

Title 13
ON-SITE SEWAGE

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13.04 GENERAL PROVISIONS

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13.04.010 Short title. These rules and regulations shall be known as the "Board of Health On-site Sewage Regulations" and may be so cited, and are referred to herein as "this title." (R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 1 § 1, 12-19-86).

13.04.020 Declaration of purpose and policy.

A. In compliance with chapter 246-272A WAC, this title is enacted as an exercise of the Board of Health power of King County to protect and preserve the public health. Its provisions shall be liberally construed for the accomplishment of this purpose.

B. It is expressly the purpose of this title to provide for and promote the health of the general public, and not to create or otherwise establish or designate any particular class or group of persons who will or should be especially protected or benefited by the terms of this title.

C. It is the specific intent of this title to place the obligation of complying with its requirements upon the owner or operator of premises and other persons designated by this title within its scope, and no provision of or term used in this title is intended to impose any duty whatsoever upon King County or any of its officers or employees, for whom the implementation or enforcement of this title shall be discretionary and not mandatory.

D. Nothing contained in this title is intended to be nor shall be construed to create or form the basis for any liability on the part of King County, or its officers, employees or agents, for any injury or damage resulting from the failure of the owner or operator of any premises to comply with the provisions of this title, or by reason or in consequence of any act or omission in connection with the implementation or enforcement of this title on the part of King County by its officers, employees or agents. (R&R No. 08-03 § 1, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 1 § 2, 12-19-86).

13.04.030 Scope. The provisions of this title shall apply to the location, design, installation, alteration, addition, repair, relocation, replacement, maintenance, monitoring and use of all on-site sewage systems (OSS) except as specifically otherwise provided in this title. (R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 1 § 3, 12-19-86).

13.04.040 Applicability.

A. This title shall apply to all lots, parcels, and tracts not served by public sewers without regard to whether such lots, parcels or tracts may have been in existence prior to the effective date of this title.

B. The repair, addition to, or alteration of existing OSS shall be governed by this title.

C. The construction, installation, repair, addition or alteration of an OSS for which a valid application for an OSS permit was made under prior regulations shall be governed by the regulations existing at the time of the application; provided, that the permit conditions may be modified to include additional requirements of this title if the health officer determines that a threat to public health may otherwise result. However, this title shall apply if the permit was applied for more than two (2) years prior to the effective date of this title.

D. The Washington State Department of Ecology has authority and approval over:

1. Domestic or industrial wastewater under Chapter 173-240 WAC; and
2. Sewage systems using mechanical treatment, or lagoons, with ultimate design flows above 3,500 gallons per day.

E. The Washington State Department of Health has authority and approval over:

1. Systems with design flows through any common point between 3,500 to 14,500 gallons per day; and

2. Any large on-site sewage system ("LOSS") for which jurisdiction has been transferred to the Department of Health under conditions of a memorandum of agreement with the Department of Ecology.

F. The health officer has authority and approval at a minimum over:

1. Systems with design flows through any common point up to 3,500 gallons per day;
2. Any large on-site sewage system ("LOSS") for which jurisdiction has been transferred by contract to the health officer from the Department of Health.

G. Where this title conflicts with Chapter 90.48 RCW, Water Pollution Control, the requirements under those statutes apply. (R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 1 § 4, 12-19-86).

13.04.050 Connection to public sewer.

A. The owner or occupant of lands or premises located within the Urban Growth Area, as defined in the King County Comprehensive Plan, undertaking new residential or nonresidential construction, short subdivision or subdivision from which sewage will originate shall connect the construction to a public sewer if the sewer utility permits such connection. Within unincorporated King County such connection shall be in accordance with King County Code Section 13.24.136. Within incorporated cities such connection shall be in accordance with the policies of that city or the local sewer utility. The connection shall be made by connecting the building drain with an approved side sewer, and the side sewer to the public sewer.

B. For existing development located within or outside the Urban Growth Area and which is within two hundred feet of a public sewer, where an on-site sewage system is operating, the owner shall abandon the on-site sewage system in accordance with WAC 246-272A-0300 and connect the sanitary drainage system to the public sewer when the sewer utility permits such connection and when:

1. Repair, modification or replacement of the on-site sewage system is necessary, or the existing on-site sewage system has failed and an on-site sewage system fully conforming to this title cannot be designed and installed; or

2. Additional construction which in any way affects the on-site sewage system is proposed.

C. The distances set forth in subsection B. of this section shall be calculated along the shortest route in road rights-of-way and easements, consistent with the comprehensive planning and sewer extension practices of the sewer utility involved, from the existing sewer to the nearest point of the lands or premises to be served.

D. Every plumbing fixture and every sanitary drainage system not connected to a public sewer, or not required by law to be connected to a public sewer, shall be connected to an on-site sewage system. (R&R No. 08-03 § 2, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 13 § 1, 12-19-86).

13.04.054 Abandonment.

A. Persons permanently removing a septic tank, seepage pit, cesspool or other OSS wastewater tanks from service shall within thirty days:

1. Have the septage removed by an approved pumper; and
2. Remove or destroy the lid; and

3. Fill the void with compacted soil or gravel; and
 4. Report the abandonment to the health officer on a form obtained from the health officer and accompanied by the fee specified in the fee schedule.
- B. Contaminated rock, sand and gravel material from repairs to failing OSS shall be properly disposed of by either burying at an appropriate location approved by the health officer or transported to an approved sanitary landfill. The process of disposal shall be supervised by a licensed master installer. (R&R No. 08-03 § 3, 2008; R&R No. 99-01 § 2 (part), 3-19-99).

13.04.058 Introduction of non-sewage compounds and industrial wastewater prohibited.

Persons shall not introduce into an OSS:

- A. Strong bases, strong acids or organic solvents for the purpose of system cleaning.
- B. Any sewage system additive not specifically approved by the Washington State Department of Health.
- C. Waste components atypical of residential sewage.
- D. Industrial wastewater.
- E. Hazardous materials. (R&R No. 99-01 § 2 (part), 3-19-99).

13.04.060 Failure prohibited. An owner may not allow an on-site sewage system or component or side sewer to remain in a condition of failure as defined in BOH chapter 13.08. The owner must cause the system, component or side sewer to be repaired or replaced, or the property served by the system to be connected to public sewer, as applicable, in accordance with the requirements of this title. (R&R No. 08-03 § 4, 2008; R&R No. 99-01 § 2 (part), 3-19-99; R&R No. 3 Part 13 § 2, 12-19-86).

13.04.070 Domestic water supply source. No on-site sewage system may be constructed or expanded if the plumbing fixtures draining to the system are not supplied with water from an approved source. An approved water source consists of one of the following:

- A. Public water source: A public water source currently in compliance with chapter 246-290 or 246-291 WAC and BOH Title 12.
- B. Private individual well source: A private well on a lot five acres or greater in size or a lot created prior to May 18, 1972, which complies with all of the following conditions:
 1. Well location approval: Any proposed new or replacement individual private well location shall be submitted to the health officer and receive approval prior to construction of the well.
 - a. All private water system development in the urban growth area or in the rural area as defined by the King County Comprehensive Plan is subject to the provisions of King County Code Sections 13.24.140 and 13.24.138, respectively.
 - b. Proposed new initial well locations shall be accurately specified upon an OSS site design application and shall be submitted for review by the health officer in conjunction with evaluation of the proposed OSS design. If the protective well radius is within ten feet of any lot line, easement line or any source of contamination, the health officer may require the well site to be surveyed.
 - c. Application for replacement well locations shall be made on forms obtained from the health officer and shall be accompanied by a review fee as specified in the fee schedule.
 - d. The new or replacement well location shall be clearly identified at the site.
 - e. Information shall be provided as part of the well location application to include, at minimum, a completely dimensioned plot plan, drawn to a scale not smaller than one inch equals one hundred feet accurately showing the location of the proposed water well relative to property boundary lines, existing and proposed OSS components including OSS reserve area, existing and proposed structures, roads and driveways, surface water, direction of surface drainage, a designated well protection sanitary control area and any other features relevant to the siting of a water well location.
 - f. A water well site approval is valid for two years from the date of approval or until the expiration of a building permit issued by the building official for construction of the primary structure to be served by the new well, whichever period is longer.
 2. Water well protection covenant: The property owner shall establish a water well protection sanitary control area by providing a recorded protective covenant prohibiting, within a horizontal distance of not less than one hundred feet of the well, potential sources of contamination as described in BOH 12.24.010 and WAC 173-160-171.
 3. Demonstrate adequate water quantity by:
 - a. Drilling, in known or suspected areas of low production, the well and conducting a four hour pump test that demonstrates that the proposed well is capable of providing water to a residential dwelling in the amount of not less than four hundred gallons per day. This pump test may be required to be performed during the months of August, September or October at the health officer's discretion; or
 - b. Providing, in all other areas, adequate information to the satisfaction of the health officer to demonstrate the aquifer's capability to provide four hundred gallons per day. This information may

include well logs or pumping reports from neighboring wells utilizing the same aquifer. The neighboring well or wells shall be shown on a map of the surrounding area identifying both the subject property and the location of the well or wells identified as neighboring. The map shall be included with the OSS site design application submittal.

4. Demonstrate adequate water quality by submitting results of all tests taken for the following and showing:

a. Bacteriological analysis from at least two raw source water samples from the well indicating no presence of coliform bacteria; and

b. At least one chemical test for nitrate and arsenic from the well water described in table 2, WAC 246-291-170, which does not exceed the primary maximum contaminant level under WAC 246-291-170.

5. Provide a copy of well driller's report under WAC 173-160-141.

6. Construction of the well must meet Washington state Department of Ecology's construction standards under chapter 173-160 WAC.

C. A private spring on a lot five acres or greater or a lot created prior to May 18, 1972, that complies with all of the following conditions prior to application for OSS site design approval:

1. Application for an individual private spring water source shall be made on forms provided by the health officer and shall be accompanied by a fee as specified in the fee schedule.

2. The application shall include: a recorded protective covenant of no less than two hundred feet up slope and one hundred feet down slope from the spring prohibiting any potential sources of contamination as described in BOH 13.04.070 B.2., a spring location plot plan, a detailed spring construction plan, and information demonstrating acceptable water quality and quantity as specified in BOH 12.20.040 and chapter 246-291 WAC.

3. Within thirty days of receiving a complete application the health officer shall approve, deny or notify the applicant that the application is pending. Reasons for denial or pendency of the application shall be stated in writing.

D. A rainwater catchment system that serves as the only source of drinking water for a single family residence and that complies with each of the following conditions:

1. The health officer finds that requiring connection of the plumbing system to an approved public water source or to an approved private well would cause undue hardship.

2. Application for a rainwater catchment system source approval shall be submitted for review on forms provided by the health officer. The applicant shall pay to the health officer the rainwater catchment system review fee as specified in the fee schedule, payable after completion of the application review.

3. Application for a rainwater catchment system source approval shall be prepared by any one or more of the following:

a. a professional engineer authorized under a current, valid license to practice in Washington state;

b. an environmental health professional holding a current, valid registration from either the Washington State Environmental Health Association or the National Environmental Health Association;

c. a King County licensed water system designer holding a current, valid license to design water systems in King County; and

d. a rainwater system designer holding a current, valid accreditation from the American Rainwater Catchment System Association.

4. Rainwater catchment system design shall conform to chapter 51-56 WAC, Uniform Plumbing Code, as amended, and shall include, at a minimum, the following information:

a. estimated daily and weekly and annual demand;

b. available catchment area and estimated annual rainwater capture;

c. roofing materials used;

d. storage capacity of and materials used in the construction of the rainwater catchment system;

e. treatment specifications including filtrations and disinfection system specifications; and

f. operation and maintenance requirements.

5. Composite or shake shingles or other materials determined by the health officer to present a risk of contamination may not be approved or used as roofing materials for a rainwater catchment system source.

6. Before using a rainwater catchment system source, the property owner shall file in the county recorder's office a notice on title advising that the property is served by a rainwater catchment system and including the following information:

a. the estimated daily, weekly and annual water supply furnished by the rainwater catchment system;

b. that the water supply from the rainwater catchment system may be limited due to variations in rainfall or usage; and

c. that regular maintenance of the treatment system and components is required in order to minimize the risk of consuming contaminated water.

E. Lot area designated in whole or in part as a critical area may be included in the computation of the minimum five-acre lot size required under subsections B. and C. of this section. (R&R No. 15-03 § 1, 2015: R&R 11-03 § 2, 2011: R&R No. 08-03 § 5, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 13 § 3, 12-19-86).

13.04.080 Enforcement and rulemaking authority. Except as specifically otherwise provided in this title, the health officer shall have the authority to enforce the provisions of this title in accordance with BOH chapter 1.08. The health officer is also authorized to adopt rules consistent with this title for the purpose of enforcing and carrying out this title. (R&R No. 08-03 § 6, 2008).

13.08 DEFINITIONS

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13.08.010 General. Words and phrases in this title, unless otherwise clearly indicated by their context, shall have the meaning set out in this chapter. (R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.018 Abbreviations.

