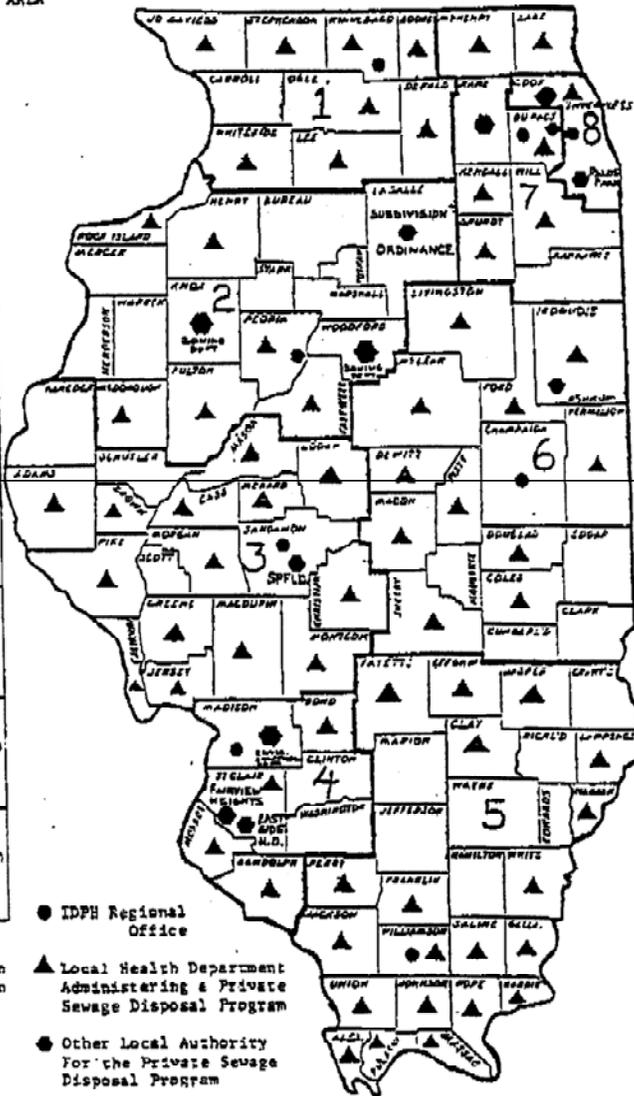
DEPARTMENT OF PUBLIC HEALTH

NOTICE OF PROPOSED AMENDMENTS

ILLINOIS DEPARTMENT OF PUBLIC HEALTH
 Division of Engineering and Sanitation
 TELEPHONE OR ADDRESS INQUIRIES TO THE
 REGIONAL OFFICE SERVING YOUR AREA

- REGION 1 - Rockford**
 Roger Ruden, R.E.
 Ill. Dept. of Public Health
 4302 N. Main Street
 Rockford, IL 61103
 Phone 615/987-7511
- REGION 2 - Peoria**
 Frank F. Alst, R.E.
 Ill. Dept. of Public Health
 5415 North University
 Peoria, IL 61614
 Phone 309/691-2200
- REGION 3 - Springfield**
 Merle L. King, R.E.
 Ill. Dept. of Public Health
 4500 S. Sixth Street Road
 Springfield, IL 62706
 Phone 217/786-6882
- REGION 4 - Edwardsville**
 Fred L. Crawford, R.E.
 Ill. Dept. of Public Health
 Cottonwood Road
 Edwardsville, IL 62025
 Phone 618/288-5761
- REGION 5 - Marion**
 Muri Teska, R.E.
 Ill. Dept. of Public Health
 2209 West Main Street
 Marion, IL 62959
 Phone 618/957-4371
- REGION 6 - Champaign**
 Mark Kuechler, R.E.
 Ill. Dept. of Public Health
 2125 South First Street
 Champaign, IL 61820
 Phone 217/353-6914
- REGION 7 - West Chicago**
 Robert Flygara, R.E.
 Ill. Dept. of Public Health
 245 Roosevelt Rd. Bldg. #5
 West Chicago, IL 60185
 Phone 312/293-6800
- REGION 8 - Berkeley**
 Paul Levin, R.E.
 Ill. Dept. of Public Health
 5813 Elm Avenue
 Berkeley, IL 60163
 Phone 312/449-2777-9, 2870

CENTRAL OFFICE
 Ill. Dept. of Public Health
 Office of Health Regulation
 Division of Eng. & San.
 535 West Jefferson Street
 Springfield, IL 62761
 Phone 217/782-5830



- IDPH Regional Office
- ▲ Local Health Department Administering a Private Sewage Disposal Program
- Other Local Authority For the Private Sewage Disposal Program

(Source: Amended at 32 Ill. Reg. _____, effective _____)