- A. "ASTM" means American Society of Testing Materials.
- B. "ATU" means Aerobic Treatment Unit.
- C. "BOD₅" means biochemical oxygen demand, typically expressed in mg/L.
- D. "CBOD₅" means carbonaceous biochemical oxygen demand, typically expressed in mg/L. For purposes of approximate conversion from BOD₅ to CBOD₅, multiply the BOD₅ by 0.83.
- E. "CEU" means continuing education unit.
- F. "DDES" means King County department of development and environmental services.
- G. "DOH" means the Washington state Department of Health.
- I. "mg/L" means milligrams per liter.
- J. "NSF" means National Sanitation Foundation International.
- K. "O and G," means oil and grease, a component of sewage typically originating from foodstuffs, which are animal fats or vegetable oils, or consisting of compounds of alcohol or glycerol with fatty acids, which are soaps and lotions. The quantity of O and G is typically expressed in mg/L.
- L. "TN" means total nitrogen, typically expressed in mg/L.
- M. "TSS" means total suspended solids, a measure of all suspended solids in a liquid, typically expressed in mg/L.
- N. ">" means greater than.
- O. "<" means less than.
- P. "OSM" means certified on-site system maintainer. (R&R No. 08-03 § 7, 2008: R&R No. 99-01 § 2 (part), 3-19-99).

13.08.020 Accessory living quarters.

"Accessory living quarters" means living quarters within an accessory building for the sole use of the family or persons employed on the premises or for the temporary use of guests of the occupants of the premises. Such quarters have no kitchen facilities and are not rented or otherwise used as a separate dwelling unit. (R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.024 Additive.

"Additive" means a commercial product added to an on-site sewage system intended to affect performance or aesthetics of the on-site sewage system. (R&R No. 99-01 § 2 (part), 3-19-99).

13.08.040 Approved. "Approved" means a written statement of acceptability, in terms of the requirements of this title, issued by the health officer and where required, by the Washington State Department of Health. (R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.050 Associate installer. "Associate installer" means a qualified person approved by the health officer to construct or repair on-site sewage systems and/or directly supervise work crews constructing or repairing on-site sewage systems and who must be under the general supervision of a certificated master installer. (R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.055 Bed. "Bed" means a soil dispersal component consisting of an excavation with a width greater than three feet. (R&R No. 08-03 § 12, 2008).

13.08.060 Building drain. "Building drain" means that part of a building drainage system which receives the discharge from waste pipes inside the walls of the building and conveys it to the building

sewer beginning two feet (2') outside the building walls. (R&R No. 99-01 § 2 (part), 3-19-99; R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.070 Building sewer. "Building sewer" means the sewage piping system designed to conduct sewage from the building drain to a point of connection to an on-site sewage system. (R&R No. 99-01 § 2 (part), 3-19-99; R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.072 Cesspool. "Cesspool" means a pit or receptacle which receives untreated sewage and allows the liquid to seep into the surrounding soil or rock. (R&R No. 99-01 § 2 (part), 3-19-99).

13.08.080 Community on-site system. "Community on-site system" means any on-site sewage system utilizing subsurface disposal and which:

A. Serves two (2) or more single-family dwellings that are under separate ownership or that are located on separate lots; or

B. Serves two (2) or more commercial facilities that are under separate ownership or that are located on separate lots. (R&R No. 99-01 § 2 (part), 3-19-99; R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.082 Commercial system. "Commercial system" means an on-site sewage system serving a development other than or in addition to a single-family residence. (R&R No. 99-01 § 2 (part), 3-19-99).

13.08.084 Conforming system. "Conforming system" means any on-site sewage system meeting any of the following criteria:

A. Systems in full compliance with new construction requirements under this title; or

B. Systems approved, installed and operating in accordance with requirements of the previous edition of this title in force when the system was constructed; or

C. Systems or repairs permitted through the waiver process of WAC 246-272A-0420 or this title and that assure public health protection by higher treatment performance or other methods. (R&R No. 08-03 § 13, 2008; R&R No. 99-01 § 2 (part), 3-19-99).

13.08.085 Continuing Education Unit (CEU). "Continuing education unit" (or "CEU") means eight (8) contact hours of participation annually in an organized educational experience, under responsible sponsorship, capable direction and qualified instruction acceptable to the health officer pertaining to on-site sewage treatment and disposal. (R&R No. 99-01 § 2 (part), 3-19-99).

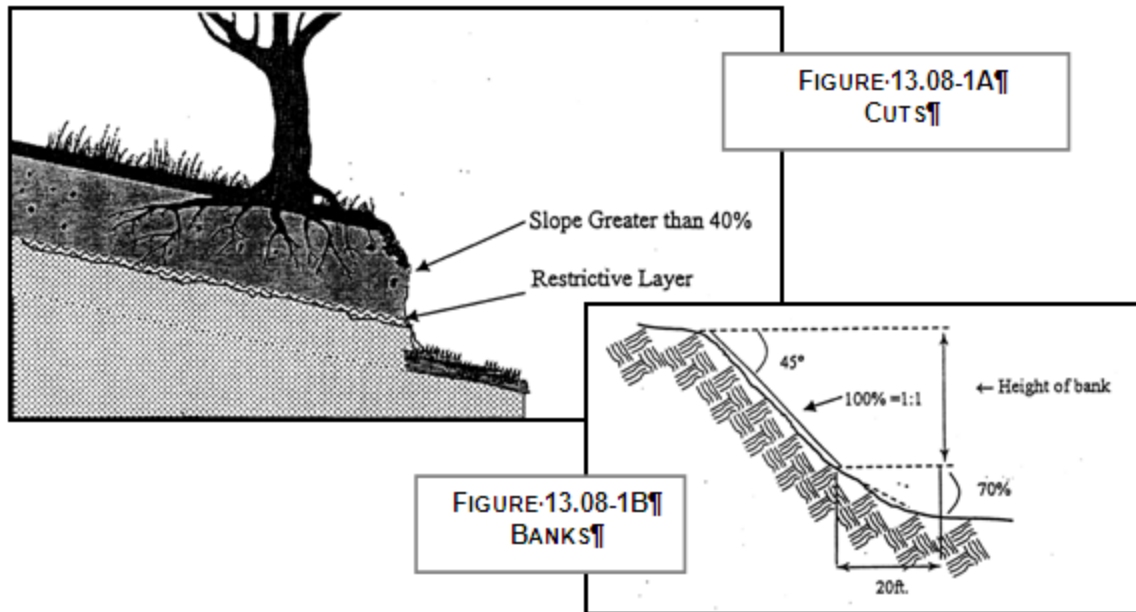
13.08.089 Covenant. "Covenant" means an agreement filed with the King County records and elections division which shall run with the land, stating certain activities and/or practices are required or prohibited. (R&R No. 99-01 § 2 (part), 3-19-99).

13.08.090 Cover. "Cover" means soil material that is used to cover a subsurface soil absorption system area composed predominately of mineral with no greater than ten percent organic content. "Cover" material may contain an organic surface layer for establishing a vegetative landscape to reduce soil erosion. (R&R No. 08-03 § 13, 2008; R&R No. 99-01 § 2 (part), 3-19-99; R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.095 Critical aquifer recharge area. "Critical aquifer recharge area" means a critical area designated by the county or a city under the Washington state Growth Management Act, Chapter 36.70A RCW, as having a critical recharging effect on aquifers used for potable water. (R&R No. 08-03 § 18, 2008).

13.08.097 Critical areas. "Critical areas" means areas designated as critical areas under the Washington state Growth Management Act, chapter 36.70A RCW, including the following areas and ecosystems: wetlands, areas with a critical recharging effect on aquifers used for potable water, fish and wildlife habitat conservation areas, frequently flooded areas and geologically hazardous areas. (R&R No. 08-03 § 19, 2008).

13.08.100 Cuts and/or banks. A "cut" means any artificially formed slope whose cut face exposes a restrictive soil layer or any artificially formed slope greater than one-hundred percent (100%). A "bank" is any naturally occurring slope which, when measured vertically downward from a horizontal line through the crest, will produce a slope equal to or greater than one hundred percent (100%), and measured down to a point where the slope changes to not more than seventy percent (70%) for a horizontal distance of at least twenty feet (20'). A cut and a bank are illustrated in Figures 13.08-1A and 13.08-1B.



(R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.110 Department. "Department" means the Seattle-King County department of public health. (R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.111 Department of Ecology. "Department of Ecology" means the Washington state Department of Ecology. (R&R No. 08-03 § 20, 2008).

13.08.112 Department of Health. "Department of Health" means the Washington State Department of Health. (R&R No. 99-01 § 2 (part), 3-19-99).

13.08.113 Design control point. "Design control point" means a designated point of reference selected or installed on a site by the designer from which measurements and elevations are taken to establish relative locations of on-site sewage system components and relate design document locations to actual site locations. May also be referred to as a benchmark. (R&R No. 99-01 § 2 (part), 3-19-99).

13.08.114 Designer. "Designer" means a person who matches site and soil characteristics with appropriate on-site sewage technology and who holds either an on-site sewage treatment system designers license under chapter 18.210 RCW or is a professional engineer licensed under chapter 18.43 RCW. (R&R No. 08-03 § 22, 2008: R&R No. 99-01 § 2 (part), 3-19-99).

13.08.115 Design flow. "Design flow" means the maximum volume of sewage a residence, structure, or other facility is estimated to generate in a twenty-four-hour period. It incorporates both an operating capacity and a surge capacity for the system during periodic heavy use events. The sizing and design of the on-site sewage system components are based on the design flow. An OSS is not meant to operate continuously at this capacity. (R&R No. 08-03 § 21, 2008).

13.08.116 Development. "Development" means the creation of a residence, structure, facility, mobile home park, subdivision, planned unit development, site, area, or any activity resulting in the production of sewage. (R&R No. 99-01 § 2 (part), 3-19-99).

13.08.117 Disinfection. "Disinfection" means the process of destroying pathogenic microorganisms in sewage through the application of ultraviolet light, chlorination or ozonation. (R&R No. 08-03 § 23, 2008).

13.08.120 Dosing systems. "Dosing systems" means on-site sewage systems using a pump or siphon to transport, control flow and/or delivery volume of effluent to the final treatment and soil dispersal component. (R&R No. 08-03 § 25, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.130 Drainfield. "Drainfield" means a subsurface soil absorption system or other soil dispersal component designed and installed to release effluent from a treatment component into the soil for

dispersal, final treatment and recycling. (R&R No. 08-03 § 26, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.131 Drainrock. "Drainrock" means clean washed gravel ranging in size from three-quarters to two and one half inches, and containing no more than two percent by weight passing a US No. 8 sieve and no more than one percent by weight passing a US No. 200 sieve. (R&R No. 08-03 § 27, 2008).

13.08.132 Effluent. "Effluent" means liquid discharged from a septic tank or other OSS component. (R&R No. 08-03 § 28, 2008: R&R No. 99-01 § 2 (part), 3-19-99).

13.08.134 Engineer. "Engineer" means a person who is licensed and in good standing under Chapter 18.43 RCW as a civil, sanitary or agricultural engineer. (R&R No. 99-01 § 2 (part), 3-19-99).

13.08.140 Excessively permeable soils. "Excessively permeable soils" means soils with a soil texture type 1 or other textures as defined by the United States Department of Agriculture standards and where conditions are such that the treatment potential is ineffective in retaining or removing substances of public health significance to underground sources of drinking water and soils with a percolation rate of one and one-half minutes per inch or faster. (R&R No. 08-03 § 29, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.141 Expanding clay. "Expanding clay" means a clay soil with the mineralogy of clay particles, such as those found in the Montmorillonite/Smectite Group, that causes the clay particles to expand when they absorb water, closing the soil pores and contract when they dry out. (R&R No. 08-03 § 30, 2008).

13.08.142 Expansion. "Expansion" means a change in a residence, facility, site, or use that:

A. Causes an on-site sewage system to be loaded in excess of its existing treatment or disposal capability or be used beyond its anticipated useful life, such as but not necessarily limited to when a building's occupancy potential is increased, or an increase in number of bedrooms, and/or the life expectancy of a building is extended by being rebuilt, renovated or remodeled; or, there is a change in use, for example, from a residence to a commercial use or to a special use such as a daycare facility.

B. Reduces the treatment or disposal capability of an existing on-site sewage system or the reserve area, such as, but not necessarily limited to, when a building addition is placed over or directly downslope from OSS components including reserve area. (R&R No. 99-01 § 2 (part), 3-19-99).

13.08.151 Extremely gravelly. "Extremely gravelly" means soil with sixty percent or more, but less than ninety percent, rock fragments by volume. (R&R No. 08-03 § 32, 2008).

13.08.152 Failure. "Failure" means a condition of an on-site sewage system or side sewer that threatens the public health by inadequately treating sewage or by creating a potential for direct or indirect human contact between sewage and the public. Examples of failure include:

A. Sewage, septage or effluent on the surface of the ground;

B. Sewage, septage or effluent backing up into a structure caused by slow soil absorption of septic tank effluent;

C. Sewage, septage or effluent leaking from a septic tank, pump chamber, holding tank, conveyance or collection system;

D. Cesspools, seepage pits and pit privies;

E. Inadequately treated effluent contaminating ground water or surface water; and

F. Failure to meet conditions stipulated on the permit. (R&R No. 08-03 § 33, 2008: R&R No. 99-01 § 2 (part), 3-19-99).

13.08.154 Fecal coliform. "Fecal coliform" means bacteria common to the digestive systems of warm-blooded animals that are cultured in standard tests. Counts of these organisms are typically used to indicate potential contamination from sewage or to describe a level of needed disinfection, and are generally expressed as colonies per one hundred milliliters. (R&R No. 08-03 § 34, 2008).

13.08.157 Fee schedule. "Fee schedule" means the fee schedule in BOH chapter 2.18. (R&R No. 08-03 § 35, 2008).

13.08.160 Fill. "Fill" means soil materials that have been displaced from their original location or condition except for sand which is being used in the construction of a mound or sand filter. (R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.164 Five (5) acres. "Five (5) acres" means 217,800 square feet or one one-hundred twenty-eighth (1/128th) of the section in which the property is located, including in addition, up to thirty (30) feet, but no more than one-half of the width of the right-of-way of any perimeter street. (R&R No. 99-01 § 2 (part), 3-19-99).

13.08.170 Food establishment. "Food establishment" means, for the purpose of this title, any commercial establishment in which food is processed or otherwise prepared, packaged, or repackaged into another container for consumption or for resale. (R&R No. 08-03 § 36, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.175 Gravelly. "Gravelly" means soil with fifteen percent or more, but less than thirty five percent rock fragments by volume. (R&R No. 08-03 § 37, 2008).

13.08.177 Conventional gravity system. "Conventional gravity system" means an on-site sewage system consisting of a septic tank and subsurface soil absorption system with gravity conveyance and distribution of the effluent and excluding any alternative system components. (R&R No. 08-03 § 15, 2008: R&R No. 08-03 § 14, 2008: R&R No. 99-01 § 2 (part), 3-19-99).

13.08.180 Greywater. "Greywater" means sewage having the consistency and strength of residential domestic type wastewater. Greywater includes wastewater from sinks, showers, bathtubs, dishwashers and laundry fixtures, but does not include toilet or urinal waters. (R&R No. 08-03 § 38, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.190 Groundwater. "Groundwater" means a subsurface water occupying the zone of saturated soil, permanently, seasonally, or as the result of the tides (the top surface of which is commonly referred to as the water table). Indications of groundwater may include:

A. Water seeping into or standing in an open excavation from the soil surrounding the excavation.

B. Spots or blotches of different color or shades of color interspersed with a dominant color in soil, commonly referred to as mottling. Mottling is a historic indication for the presence of groundwater and is the result of intermittent periods of saturation and drying, and may be indicative of poor aeration and impeded drainage. (See also Section 13.08.512, Water table.) (R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.200 Health officer. "Health officer" means the director of the Seattle-King County department of public health or his/her authorized representative. (R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.202 Holding tank sewage system. "Holding tank sewage system" means an on-site sewage system which incorporates a sewage tank without a discharge outlet, the services of a sewage pumper or hauler, and the off-site treatment and disposal of the sewage generated. (R&R No. 08-03 § 39, 2008: R&R No. 99-01 § 2 (part), 3-19-99).

13.08.205 Hydraulic loading rate. "Hydraulic loading rate" means the amount of effluent applied to a given treatment step, expressed as gallons per square foot per day. (R&R No. 08-03 § 40, 2008).

13.08.210 Impermeable. "Impermeable" means a soil horizon having a percolation rate exceeding fifty-nine (59) minutes per inch. (R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.212 Industrial wastewater. "Industrial wastewater" means the water or liquid-carried waste from an industrial process. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as animal boarding kennels, feedlots, poultry houses, or dairies. The term includes contaminated storm water and leachate from solid waste facilities. (R&R No. 99-01 § 2 (part), 3-19-99).

13.08.213 Infiltrative surface. "Infiltrative surface" means the surface within a treatment component or soil dispersal component to which effluent is applied and through which effluent moves into original, undisturbed soil or other porous treatment media. (R&R No. 08-03 § 41, 2008).

13.08.214 Installer. "Installer" means a qualified person approved by the health officer to install or repair on-site sewage systems or components. (R&R No. 08-03 § 42, 2008: R&R No. 99-01 § 2 (part), 3-19-99).

13.08.218 Kitchen or kitchen facility. "Kitchen" or "kitchen facility" means an area within a building intended for the preparation and storage of food and containing a sink. (R&R No. 08-03 § 43, 2008; R&R No. 99-01 § 2 (part), 3-19-99).

13.08.220 Large on-site system. "Large on-site system" (or "LOSS") means any on-site sewage system with design flows, at any common point, greater than three thousand five hundred gallons per day. (R&R No. 08-03 § 44, 2008; R&R No. 99-01 § 2 (part), 3-19-99; R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.226 Limited repair. "Limited repair" means the replacement, addition or alteration of a broken or malfunctioning building sewer pipe, sewage tank lid, sewage tank baffles, sewage tank pumps, pump control floats, pipes connecting multiple sewage tanks and drainfield inspection boxes and ports where the subsurface soil absorption system is not failing. (R&R No. 99-01 § 2 (part), 3-19-99).

13.08.240 Lot size. "Lot size" means the lot area which is bounded by the property lines of that lot. (R&R No. 99-01 § 2 (part), 3-19-99; R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.245 Maintenance. "Maintenance" means the actions necessary to keep the on-site sewage system components functioning as designed and approved. (R&R No. 08-03 § 45, 2008).

13.08.250 Management. "Management" means any person who forms and operates an on-site waste management system for the purposes of and under the provisions of Chapter 13.60 of this title, or the heirs, successors or assigns of such person. (R&R No. 99-01 § 2 (part), 3-19-99; R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.254 Marine recovery area. "Marine recovery area" means an area of definite boundaries where, in accordance with chapter 70.118A RCW, the health officer or the Washington state Department of Health in consultation with the health officer, determines that additional requirements for existing on-site sewage disposal systems may be necessary to reduce potential failing systems or minimize negative impacts of on-site sewage disposal systems. (R&R No. 08-03 § 46, 2008).

13.08.257 Massive structure. "Massive structure" means the condition of a soil layer in which the layer appears as a coherent or solid mass not separated into peds of any kind. (R&R No. 08-03 § 47, 2008).

13.08.260 Master installer. "Master installer" means a qualified person approved by the health officer to obtain on-site sewage system installation, modification and repair permits and is responsible for all construction done under those permits. (R&R No. 99-01 § 2 (part), 3-19-99; R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.261 Moderate structure. "Moderate structure" means well-formed distinct peds evident in undisturbed soil. When disturbed, soil material parts into a mixture of whole peds, broken peds and material that is not in peds. (R&R No. 08-03 § 49, 2008).

13.08.263 Monitoring. "Monitoring" means periodic or continuous checking of an on-site sewage system, which is performed by observations and measurements, to determine if the system is functioning as intended and if system maintenance is needed. Monitoring also includes maintaining accurate records that document monitoring activities. (R&R No. 08-03 § 50, 2008).

13.08.265 Neighboring well. "Neighboring well" means an existing well on a parcel adjoining or within one-quarter mile of the boundary line of a separate parcel on which a new well is proposed for construction. (R&R No. 08-03 § 51, 2008).

13.08.267 Nonconforming. "Nonconforming" means an on-site sewage system that does not meet applicable standards for new construction of an on-site sewage system. (R&R No. 08-03 § 52, 2008).

13.08.270 One (1) acre. "One (1) acre" means property having an area size of forty-three thousand five hundred sixty (43,560) square feet. (R&R No. 99-01 § 2 (part), 3-19-99; R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.280 On-site sewage system (OSS). "On-site sewage system" (or "OSS") means an

integrated system of components, located on or nearby the property it serves, that conveys, stores, treats or provides subsurface soil treatment and dispersal of sewage. It consists of a collection system, a treatment component or treatment sequence, and a soil dispersal component. An on-site sewage system also refers to a holding tank sewage system or other system that does not have a soil dispersal component. (R&R No. 08-03 § 53, 2008; R&R No. 99-01 § 2 (part), 3-19-99; R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.284 On-site system maintainer. "On-site system maintainer" (or "OSM") means a qualified person approved by the health officer to conduct performance monitoring inspections of, diagnose causes of malfunction and failure of, or perform preventive maintenance on and make limited repairs to on-site sewage systems. (R&R No. 08-03 § 54, 2008; R&R No. 99-01 § 2 (part), 3-19-99).

13.08.287 Operating capacity. "Operating capacity" means the average daily volume of sewage an OSS can treat and disperse on a sustained basis. The operating capacity, which is lower than the design flow, is an integral part of the design and is used as an index in OSS monitoring. (R&R No. 08-03 § 55, 2008).

13.08.290 Ordinary high-water mark. "Ordinary high-water mark" means the mark on lakes, streams, and tidal waters, found by examining the beds and banks and ascertaining where the presence and action of waters are so common and usual, and so long continued in all ordinary years, as to mark upon the soil a character distinct from that of the abutting upland with respect to vegetation, as that condition exists on the effective date of this title, or as it may naturally change thereafter. The following definitions apply where the ordinary high water mark cannot be found:

A. The ordinary high-water mark adjoining marine water is the elevation at mean higher high tide; and

B. The ordinary high-water mark adjoining freshwater is the line of mean high water. (R&R No. 99-01 § 2 (part), 3-19-99; R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.300 Original permeable soil. "Original permeable soil" means the naturally occurring soil of soil texture types 1 through 5 overlying any impermeable layer, any cemented layer overlying the groundwater table, or the elevation of groundwater during the wet season, with a percolation rate not greater than fifty-nine (59) minutes per inch. (R&R No. 99-01 § 2 (part), 3-19-99; R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.305 Ped. "Ped" means: a unit of soil structure such as blocks, column, granule, plate or prism formed by natural processes. (R&R No. 08-03 § 56, 2008).

13.08.310 Percolation test. "Percolation test" means a soil test performed at the depth of the bottom of a proposed subsurface soil absorption system to estimate the water absorption capability of the soil. The test is performed in accordance with the Design Manual: On-Site Wastewater Treatment and Disposal Systems, United States Environmental Protection Agency, EPA-625/1-80-012, October, 1980. The results are normally expressed as the rate in minutes at which one inch (1") of water is absorbed (minutes per inch). (R&R No. 99-01 § 2 (part), 3-19-99; R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.320 Person. "Person" means any individual, corporation, company, association, society, firm, partnership, joint stock company, or any governmental agency, or the authorized agents of any such entities. (R&R No. 99-01 § 2 (part), 3-19-99; R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.321 Pit privy. "Pit privy" means a pit into which untreated sewage is directly deposited allowing the liquid to seep into the surrounding soil or rock. (R&R No. 99-01 § 2 (part), 3-19-99).

13.08.3215 Platy structure. "Platy structure" means: soil that contains flat peds that lie horizontally and often overlap. This type of structure will impede the vertical movement of water. (R&R No. 08-03 § 57, 2008).

13.08.322 Pressure distribution. "Pressure distribution" means a system of small diameter pipes equally distributing effluent throughout a subsurface soil absorption system, as described in the Department of Health's Recommended Standards and Guidelines for Pressure Distribution Systems, 2001. A subsurface drip system may be used wherever this title requires pressure distribution (R&R No. 08-03 § 58, 2008; R&R No. 99-01 § 2 (part), 3-19-99).

13.08.324 Proprietary product. "Proprietary product" means a sewage treatment and distribution

technology, method or material subject to a patent or trademark. (R&R No. 08-03 § 59, 2008: R&R No. 99-01 § 2 (part), 3-19-99).

13.08.327 Public domain technology. "Public domain technology" means: a sewage treatment and distribution technology, method, or material not subject to patent or trademark. (R&R No. 08-03 § 60, 2008).

13.08.330 Public sewer system. "Public sewer system" means a sewerage system:

A. Owned or operated by a city, town, municipal corporation, county, or other approved ownership; consisting of a collection system and necessary trunks, pumping facilities and a means of final treatment and disposal; and

B. Approved by or under permit from the department of ecology, the department of health and/or the local health officer. (R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.340 Pump lines. "Pump lines" means the piping system designed to transport effluent by use of a pump or siphon to a sewage tank, a distribution or inspection box or to a pressurized effluent distribution network. (R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.341 Pump tank. "Pump tank" means a watertight receptacle receiving the discharge of effluent from a septic tank and which contains a pump or siphon which doses the effluent into another OSS component. May also be called a dosing tank. (R&R No. 99-01 § 2 (part), 3-19-99).

13.08.342 Pumper. "Pumper" means a qualified person approved by the health officer and holding a certificate(s) of competency pursuant to Chapter 13.68 of this title, to perform one or more of the following activities: May also be referred to as a "sludgehauler."

A. OSS pumper removes sewage and/or septage from sewage holding tanks, portable toilet units and OSS wastewater tanks and transports the contents to an approved disposal site.

B. Portable toilet pumper removes sewage from only portable/chemical toilet units and transports the contents to an approved disposal site.

C. Vessel (boat) sewage tank pumper removes sewage from holding tanks on vessels (boats) and transports the contents to an approved disposal site.

D. Grease trap/interceptor pumper removes animal and vegetable fats, oils and greases from grease traps and/or grease interceptor tanks and transports the contents to a recycling or approved disposal site. (R&R No. 99-01 § 2 (part), 3-19-99).

13.08.344 Rainwater catchment system. "Rainwater catchment system" means a cistern or cisterns, pipe, fittings, pumps and other plumbing appurtenances required for or used to harvest and distribute rainwater. (R&R No. 11-03 § 3, 2011).

13.08.346 Record drawing. "Record drawing" means an accurate graphic and written record of the location and features of the OSS that are needed to properly monitor, operate and maintain that system. (R&R No. 08-03 § 61, 2008).

13.08.348 Registered list. "Registered list" means the list of registered on-site treatment and distribution products as established in chapter 246-272A WAC On-site Sewage Systems, updated periodically and maintained by the Washington state Department of Health and containing the following:

A. Categories of treatment product and treatment levels;

B. List of manufacturers of registered proprietary on-site products;

C. List of registered on-site treatment and distribution products;

D. List of specific systems meeting treatment levels A, B, C, D, E and N;

E. List of septic tanks, pump chambers, and holding tanks approved by the Washington state Department of Health; and

F. List of Approved On-site Sewage Tanks. (R&R No. 08-03 § 62, 2008).

13.08.350 Repair. "Repair" means the replacement, reconstruction or relocation of, or addition or alteration to, a sewage tank, distribution box, tight line, or other appurtenances of an existing OSS, and including any replacement, reconstruction or relocation of, or addition or alteration to a soil absorption system. (R&R No. 08-03 § 63, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.360 Reserve area. "Reserve area" means an area of land approved for the installation of a conforming OSS that is protected and maintained for replacement of the OSS upon its failure. (R&R No.

08-03 § 64, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.370 Resident owner. "Resident owner" means a person who own and occupies a single-family dwelling. (R&R No. 08-03 § 65, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.372 Residential sewage. "Residential sewage" means sewage having the consistency and strength typical of wastewater from domestic households. See Table 13.08-1 for residential sewage strength parameters.

Table 13.08-1
Residential Sewage Strength Parameters

Parameter	Septic Tank Effluent Range (mg/L)
BOD ₅	130-230
CBOD ₅	Approximately 108-191
TSS	49-150
O and G	10-25

(R&R No. 08-03 § 66, 2008: R&R No. 99-01 § 2 (part), 3-19-99).

13.08.380 Restrictive layer. "Restrictive layer" means a stratum impeding the vertical movement of water, air, and growth of plant roots. Examples of such layers or conditions are groundwater tables, hardpans, claypans, fragipans, compacted soil, bedrock, caliche and clayey soil. (R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.390 Seasonal water. "Seasonal water" means any body of water not classified as surface water, which either flows or is contained in natural or artificial depressions for more than forty-eight (48) continuous hours. Also included in this definition are all wetland areas as defined in King County Code Chapter 21A.24 which are not classified as surface water. (R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.400 Secretary. "Secretary" means the Secretary of the Washington state Department of Health or the secretary's authorized representative. (R&R No. 08-03 § 67, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.402 Seepage pit. "Seepage pit" means an excavation more than three feet (3') deep where the sidewall of the excavation is designed to dispose of effluent. Seepage pits may also be called "dry wells". (R&R No. 99-01 § 2 (part), 3-19-99).

13.08.406 Septage. "Septage" means the mixture of solid wastes, scum, sludge, and liquids pumped from septic tanks, pump chambers, holding tanks, and other OSS components. (R&R No. 99-01 § 2 (part), 3-19-99).

13.08.410 Septic tank. "Septic tank" means a watertight pretreatment receptacle receiving the discharge of sewage from a building sewer or sewers, designed and constructed to permit separation of settleable and floating solids from the liquid, detention and anaerobic digestion of the organic matter, prior to discharge of the liquid. (R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.420 Sewage. "Sewage" means any liquid or liquid-borne waste from the ordinary living processes, and includes any urine, feces, and the water carrying human wastes, including kitchen, bath, and laundry wastes from residences, buildings, industrial establishments, or other places. For the purposes of these regulations, "sewage" is generally synonymous with domestic wastewater. (R&R No. 08-03 § 68, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.424 Sewage quality. "Sewage quality" means contents in sewage that include:

- A. CBOD₅, TSS and O and G;
- B. Other parameters that can adversely affect treatment, including but not limited to pH, temperature and dissolved oxygen; and
- C. Other constituents that create concerns due to specific site sensitivity. Examples include fecal coliform and nitrogen. (R&R No. 08-03 § 69, 2008).

13.08.426 Sewage tanks. "Sewage tanks" means prefabricated or cast-in-place septic tanks, pump tank/dosing chambers, holding tanks, grease interceptors, recirculating filter tanks and any other tanks as they relate to on-site wastewater systems, including tanks for use with proprietary devices. May also be

referred to as "on-site wastewater system tanks." (R&R No. 99-01 § 2 (part), 3-19-99).

13.08.430 Sewer utility. "Sewer utility" means the owner and/or operator of a public sewer system. (R&R No. 99-01 § 2 (part), 3-19-99; R&R No. 3 Part 1 § 5 (part), 12-19-86)

13.08.450 Side sewer. "Side sewer" means the sewage piping system designed to conduct sewage from a building or other source of sewage located on any premises to a point of connection to a public sewer. (R&R No. 99-01 § 2 (part), 3-19-99; R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.460 Single-family dwelling. "Single-family dwelling" means a detached building designed exclusively for occupancy of one (1) family. (R&R No. 99-01 § 2 (part), 3-19-99; R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.465 Soil dispersal component. "Soil dispersal component" means a technology that releases effluent from a treatment component into the soil for dispersal, final treatment and recycling. (R&R No. 08-03 § 72, 2008).

13.08.470 Soil log. "Soil log" means a detailed description of the soil's texture, structure, color, bulk density or compaction, water absorption capabilities or permeability, extent of disturbance or any other characteristics providing information as to the soil's capacity to act as an acceptable treatment and disposal medium for sewage. (R&R No. 08-03 § 71, 2008; R&R No. 99-01 § 2 (part), 3-19-99; R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.472 Soil type. "Soil type" means one of seven numerical classifications of fine earth particles and coarse fragments as described in WAC 246-272A-0220(2)(e). (R&R No. 08-03 § 73, 2008; R&R No. 99-01 § 2 (part), 3-19-99).

13.08.477 Strong structure. "Strong structure" means peds that are distinct in undisturbed soil, having the characteristic of separating cleanly when soil is disturbed, resulting in soil material separating mainly into whole peds when removed. (R&R No. 08-03 § 74, 2008).

13.08.480 Subdivision. "Subdivision" means a division of land or creation of lots or parcels, described under chapter 58.17 RCW, now or as hereafter amended, including both long and short subdivisions, planned unit developments and mobile home parks. (R&R No. 08-03 § 75, 2008; R&R No. 99-01 § 2 (part), 3-19-99; R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.482 Subsurface drip system (SDS). "Subsurface drip system" (or "SDS") means an efficient high pressurized wastewater distribution system that can deliver small, precise doses of effluent to soil surrounding the drip distribution piping (called "dripline") as described in DOH's "Recommended Standards and Guidance for Subsurface Drip Systems." (R&R No. 08-03 § 76, 2008).

13.08.484 Subsurface soil absorption system (SSAS). "Subsurface soil absorption system" (or "SSAS") means a soil dispersal component of trenches or beds containing either a distribution pipe within a layer of drainrock covered with a geotextile, or an approved gravelless distribution technology, designed and installed in original, undisturbed, unsaturated soil providing at least minimal vertical separation as established in this title, with either gravity or pressure distribution of the treatment component effluent.. (R&R No. 08-03 § 77, 2008; R&R No. 99-01 § 2 (part), 3-19-99).

13.08.490 Surface water. "Surface water" means any body of water, whether fresh or marine, which either flows or is contained in natural or artificial depressions or drainage course and contains water for forty-eight (48) continuous hours during any of the months of May through October, or is identified by King County department of natural resources as a significant drainage feature. Such bodies include, but are not limited to, natural and artificial lakes, ponds, rivers, streams, swamps, marshes, tidal water and wetlands. (R&R No. 99-01 § 2 (part), 3-19-99; R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.491 Timed dosing. "Timed dosing" means the delivery of discrete volumes of sewage at prescribed time intervals controlled by a timer device specifically designed for wastewater systems. (R&R No. 08-03 § 78, 2008).

13.08.493 Treatment component. "Treatment component" means a technology that treats sewage in preparation for further treatment or dispersal, or both, into the soil environment. Some treatment

components, such as mound systems, incorporate a soil dispersal component in lieu of separate treatment and soil dispersal components. (R&R No. 08-03 § 79, 2008).

13.08.4934 Treatment level. "Treatment level" means one of six levels, which are A, B, C, D, E and N, used to match site conditions of vertical separation and soil type with treatment components. They are not intended to be applied as field compliance standards. The following chart provides values for each treatment level so that the relationship between the different levels can be understood.

**FIGURE 13.08-2
VERTICAL SEPARATION**

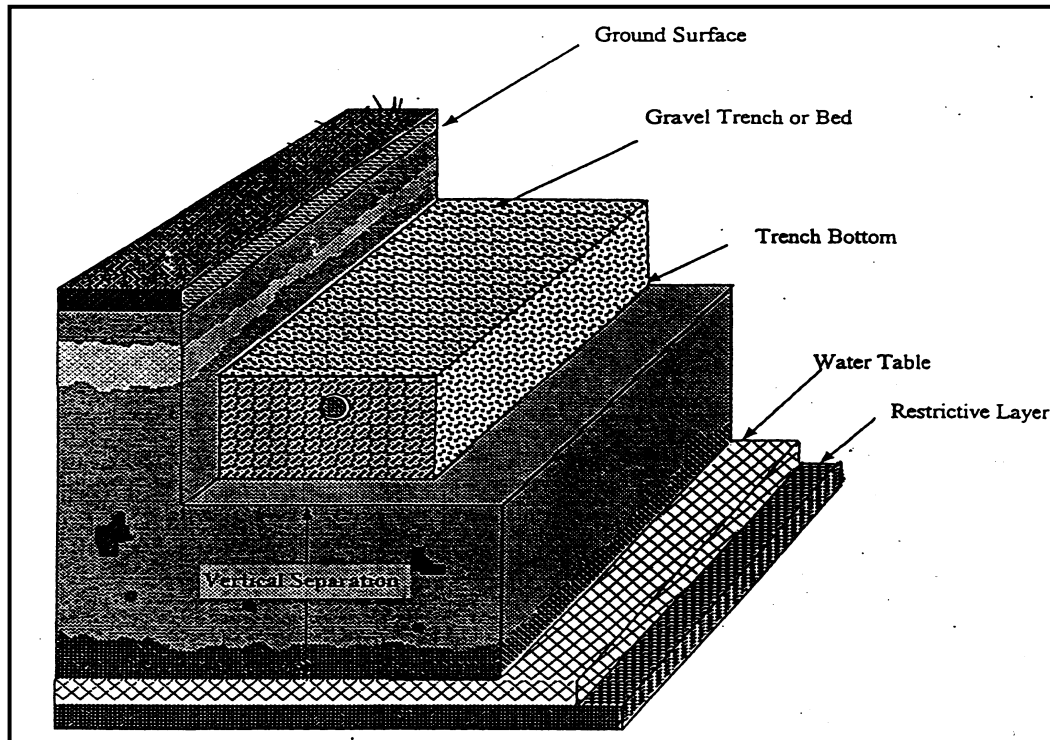
Level	CBOD ₅ (mg/L)	TSS (mg/L)	Parameters O and G (mg/L)	FC (#/100 ml)	TN (mg/L)
A	10	10	----	200	----
B	15	15	----	1,000	----
C	25	30	----	50,000	----
D	25	30	----	----	----
E	125	80	20	----	----
N	----	----	----	----	20

(R&R No. 08-03 § 80, 2008).

13.08.4937 Treatment sequence. "Treatment sequence" means any series of treatment components that discharges treated sewage to the soil dispersal component. (R&R No. 08-03 § 81, 2008).

13.08.496 Unit volume of sewage. "Unit volume of sewage" means:

- A. Flow from a single-family residence with not more than three bedrooms;
- B. Flow from a mobile home site in a mobile home park; or
- C. Four hundred fifty gallons of sewage per day where the proposed development is not single-family residences or a mobile home park. (R&R No. 08-03 § 85, 2008; R&R No. 99-01 § 2, (part), 3-19-99).



13.08.500 Vertical separation. "Vertical separation" means the depth of unsaturated original, undisturbed soil of soil types 1 through 6 that exists between the bottom infiltrative surface of a soil dispersal component and a restrictive layer, highest seasonal water table or soil type 7. (R&R No. 08-03 § 86, 2008; R&R No. 99-01 § 2 (part), 3-19-99; R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.505 Very gravelly. "Very gravelly" means soil containing thirty five percent or more, but less than sixty percent rock fragments by volume. (R&R No. 08-03 § 87, 2008).

13.08.510 Waived. "Waived" means waived in writing by the health officer, and where required, by the secretary. (R&R No. 99-01 § 2 (part), 3-19-99; R&R No. 3 Part 1 § 5 (part), 12-19-86).

13.08.512 Water table. "Water table" means the upper surface of the groundwater, whether permanent or seasonal. (See also Section 13.08.190, Groundwater.) (R&R No. 99-01 § 2 (part), 3-19-99).

13.08.516 Watertight. "Watertight" means assembled or constructed prohibiting the entrance or escape of liquids except through inlets, outlets, intercompartmental wall fittings or baffles. (R&R No. 99-01 § 2 (part), 3-19-99).

13.08.520 Well. "Well" means an excavation that is constructed when the intended use of the well is for the location, diversion, artificial recharge, observation, monitoring, dewatering or withdrawal of ground water for agricultural, municipal, industrial, domestic or commercial use. Excluded are:

- A. A temporary observation or monitoring well used to determine the depth to a water table for locating an OSS;
- B. An observation or monitoring well used to measure the effect of an OSS on a water table; and
- C. An interceptor or curtain drain constructed to lower a water table. (R&R No. 08-03 § 88, 2008).

13.12 SEWAGE REVIEW COMMITTEE

Sections:

13.12.010	Membership--Appointment--Term.
13.12.020	Membership--Officers.
13.12.030	Public meetings--Procedure.
13.12.040	Appeal for reconsideration--Commencement.
13.12.050	Appeal for reconsideration--Filing.
13.12.060	Appeal for reconsideration--Notice to neighboring property owners.
13.12.070	Appeal for reconsideration--Recommendation of committee--Decision.
13.12.080	Appeal for reconsideration--Grant of variance.
13.12.090	Appeal for reconsideration--Variance expiration.
13.12.100	Appeal for reconsideration--Judicial review.

13.12.010 Membership--Appointment--Term. There is hereby established the King County sewage review committee (the "committee"). It shall consist of three (3) members with knowledge and experience in on-site sewage treatment and disposal and public health: a designated representative of the health officer and two (2) appointed members who are registered sanitarians or sanitary, agricultural or civil engineers. The two (2) appointed members of the committee shall be appointed by the director of the Seattle-King County department of public health or his or her duly authorized representative (the director). One (1) or more sanitarians or sanitary, agricultural and/or civil engineers shall be appointed by the director to serve as alternate members in the absence of any member, or when in the judgment of the committee a conflict of interest exists. Unless otherwise specified by the health officer, the terms of the two (2) appointed members and the alternate member(s) shall be for a term of three (3) years ending December thirty-first of the third year of such term, subject to reappointment. The registered sanitarian or engineer members may be selected from industry. (R&R No. 99-01 § 2 (part), 3-19-99; R&R No. 3 Part 10 § 1(A), 12-19-86).

13.12.020 Membership--Officers. The committee shall select one (1) member to serve as its chair for each calendar year, and the chair may be re-elected. The chair may designate any person to serve as secretary to the committee. The committee shall adopt its own rules of procedure. Appointed members shall serve without compensation. (R&R No. 99-01 § 2 (part), 3-19-99; R&R No. 3 Part 10 § 1(B), 12-19-86).

13.12.030 Public meetings--Procedure.

A. Meetings shall be held on the call of the health officer, and shall be held with sufficient frequency that no more than forty (40) days shall elapse from the time an appeal for reconsideration is commenced until a recommendation is returned to the health officer by the committee, except that if a continuance is granted at the request of an appellant the committee shall return its recommendation within a reasonable time. The filing of any technical report or other exhibit subsequent to the commencement of an appeal shall be deemed a request for a continuance.

B. The committee may make recommendations to the health officer concerning the health officer's decision or determination that is the subject of the appeal for reconsideration acting in an advisory capacity only.

C. Notice of all meetings of the committee shall be given not less than three (3) days prior thereto to any appellant and to any other person which had previously made known a desire to affect the disposition of the order or decision of the health officer which is the subject of the appeal for reconsideration.

D. All meetings of the committee shall be open to the public. Verbal testimony may be given to the committee during the meeting. (R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 10 § 2, 12-19-86).

13.12.040 Appeal for reconsideration--Commencement. Any person aggrieved by any decision or order of the health officer made pursuant to this title concerning an OSS-related application pertaining to land in which that person has an interest, may appeal to the health officer for reconsideration of such decision or order. The appeal shall be commenced by the filing of a written application in the manner specified in this title, and shall be accompanied by a fee as set forth in the fee schedule. Upon receiving an appeal for reconsideration, the health officer may call for one or more meetings of the committee to review and make recommendations concerning the appeal. (R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 97-06 § 1, 12-19-97: R&R No. 98 § 1, 12-14-93: R&R No. 77 § 1, 12-11-91: R&R No. 3 Part 10 § 3(A), 12-19-86).

13.12.050 Appeal for reconsideration--Filing. The appeal for reconsideration shall be in writing, submitted on one or more forms prescribed by the health officer, and shall be filed with the health officer not later than 5:00 p.m. of the sixtieth (60th) calendar day following the date of the decision or order that is the subject of the appeal. The appeal shall cite with particularity the decision or order appealed from, and shall contain a statement of the reason for the appeal and what relief is sought. The appeal shall be accompanied by any technical reports or other exhibits, prepared at the appellant's own expense, which the appellant wishes the committee and the health officer to consider. (R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 10 § 3(B), 12-19-86).

13.12.060 Appeal for reconsideration--Notice to neighboring property owners. The appellant shall be responsible for providing, at his or her own expense, notice regarding the nature of the appeal to all owners of property within three hundred (300) feet of the property that is the subject of the appeal or to the nearest fifteen property owners, whichever is greater. Such notification shall be made on forms provided by the health officer. (R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 10 § 3(C), 12-19-86).

13.12.070 Appeal for reconsideration--Recommendation of committee--Decision. Not later than sixty (60) days after an appeal for reconsideration is filed, the health officer shall issue to the appellant and to the committee his or her written decision on such appeal, except that if a continuance is granted at the request of an appellant the health officer shall issue his or her decision within a reasonable time. The health officer may affirm or reverse, wholly or in part, or may modify any order or decision that is the subject of an appeal for reconsideration. In determining whether to grant or deny a variance or other relief sought by the appellant, the health officer may adopt or reject wholly or in part the recommendation of the committee. The reasons for the health officer's decision and any findings of fact made in support thereof must appear in the notice of the decision. (R&R No. 99-01 § 2 (part), 3-19-99).

13.12.080 Appeal for reconsideration--Grant of variance. The health officer may grant variances from the requirements of this title where there are unusual circumstances or conditions such that the application of the requirements would cause undue and unnecessary hardship. No variance shall be granted which would in any way tend to jeopardize the public health and safety and welfare or in any way tend to interfere with or prejudice the rights of others to the comfortable enjoyment of life and property. No variance shall be granted which would authorize installation contrary to the laws of the state of Washington, including Chapter 246-272 WAC as now or hereafter amended. (R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 10 § 3(D), 12-19-86).

13.12.090 Appeal for reconsideration--Variance expiration. Any variance granted by the health officer shall unless otherwise specified by the health officer, expire after two years from the date such variance is issued, unless the on-site sewage system is installed and approved prior to the expiration date. An extension not to exceed one year may be granted provided that the applicant provides reasonable justification for the extension as determined by the sole discretion of the health officer. Application for variance approval shall be made on forms provided by the health officer. (R&R No. 08-03 § 89, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 10 § (3)(E), 12-19-86).

13.12.100 Appeal for reconsideration--Judicial review. A decision of the health officer issued

pursuant to this title in response to an appeal for reconsideration shall be final unless an aggrieved person files a land use petition pursuant to Chapter 36.70C RCW for the purpose of judicial review of the decision. (R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 10 § 3(G), 12-19-86).

13.16 TECHNICAL ADVISORY COMMITTEE

Sections:

- 13.16.010 Membership.
- 13.16.020 Appointment.
- 13.16.030 Procedure.

13.16.010 Membership. There is established an on-site wastewater treatment and disposal stakeholders technical advisory committee.

A. Membership of the advisory committee shall consist of at least nine members, including the health officer, ex officio, and any eight or more of the following voting members appointed by the health officer:

1. Sanitary, agricultural or civil engineer licensed by the state of Washington;
2. On-site sewage system designer;
3. Seattle Master Builders Association representative;
4. Seattle-King County Board of Realtors representative;
5. A representative of a nonprofit, nonpartisan public affairs or environmental affairs organization;
6. On-site sewage system maintainer;
7. A consumer representing the King County Unincorporated Area Councils;
8. Representative of incorporated cities;
9. Representative of a sewer utility district;
10. On-site sewage system installer;
11. On-site sewage system pumper; and
12. Field Sanitarian.

B. In addition to the voting members, any combination of the following may be appointed by the health officer to serve as ex officio members of the committee:

1. A King County department of natural resources and parks representative;
2. A Washington state Department of Ecology representative.
3. A Washington state Department of Health representative; and
4. A United States Department of Agriculture, Natural Resource Conservation Service representative. (R&R No. 08-03 § 90, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 12 § 1, 12-19-86).

13.16.020 Appointment. Members of the stakeholders technical advisory committee, other than ex-officio members, shall be appointed by the director of the Seattle-King County department of public health or his or her duly authorized representative. Appointments shall be for a term of three (3) years ending December thirty-first of the third year of such term, subject to reappointment. Any vacancy shall be filled for the unexpired term in the same manner as original appointments. Members shall serve without compensation. (R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 12 § 2, 12-19-86).

13.16.030 Procedure.

A. The stakeholders technical advisory committee shall organize and elect a chair and secretary who shall serve at the pleasure of the members. Such committee may adopt rules of procedure for its own governance and shall meet at the call of the chair subject to three (3) days written notice to each member of the time and place of such meeting.

B. The stakeholders technical advisory committee shall examine on-site sewage regulations adopted by the King County board of health, make recommendations thereon and shall review and recommend new methods and techniques of on-site sewage treatment and disposal, but shall act in advisory capacity only. (R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 12 § 3, 12-19-86).

13.20 PERMITS AND CERTIFICATES

Sections:

- 13.20.010 Permits--general.
- 13.20.020 Designer license.
- 13.20.030 Installer certification.
- 13.20.035 Maintainer certification.
- 13.20.040 Resident owner design, construction and monitoring.

13.20.010 Permits--general.

A. Unless otherwise specified in this title, it is unlawful to construct, install, repair or modify an OSS

without an OSS construction permit. Such permit shall be posted on the building or premises where the work permitted is being done, before the work is begun, and unless revoked, shall not be removed until such work has been finally approved by the health officer.

B. The application submitted for an OSS construction permit shall be accompanied by an approved site design application or approved repair proposal. The permit application for a new OSS to serve a building shall be accompanied by evidence that the responsible building official has issued a building permit authorizing construction of that building.

C. The fee for an OSS construction permit shall be as set forth in the fee schedule.

D. OSS construction permits shall expire two years from date of issue.

E. Unless otherwise provided in this title, the applicant for an OSS construction permit shall be a certified master installer and shall be responsible for all work done under that permit.

F. The applicant for an OSS construction permit may not also be the designer named on the site application unless the work to be done consists solely of OSS failure repair.

G. Application for an OSS construction permit shall be made in writing in a manner prescribed by the health officer and shall be accompanied by a fee as set forth in the fee schedule. The health officer may deny the application if in the health officer's judgment operation of the system will result in a public health hazard. The health officer may consider any relevant health and safety factors in making such a determination. If an application is denied on the grounds of a hazard to public health, the health officer at the time of the denial shall inform the applicant in writing of the reasons for the denial and the applicant's right to appeal the denial.

H. Each construction permit issued pursuant to this title for an OSS installation or repair is nontransferable and is valid only for the designer or installer named thereon and for the type of OSS construction or repair for which the permit has been issued. A new construction permit shall be obtained in the event of change of designer or installer performing the work, or in the type of OSS for which a permit has previously been issued. (R&R No. 08-03 § 91, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 98 § 2, 12-14-93: R&R No. 77 § 2, 12-11-91: R&R No. 49 § 1 (part), 12-1-89: R&R No. 3 Part 2 § 1, 12-19-86).

13.20.020 Designer license. Persons designing OSS must possess a valid on-site sewage system designer's license issued by the Washington state Department of Licensing in accordance with chapter 18.210 RCW, or be licensed and in good standing under chapter 18.43 RCW as a sanitary, civil or agricultural engineer, except as provided in BOH 13.20.040. (R&R No. 08-03 § 92, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 98 § 3, 12-14-93: R&R No. 3 Part 2 § 2(A), 12-19-86).

13.20.030 Installer certification.

A. Except as provided in BOH 13.20.035 and 13.20.040, it is unlawful to install, modify or repair OSS without a currently valid installer's certificate of competency.

B.1. Application for a master installer's or associate installer's certificate of competency shall be made to the health officer and shall be accompanied by a fee as set forth in the fee schedule.

2. The application shall be accompanied by evidence of successful completion within the previous twelve months of a health officer-recognized course of instruction in the basics of OSS and installation of OSS.

3. The health officer shall examine the applicant, shall charge an exam fee as set forth in the fee schedule and may deny the application if in the health officer's judgment the applicant is for any reason, including previous finding of negligence, incompetence, misrepresentation or failure to comply with this title, not qualified to install on-site sewage systems.

C.1. As a condition of certification the master installer applicant shall submit evidence of and maintain at all times compliance with state of Washington minimum performance bonding requirements as stated in chapter 18.27 RCW.

2. The health officer may suspend or revoke any master or associate installer's certificate of competency, pursuant to BOH chapter 1.08.

3. The installer's certificate of competency shall expire December 31 of each year. The installer may not obtain installation permits or construct or repair any OSS after December 31 unless the certification has been renewed. The holder of such a certificate may renew the certificate on or before January 15 of the year following expiration without taking the examination specified by this section, but only if:

a. A renewal application accompanied by a fee as specified in the fee [schedule in]* BOH [chapter 2.18]* is submitted to the health officer. A late fee of twenty five percent of the renewal amount will be charged by the health officer for renewal applications received after January 15; and

b. The applicant provides evidence that at least one CEU credit has been earned by the master installer applicant and the associate installer applicant during the previous calendar year.

4. The health officer may hold, as necessary, informational/educational meetings for all holders of installer's certificates of competency. A minimum of four weeks[] notice of the meeting time and location

shall be sent to each installer. Except as provided by the health officer attendance at the meetings shall be mandatory for all installers. Failure to attend the required meetings, without prior approval of the health officer, shall be cause for the health officer to withhold recertification until an examination administered under the provisions of subsection B. of this section is retaken. (R&R No. 08-03 § 93, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 98 § 4, 12-14-93: R&R No. 3 Part 2 § 2(B), 12-19-86).

***Reviser's note: Material added but not underlined in R&R No. 08-03 § 93.**

13.20.035 Maintainer certification.

A. Unless otherwise specified in this title, including BOH 13.20.040 and 13.60.010 relating to homeowners, it is unlawful to conduct performance monitoring inspections of and/or perform preventive maintenance service, to include making limited repairs to on-site sewage systems, without a currently valid OSM certificate of competency.

B.1. Application for an OSM certificate of competency shall be made to the health officer and shall be accompanied by a fee as set forth in the fee schedule.

2. The application shall be accompanied by evidence of two years of relevant OSS experience.

3. The application shall be accompanied by evidence of successful completion within the previous twelve months of a health officer-recognized course of instruction in the operation, monitoring and maintenance of on-site sewage systems.

4. The health officer shall examine the applicant except that the health officer may waive the examination for the designer who is performing monitoring of only these systems designed by that person. The health officer may deny the application if in the health officer's judgment the applicant is for any reason, including previous findings of negligence, incompetence, misrepresentation or failure to comply with this title, not qualified to monitor and maintain on-site sewage systems.

C.1. As a condition of certification the maintainer shall:

a. submit evidence of and maintain at all times compliance with state of Washington minimum performance bonding requirements as stated in chapter 18.27 RCW; and

b. consistently demonstrate reasonable care and skill in performing work governed by this title and shall comply with all the terms and conditions of these and all other applicable rules and regulations.

2. The health officer may suspend or revoke any OSM certificate of competency, pursuant to BOH chapter 1.08.

3. The OSM certificate of competency shall expire December 31 of each year. The holder of such certificate may renew the certificate on or before January 15 of the year following expiration without taking the examination specified by this section, but only if:

a. a renewal application accompanied by a fee as specified in the fee schedule is submitted to the health officer. A late fee of twenty-five percent of the renewal amount will be charged by the health officer for renewal applications received after January 15; and

b. the applicant submits evidence of bonding as specified by BOH 13.20.035 C.1; and

c. the applicant submits evidence that at least one CEU credit has been earned by the OSM applicant during the previous calendar year.

4. The on-site system maintainer may not conduct performance monitoring inspections or perform preventive maintenance of on-site sewage systems after December 31, unless the certification has been renewed.

5. The health officer may hold informational/educational meetings for all holders of OSM certificates of competency. A minimum of four weeks[] notice of the meeting time and location shall be sent to each maintainer. Unless otherwise specified by the health officer, attendance at the meeting shall be mandatory for all maintainers. Failure to attend the required meetings, without prior approval of the health officer, shall be cause for the health officer to withhold recertification until an OSM examination is successfully completed. (R&R No. 08-03 § 94, 2008: R&R No. 99-01 § 2 (part), 3-19-99).

13.20.040 Resident owner design, construction and monitoring.

A. A resident owner may personally design a system for the resident owner's own single-family residence, but only if the site application submitted by the homeowner demonstrates that:

1. The area where the drainfield and reserve area are to be located has a minimum of four feet of original permeable soil, and a minimum vertical separation of three feet is maintained.

2. Not more than one system is designed in any twelve-month period.

3 A gravity soil absorption system is proposed; and

4. The property is not adjacent to a marine shoreline.

B. A resident owner may personally construct, install, or repair a gravity system for the resident owner's own single-family dwelling, but only if:

1. The area where the drainfield and reserve area are located has a minimum of four feet of original permeable soil and a minimum vertical separation of three feet is maintained;

2. The resident owner constructs and installs not more than one system in any twelve-month period;
and

3. The property is not adjacent to a marine shoreline.

C. The requirement for soil depths as required in this subsection B. and subsection A. of this section may be waived by the health officer when the resident owner is making repairs or additions to an existing gravity system or repairing or replacing the building sewer component of an alternative system.

D. A resident owner of a single-family residence may monitor the performance of and perform prescribed preventive maintenance services for a gravity OSS and for the septic tank component of an alternative OSS or, upon approval from the health officer for a low pressure distribution system. (R&R No. 08-03 § 95, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 2 § 3, 12-19-86).

13.24 SUBDIVISION EVALUATION

Sections:

- 13.24.010 Application.
- 13.24.020 Determination of minimum lot size.
- 13.24.030 Evaluation process.
- 13.24.040 Rezones and boundary line adjustments.

13.24.010 Application.

A. Application for subdivision or short subdivision approval shall be made to the health officer on forms provided for this purpose, shall be accompanied by a fee as set forth in the fee schedule and shall be in sufficient detail to allow evaluation of the suitability of the proposed means of on-site sewage treatment and disposal. If a community on-site system is proposed, the preliminary report and plans and specifications shall be in accordance with BOH 13.28.040. If any soils work is required or evaluation of an existing OSS is necessary the application must be submitted to the health officer by a licensed septic system designer or qualified professional engineer.

B. Department review is not required for those subdivisions within the urban growth area where group A public water and public sewer service will be used for all of the resultant lots.

C. The application for any development, including but not limited to subdivisions, short subdivisions, mobile home parks, multi-family housing, and commercial establishments, shall include evidence that suitable site and soil conditions as required by this title, to adequately treat and dispose of sewage on-site are present. After review of the proposed development, the health officer shall either approve, deny, or hold the proposal pending submittal of additional information. (R&R No. 08-03 § 97, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 97-06 § 2, 12-19-97: R&R No. 98 § 5, 12-14-93: R&R No. 77 § 3, 12-11-91: R&R No. 3 Part 3 § 1, 12-19-86).

13.24.020 Determination of minimum lot size.

A. The minimum lot size when creating new lots utilizing OSS shall be established by the health officer on the basis of the information submitted and any on-site inspections by the health officer.

1. All lots created must be at least twelve thousand five hundred square feet and shall not exceed a maximum flow density of one thousand five hundred seventy gallons of sewage per acre per day.

2. Lots utilizing an individual private water source shall be at least five acres.

B. Factors that may be considered when determining type of on-site system, connection to sewers, or establishing minimum lot size area include but are not limited to the following:

- 1. Availability of public sewers, as determined by the King County Comprehensive Plan;
- 2. Soil type and depth;
- 3. Area drainage and lot drainage;
- 4. Protection of surface and ground water;
- 5. Setbacks from property lines, water supplies, rights of way and easements, including but not limited to easements for drainfields, utilities and telecommunications;
- 6. Source of domestic water;
- 7. Topography, geology and ground cover;
- 8. Climatic conditions;
- 9. Activity or land use, present and anticipated;
- 10. Growth patterns;
- 11. Individual and accumulated gross effects on water quality;
- 12. Availability of a one hundred percent reserve area for system replacement;
- 13. Anticipated sewage volume - as determined by number of lots and development;
- 14. Effect on other properties;
- 15. Compliance with zoning, critical area development restrictions including the critical aquifer recharge area and other code requirements of the governing agency as applicable.

C. The minimum lot size requirement for creating subdivisions involving single-family residences or mobile home parks shall be determined by the soil type as outlined in Table 13.24-1.

**Table 13.24-1
Minimum Land Area Requirement
Single-Family Residence or
Unit Volume of Sewage**

Type of Water Supply	Soil Type					
	1	2	3	4	5	6
Public Water System	0.5 acre	12,500 sq. ft.	15,000 sq. ft.	18,000 sq. ft.	20,000 sq. ft.	22,000 sq. ft.
Individual/Private Well*	5 acres	5 acres	5 acres	5 acres	5 acres	5 acres

*Requirements for public wells may preclude use of private wells in certain instances. See RCW 19.27.097.

NOTE: Well location and construction must be consistent with the King County Comprehensive Plan, as amended.

(R&R No. 08-03 § 98, 2008; R&R No. 99-01 § 2 (part), 3-19-99; R&R No. 3 Part 3 § 2, 12-19-86).

13.24.030 Evaluation process. The applicant for subdivision or short subdivision approval shall obtain the health officer's review of the development proposal in accordance with this section.

A. The applicant shall obtain the health officer's preapplication or preliminary review before submitting the development proposal to DDES or other building official, as applicable, and shall include the following information in the application submittal:

1. A vicinity map providing precise directions to the parcel or parcels;
2. Signage or flagging at the identified entry point to the parcel or parcels;
3. Critical area review, including critical aquifer recharge area classification, with all buffers and setbacks shown on the plot plan;
4. A minimum of two soil logs per proposed lot shall be provided prior to department preliminary review. Such soil logs shall be excavated in accordance with the requirements of BOH 13.28.050. The soil log or logs must clearly show that within the lot area designated for the OSS the vertical separation specified in Table 13.28-1, and minimum lot sizes specified in Table 13.24-1 are provided.

5. A scaled plot plan of the proposed subdivision depicting the land area proposed for an initial on-site system and a contiguous one hundred percent (100%) system reserve area and soil log locations. The plot plan shall also identify any wells, surface water bodies and other features relevant to the siting of an on-site sewage system on the proposed and adjacent parcels.

B. The applicant shall submit the following information to the health officer and obtain the health officer's final approval of the development proposal:

1. A minimum of four soil logs per proposed lot shall be provided. Such soil logs shall be excavated in accordance with BOH 13.28.050. Each soil log shall clearly show that the vertical separation specified in Table 13.28-1 is provided.

2. A scaled plot plan identifying sufficient area for a drainfield and a contiguous one hundred percent reserve area for each lot shall be submitted after road cuts have been made, any plat development site grading affecting the OSS area completed, and drainage plan completed. Such a plot plan shall also include any soil log locations, road cuts, wells, surface water features, utility easements, storm and surface water retention and disposal facilities and other features relevant to the design and installation of an OSS.

3. The applicant shall submit site designs for those proposed lots where the health officer determines that it is unclear that there is sufficient area for an on-site system and one hundred percent reserve area.

4. If existing homes are on any of the proposed lots then the applicant must demonstrate all of the following:

- a. the existing OSS is in substantial conformance with this title;
- b. there is adequate reserve area available for repair or replacement of the system in accordance with this title; and
- c. the continued operation of the system does not pose a threat to public health or groundwater quality. (R&R No. 08-03 § 99, 2008; R&R No. 99-01 § 2 (part), 3-19-99; R&R No. 3 Part 3 § 3, 12-19-86).

13.24.040 Rezones and boundary line adjustments.

A. The general procedures for review of subdivisions outlined in BOH 13.24.010, 13.24.020 and 13.24.030 shall apply to proposed rezones, boundary line adjustments, and other land use changes

where department review is requested by the building or planning official.

B. The applicant for a boundary line adjustment shall submit a scaled plot plan containing at a minimum the following additional information for the health officer's review:

1. The location of any structure or structures or residence or residences with OSS and a reserve area identified;
 2. All lot line boundaries with the lines that are being adjusted clearly marked in a different color or delineation;
 3. All easements and water line;
 4. Parcel numbers for all lots involved, and parcel sizes before and after adjustment of lot lines;
 5. A record drawing of any existing OSS, or detailed on-site work to verify the location of all septic system components and drain lines and designated 100% reserve area;
 6. Water source for each lot, location of all wells drilled or dug or if the source is a spring; and
 7. An updated record drawing showing the new property boundaries in relation to the drainfield.
- (R&R No. 08-03 § 100, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 3 § 4, 12-19-86).

13.28 DESIGN

Sections:

13.28.010	Application submittal, review, approval.
13.28.020	Design support materials.
13.28.030	General design requirements.
13.28.040	Community on-site systems and large on-site systems (LOSS).
13.28.050	Soil test procedures.
13.28.060	Minimum soil depth.
13.28.070	Required absorption area.

13.28.010 Application submittal, review, approval.

A. Application for site design approval for a proposed new OSS installation, repair or replacement of an existing failed soil absorption system, or modification, connection to or expansion of an OSS shall be made on forms provided by the health officer and be accompanied by 1. a plan review fee as set forth in the fee schedule and 2. a plan that demonstrates that the standards required in this title are met.

B. Approval of plans shall expire two years from date of approval unless a valid building permit application has been accepted for review by the building official for construction of the building for which the OSS has been designed. Upon expiration of plan approval or building permit the applicant shall submit a complete new application with fees for review and approval by the health officer.

C. After review of a site design application, the health officer may deny the application if in the health officer's judgment the physical features of the property on which it is proposed to locate the OSS, or the design of the proposed OSS, are not adequate for effective operation of such a system.

D. Each site application denial or withdrawal of a previously issued approval shall be in writing citing the reason or reasons and shall include a notice of the applicant's right to appeal for reconsideration pursuant to this title. (R&R No. 08-03 § 101, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 98 § 6, 12-14-93: R&R No. 77 § 4, 12-11-91: R&R No. 49 § 2, 12-1-89: R&R No. 3 Part 3 § 4 § 1, 12-19-86).

13.28.020 Design support materials. Design of OSS shall be in accordance with this title and shall accommodate all sewage from the buildings and premises to be served. The type of system required shall be determined by a soil and site evaluation conducted by the designer, which shall include location, soil type, vertical separation and other relevant conditions. [All design control panels shall be located with the designated drainfield areas and remain in place until the health officer has issued final approval for the installed OSS.]*

A. The OSS site design application shall include the following:

1. A completed site design application form for the individual OSS that includes the following information:
 - a. approximate address of property;
 - b. parcel number and legal description of property;
 - c. type and size of building the system will support;
 - d. name and address of property owner, applicant and system designer;
 - e. size of the parcel;
 - f. whether the property is within the urban area or rural area as designated by the King County Comprehensive Plan; and, if located within the urban area, the distance of the nearest property line to the closest public sewer line;
 - g. designation of an approved domestic water supply source;
 - h. type of development for which site design application is being made, for example: single-family, multi-family or commercial; and type of permit, for example: new installation, or repair, or limited repair of

an existing OSS;

i. the presence of critical area or areas, including critical aquifer recharge areas, to be delineated on the scaled plot plan;

j. date of testing;

k. original signature in blue ink and Washington state Department of Licensing certificate of competency number of designer or professional engineer's registration number; and

l. all other information requested on the site application for on-site sewage disposal system form.

2. Results of a soil and site evaluation conducted by the designer. The designer shall:

a. provide soil logs that accurately describe subsurface soil conditions present within the primary and reserve soil absorption areas;

b. use soil and site evaluation procedures and terminology in accordance with Chapter 3 and Appendix A of the Design Manual: On-Site Wastewater Treatment and Disposal Systems, United States Environmental Protection Agency, EPA-625/1-80-012, October, 1980 or as amended, except where modified by, or in conflict, with this title;

c. use the soil names and particle size limits of the United States Department of Agriculture Soil Conservation Service classification system;

d. determine texture, structure, compaction and other soil characteristics that affect the treatment and water movement potential of the soil by using normal field and/or laboratory procedures such as particle size analysis;

e. classify the soil as in Table 13.28-3, Soil Textural Classification;

f. describe ground water conditions, including the date of the observation or observations, and the probable maximum water table height;

g. describe existence of structurally deficient soils, such as slide zones and dunes, or those soils subject to major wind or water erosion events;

h. describe the existence and location of critical areas, for example designated flood plains and incorporate into design drawings; and

i. describe the location of any encumbrances affecting system placement, such as:

(1) wells, other water sources and water supply lines;

(2) surface water and storm water infiltration areas;

(3) abandoned wells;

(4) outcrops of bedrock and restrictive layers;

(5) buildings;

(6) property lines and lines of easements;

(7) drainage structures such as footing drains, curtain drains, and drainage ditches;

(8) cuts, banks, and fills;

(9) driveways and parking areas;

(10) existing OSS; and

(11) underground utilities.

3. A completely dimensioned overall parcel plot plan, drawn to a one inch equals twenty feet scale, or the largest scale that will allow the parcel plot plan to be presented on a single page, no smaller than eight and one-half by eleven inches and no larger than eleven by seventeen inches, accurately showing:

a. site drainage characteristics including direction of surface drainage;

b. an arrow indicating north;

c. topographical contours at two foot intervals over the OSS area and all other areas containing features relevant to the design and installation of an adequate and efficient OSS;

d. maximum building footprints, wastewater tanks and primary and reserve soil absorption system locations;

e. all locations of and routes to soil log excavations, with such locations and routes clearly identified by appropriate signage or flagging on the property;

f. [locations of and routes to]* potable water sources near property lines (drilled wells within one hundred feet and all other sources within two hundred feet, and all well heads, with such locations and routes clearly identified by appropriate signage or flagging on the property;

g. location of property and easement lines;

h. location and description of design control point or points within the designated drainfield area;

and

i. the boundaries of the SSAS detail drawing.

4. Construction plans and specifications showing:

a. plumbing stub elevation; and

b. vertical section detail drawings depicting dimensions of wastewater tank details to include minimum and maximum elevation of installation, maximum depth of cover over tanks, acceptable seasonal groundwater table elevation at all tank locations, and depth of required bedding material. For drainfields, minimum and maximum drainfield width and depth, vertical separation and amount of cover

material and placement if any, and any other OSS components to be constructed at the site.

5. A[n] SSAS detail drawing scaled one inch equals twenty feet (or one inch equals thirty feet on larger lots) depicting design control point or points, the dimensions and location of all components of the proposed primary and reserve systems including trench widths, lengths and horizontal separations. If the location of the reserve area is at an elevation above the outlet of the septic tank, the design shall include all tanks, dosing chambers and piping necessary to allow distribution of the effluent to the reserve area with a minimum of disruption to the original subsurface field and other property of the owner. The health officer may require the installation of the dosing chamber, pressure lines and distribution box/inspection box where the future access to the reserve area will be severely limited. Drawings may be submitted electronically in a format acceptable to and with the prior agreement of the health officer.

6. Location of a pump tank controls in plain view of the pump tank shall be included on the design drawings.

7. Construction details for and location of any proposed footing drains, curtain drains and interceptor drains.

8. Calculations and observations supporting the proposed design, including:

- a. soil type; and
- b. hydraulic loading rate in the soil absorption component.

9. An accurate vicinity location sketch and route map to the property, including written directions to the property from the last named street or road. Signage shall be displayed at the entrance to the property and include the names of the designer and applicant. A cleared and flagged route to the soil log and well site locations must be provided from the property entrance.

10. Proof of availability of an approved domestic water supply source.

11. Such other information as the health officer may require.

B. Additional requirements for an application for an OSS serving buildings other than or in addition to single-family residences:

1. Information to establish that the sewage is not industrial wastewater;

2. Information to establish that the sewage effluent applied to the infiltrative surface does not exceed typical residential effluent characteristics by providing waste strength characteristics and parameters;

3. For all commercial developments not classified as community on-site systems, recorded covenants declaring that the owner or owners of the property or properties served by the OSS are responsible for the operation, monitoring, and maintenance of the OSS in accordance with this title; and

4. Proof of a system operation monitoring and maintenance plan in accordance with requirements of BOH chapter 13.60. (R&R No. 08-03 § 102, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 4 § 2, 12-19-86).

***Reviser's note: Material added but not underlined in R&R No. 08-03 § 102.**

13.28.030 General design requirements.

A. Collection systems will be designed to comply with criteria set forth in Criteria for Sewage Works Design, Washington state Department of Ecology, November 2007 or as thereafter amended.

B. Maximum Slopes.

1. OSS shall not be allowed on slopes exceeding forty percent.

2. On slopes exceeding thirty percent, the SSAS shall be pressure distribution and have a maximum SSAS trench width of two feet.

C. SSAS reserve area or areas shall be designated equal to at least one hundred percent of the primary SSAS area. One or more areas may be designated as SSAS reserve areas. If more than one area is designated or if access is limited, at the discretion of the health officer the reserve system may be required to be installed along with the primary SSAS. At least two soil log excavations shall be installed in each designated reserve area. Construction plans for the SSAS reserve area may be required by the health officer.

D. OSS for lots created after July 1, 1984, shall be located on the same lot as the buildings they are designed to serve. Any existing OSS which is failing and for which there is insufficient area on the lot to repair the system may be replaced by an OSS located off-site provided proof of easements is submitted to the health officer. Proof of lot creation date must be provided when requesting use of a drainfield easement for new construction. All drainfield easements shall be surveyed and permanently marked, and the soils within the easements protected against disturbance. Approval shall be subject to such additional conditions as deemed necessary by the health officer to protect public health.

E. Any application for site design approval for OSS in a critical area shall include documentation from the applicable jurisdictional authority indicating critical area review has been completed. All critical areas and their buffers shall be identified and drawn to scale on the design drawing submittals. OSS shall not be located on landforms that are unstable.

F. Where any type of drain is to be installed for the purpose of intercepting subsurface water and channeling, concentrating, focusing or directing its flow onto a downstream property not under the ownership or agency of the applicant or King County, a release of damages holding King County and its employees harmless for any subsequent erosion or loss or limitation of use of such property must be executed and filed with the King County records and elections division and which shall run with the land, prior to approval of any site application.

G. All types of drains installed for the purpose of affecting vertical separation shall be verified as effective during the winter water table season as outlined in BOH 13.28.060.C.

H. No downspout or footing drain shall be directly or indirectly connected to an OSS and the OSS shall be so constructed and installed that surface water or groundwater will not interfere with the operation of the system.

I. Seepage pits shall not be used for the disposal of septic tank effluent.

J. The installation and use of cesspools and pit privies for disposal of sewage is not permitted.

K. When grease traps are used, the design and installation will comply with criteria set forth in the Uniform Plumbing Code, 2006 Edition, International Association of Plumbing and Mechanical Officials, as amended. In addition the design application shall include a grease trap maintenance schedule.

L. When siphon systems are used, they shall comply with Recommended Standards and Guidance for Pressure Distribution Systems, Washington State Department of Health, July 1, 2007.

M. The connection of accessory living quarters as defined in this title to an OSS [is] designed for or in use by a single-family residence or commercial structure may be permitted provided that public health and groundwater quality are not affected, and the OSS is designed for the anticipated increased flow. In medical hardship cases as described in K.C.C. 21A.32.170, the health officer may allow the temporary connection of a mobile home or temporary dwelling to an existing OSS designed only for a single-family residence provided that neither public health nor groundwater quality are negatively affected.

N. Pump lines shall be installed at a depth which precludes disruption or damage by installation of other utilities or freezing.

O. No part of an OSS shall be constructed in the zero rise floodway of a flood hazard area as described by K.C.C. Title 21A. New OSS to serve new subdivisions shall be located outside the limits of a flood hazard area. The installation of new OSS within the flood fringe area of the one-hundred-year flood plain, as determined by DDES or the local building official, may be allowed if the applicant demonstrates that:

1. The proposed building parcel is an existing legal building site;
2. No feasible alternative site outside the flood hazard area is available;
3. Wastewater tanks and electrical components will be flood-proofed to the flood protection elevation;
4. A conforming subsurface soil absorption system can be installed; and
5. DDES or the local building official permits the development which is proposed to be served by the OSS.

P. No part of a SSAS including the drainrock shall be located in fill material or disturbed soils.

Q. SSAS shall be constructed with observation ports terminating within utility boxes adjustable to final grade over the ends of the drainfield pipes, or other methods of drainfield detection approved by the health officer to aid in the future locating of these components.

R. OSS shall not be permitted where a minimum vertical separation of three feet of permeable soil below the infiltrative surface cannot be maintained except as provided in Table 13.28-1. The health officer may require greater vertical separation as needed to protect public health when the aquifer is used for a potable water supply.

**Table 13.28-1
Minimum Treatment Level and Effluent Distribution Method Required by
Various Soil Types, Vertical Separation and Original Soil Depth Conditions**

Vertical Separation in inches	Soil Type			
	1	2	3-4	5-6
18 ^{1,2}	A- pressure with timed dosing	B- pressure with timed dosing	B- pressure with timed dosing	B- pressure with timed dosing
>18≤24	B- pressure with timed dosing	B- pressure with timed dosing	B- pressure with timed dosing	B- pressure with timed dosing
>24≤36	B- pressure with timed dosing	C- pressure with timed dosing	E- pressure with timed dosing	E-pressure with timed dosing
>36≤60	B- pressure with timed dosing	E- pressure with timed dosing	E- pressure with timed dosing	E- pressure with timed dosing
>60	C- pressure with timed dosing	E- gravity	E- gravity	E- pressure with timed dosing

Table 13.28-1 Explanatory Notes

1. Except as provided in footnote 2, the minimum required original, undisturbed, permeable soil depth is eighteen inches.

2. For existing lots of record where the original undisturbed soil depth above a restrictive layer is between 12 and 18 inches the following is required:
- Minimum lot size is 5 acres. Any lot area placed into a separate sensitive area protection tract in accordance with King County Code Section 21A.24.180 may also be included in the computation of the minimum five (5) acre lot size required by this section.
 - The owner shall file a covenant with the King County records and elections division agreeing not to subdivide the parcel utilizing the OSS to less than 5 acres until public sewer service is provided.
 - A water table study shall be conducted during a time of high seasonal water table to establish available soil depth.
 - A system meeting treatment level A, or two treatment level B systems in combination meeting treatment level A without the use of disinfection, such as a mound preceded by an intermittent sandfilter, shall be used.

S. Disinfection may not be used:

- To achieve the fecal coliform requirements to meet treatment levels A or B in Type 1 soils; or treatment level C; or
- On lots with less than eighteen inches of soil; or
- In a critical aquifer recharge area.

T. The coarsest textured soil within the vertical separation selected determines the minimum treatment level and method of distribution.

U. Based upon the treatment capacity and design flow the designer of an OSS shall establish the operational capacity of the system. This information shall be included with the design application and record drawing submission.

V. Any reduction in horizontal separation for a pressure sewer line crossing a surface water source shall meet the requirements of the publication, Granting Waivers from State On-site Sewage System Regulations, chapter 246-272A WAC, as amended, published by the Washington state Department of Health.

W. All OSS must comply with the applicable treatment levels contained in Table 13.28-1 and applicable setbacks contained in Table 13.28-2; though the health officer may grant any setback reduction authorized under Table 13.28-2 only in response to a written request for such reduction from the designer of record if the request includes all reasons for the proposed reduction and describes all mitigation measures required under this title or as may be required by the health officer in the exercise of reasonable discretion for the protection of the public health.

X. In preparing any OSS site design application, the designer shall consider:

- CBOD₅, TSS and O and G;
- Other parameters that can adversely affect treatment anywhere along the treatment sequence. Examples include pH, temperature and dissolved oxygen;
- The sensitivity of the site where the OSS will be installed, such as shellfish growing areas, designated swimming areas, and other areas identified in the management plan.

Y. Nitrogen contributions, where nitrogen has been identified as a contaminant of concern by the management plan, shall be addressed through either lot size or treatment, or both.

**Table 13.28-2
Minimum Horizontal Separations
(Setbacks)**

Items Requiring Setback	MEASURE FROM		
	Edge of soil dispersal component trench or reserve area	Septic tank, holding tank, containment vessel, pump chamber, and distribution box	Building sewer, collection, and nonperforated distribution line ¹
Potable Water Source ²			
– Private well	100 ft.	100 ft.	100 ft.
– Public drinking water well	100 ft.	100 ft.	100 ft.
– Drinking water spring/dug well ³	200 ft.	200 ft.	200 ft.
Pressurized water supply line ⁴	10 ft.	10 ft.	10 ft.
Properly decommissioned well ⁵	10 ft.	10 ft.	N/A
Surface water ^{2, 6, 7}	100 ft.	50 ft.	10 ft.
Seasonal water ^{2, 7}	30 ft.	15 ft.	
Swimming Pools			
A. Down-gradient ⁸	A. 15 ft. + height of the cut. Need not exceed 30 ft.	5 ft.	2 ft.
B. Up-gradient ⁸	B. 10 ft.	5 ft.	2 ft.
C. If underdrains are present, either down-gradient or up-gradient ⁸	C. 30 ft.	N/A	N/A
Building foundation:			
A. Down-gradient ⁸	A. 15 ft. + height of foundation cut. Need not exceed 30 ft. ^{8, 9}	5 ft.	2 ft.
B. Up-gradient ⁸	B. 10 ft.	5 ft.	2 ft.
Property or easement line	10 ft. ^{10, 11}	5 ft.	N/A

Decks (first floor) with post and pier supports	5 ft.	5 ft.	N/A ¹⁵
Decks - post and block (2nd Floor at least 6 ft. high)	2 ft. Outside a line from any pier supports	Not under any pier supports	N/A
Decks Cantilevered (at least 6 ft. high)	0 ft.	0 ft.	N/A
Septic tanks, pump tanks, treatment tanks, sandfilter containment vessels:			
A. Down-gradient ⁸	A. 15 ft. + height of excavation. Need not exceed 30 ft. ⁹	N/A	N/A
B. Up-gradient ⁸	B. 5 ft.		
Interceptor/curtain drains/footing drains.			
– Down-gradient ⁸	30 ft.	5 ft.	N/A
– Up-gradient ⁸	10 ft.	N/A	N/A
Infiltration and Dispersion Trenches			
A. Down-gradient ⁸	30 ft.	10 ft.	5 ft.
B. Up-gradient ⁸	100 ft. ¹⁴	30 ft.	5 ft.
Down-gradient cuts or banks 5 ft. or less in vertical height	15 ft. + height of bank ^{9, 13}		
Down-gradient cuts or banks greater than 5 ft. in vertical height with at least 5 ft. of original, undisturbed soil above a restrictive layer due to a structural or textural change ⁸	15 ft. + height of bank but shall not be less than 25 ft. ^{9, 12}	N/A	N/A
Down-gradient cuts or banks greater than 5 ft. in vertical height with less than 5 ft. of original, undisturbed soil above a restrictive layer due to a structural or textural change ⁸	15 ft. + height of bank but shall not be less than 50 ft. ¹²	N/A	N/A

Table 13.28-2 Explanatory Notes

1. "Building sewer" as defined by the most current edition of the Uniform Plumbing Code. "Nonperforated distribution" also includes pressure sewer transport lines.

2. With excessively permeable soils or other sites where conditions indicate a greater potential for ground or surface water contamination or pollution such as unconfined aquifers, shallow or saturated soils, dug wells, and improperly abandoned wells, the distance from any water supply or surface water may be increased by the health officer.

3. Setbacks from private or public springs and from shallow wells without intact casings or those wells which are not constructed in accordance with chapter 173-160 WAC and are utilized as a source of drinking water shall comply with BOH 13.04.070.C.

4. The health officer may approve a sewer transport line crossing a water supply line [if the sewer line when there is no other reasonable means to keep them from crossing and if the sewer line is constructed]* in accordance with Section 2.4 of the Department of Ecology's Criteria for Sewage Works Design, revised November 2007 or equivalent.

5. Before any component may be placed within one hundred feet of a well, the designer shall submit a "decommissioned water well report" completed by a licensed well driller, which verifies that appropriate decommissioning procedures noted in chapter 173-160 WAC were followed.

6. Setback measured from ordinary high water mark of surface water. Greater setback may be required to prevent pollution. The health officer will state reasons for greater setback to applicant in writing.

7. This separation may not be reduced by culverting of streams without prior written approval for the culverting from King County or applicable building official, but in no case shall this separation be less than fifteen feet plus the height of the excavation which contains the culvert. Need not exceed thirty feet.

8. The item is down-gradient when liquid will flow toward it upon encountering a water table or a restrictive layer. The item is up-gradient when liquid will flow away from it upon encountering a water table or restrictive layer.

9. May be reduced to ten feet by the health officer when bottom of infiltrative surface is downgradient from the base of the foundation cut or wastewater tank excavation, or there is at least five feet of original undisturbed unsaturated soil above a restrictive layer formed due to a structural or textural change.

10. May be reduced five feet by the health officer in repairs to existing systems, in setbacks to easements or where a confirmed property line is up-gradient from the soil absorption component. A survey may be required by the health officer to ensure compliance with setback requirements.

11. This distance may be increased to thirty feet by the health officer where cuts or construction on neighboring properties may affect the system.

12. Need not exceed one hundred feet.

13. May be reduced to ten feet when the bottom of the infiltrative surface is below the base of the cut or bank and no restrictive layer or layer formed due to a structural or textural change is intersected or there is at least five feet of original, undisturbed soil above a restrictive layer or layer due to a structural change.

14. The health officer may reduce this setback to thirty feet if the soil depth is four feet or greater and is soil type 1, 2 or 3.

15. Any sewer clean-out shall be accessible for OSS maintenance or repair.

(R&R No. 08-03 § 103, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 4 § 3, 12-19-86).

*Reviser's note: Material added but not underlined in R&R No. 08-03 § 103.

13.28.040 Community on-site systems and large on-site systems (LOSS).

A. Design of large on-site systems shall be subject to review by DOH in accordance with chapter 246-272B WAC, as amended. Design of community on-site systems that do not otherwise qualify as LOSS shall be subject to review by the health officer in accordance with this title.

B. Prior to construction, plans and specifications for community on-site systems not qualifying as LOSS shall be submitted for approval to the health officer in accordance with this title. All preliminary reports and plans and specifications for new community on-site systems, extensions or alterations shall be prepared by a sewage system designer certified as provided in BOH 13.20.020 or by an engineer as

defined by this title. Any project exceeding three thousand five hundred gallons per day shall be designed by an engineer. Within sixty days following the completion of and prior to the use of any LOSS or community system project or portion thereof a certification shall be made to the department and signed by the system designer or engineer declaring that he or she has inspected the physical facilities of the project, and the designed physical facilities are constructed in accordance with this title and with the plans and specifications approved by the health officer.

C. Management and maintenance of community on-site systems that do not qualify as LOSS shall comply with BOH 13.60.020. Before obtaining a permit for installation of such a community OSS, the applicant shall provide to the health officer proof of ownership or management of the OSS in perpetuity by an approved public entity.

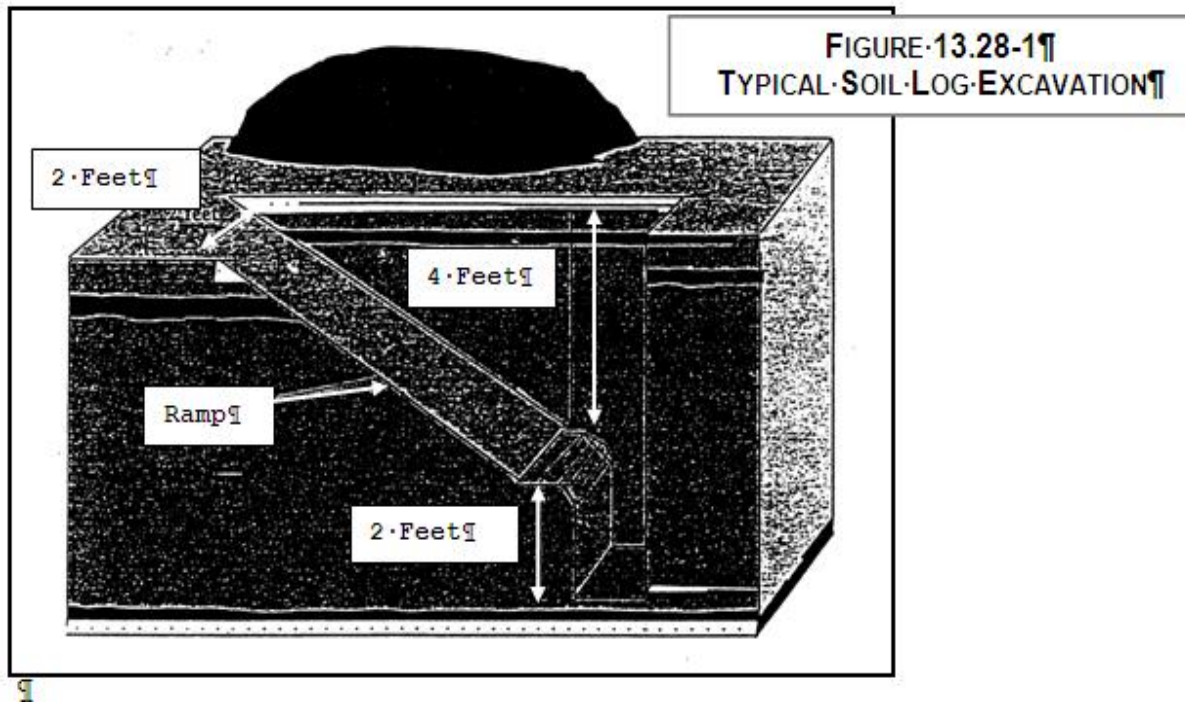
D. After obtaining the health officer's approval of the preliminary report and design plans and specifications, the applicant shall obtain an OSS installation permit prior to installing the community on-site system. In addition, the applicant shall obtain an OSS installation permit for each residence prior to installing any septic tank, pump tank, if needed, and connecting line to the community on-site system. (R&R No. 08-03 § 104, 2008; R&R No. 99-01 § 2 (part), 3-19-99; R&R No. 3 Part 4 § 4, 12-19-86).

13.28.050 Soil test procedures.

A. Soil logs. Results of all soil logs shall be submitted as part of the application for design approval. Soil log excavation shall meet the following requirements:

1. Allow examination of the soil profile in its original position by excavating pits of sufficient dimensions, but not less than three feet in diameter from top to bottom of the excavation, to enable observation of soil characteristics by visual and tactile means. The pits shall be constructed to a depth three feet deeper than the bottom of the proposed infiltrative surface, but shall be no deeper than the depth of the water table or restrictive layer. All soil logs dug with a backhoe shall be ramped unless otherwise waived by the health officer.

*



2. For single-family structures: soil logs shall include four or more test holes located in representative parts of the proposed primary and reserve soil absorption areas and shall be separated by at least twenty feet. At least two shall be located in the primary SSAS area and two in each area designated for the reserve SSAS area. One soil log shall be located in the area of the proposed wastewater tanks. One soil log shall be located in the area of the treatment device, such as a sand filter or ATU unit, if that device is greater than thirty feet from the wastewater tanks.

3. Soil log requirements for other than single family residences: For non-single-family development, soil logs shall be made from one or more test holes for each one thousand five hundred square feet total primary and reserve SSAS areas, but not less than four soil logs shall be provided. At least two soil log excavations shall be in the primary and two in each area designated for the reserve SSAS area.

4. Labeling of soil logs: Soil logs shall be marked with a suitable flag or label with an indelible identifying number or letter and designer's name. Corresponding numbers or letters shall appear on the design plan and be accurately located on the SSAS.

5. Soil log determinations: Allow determination of the soil's texture, structure, color, bulk density or compaction, water absorption capabilities or permeability, and elevation of the highest seasonal water table.

6. Use of soil nomenclature: Use the soil names and particle size limits of the United States Department of Agriculture Soil Conservation Service classification system.

7. Soil classification: Classify the soil as in Table 13.28-3, Soil Textural Classification, describing soil type, depth of each type and any evidence of seasonal water table. Soil particle size analysis and/or percolation tests may be required by the health officer where identification of soil absorption characteristics is in question.

**Table 13.28-3
Soil Textural Classification**

Soil Type	Soil Textural Classifications
1	Gravelly and very gravelly ¹ coarse sands, all extremely gravelly ² soils excluding soil types 5 and 6, all soil types with greater than or equal to 90% rock fragments.
2	Coarse sands.
3	Medium sands, loamy coarse sands, loamy medium sands.
4	Fine sands, loamy fine sands, sandy loams, loams.
5	Very fine sands, loamy fine sands, or silt loams, sandy clay loams, clay loams and silty clay loams with a moderate or strong structure (excluding platy structure).
6	Other silt loams, sandy clay loams, clay loams, silty clay loams.
7 Unsuitable for disposal	Sandy clay, clay, silty clay, and strongly cemented or firm soils, soil with moderate or strong platy structure, any soil with a massive structure, any soil with appreciable amounts of expanding clays.

Table 13.28-3 Explanatory Notes

1. Very Gravelly = >35% and <60% gravel and coarse fragments, by volume.
2. Extremely Gravelly = >60% gravel and coarse fragments, by volume.

8. Soil log safety measures: The owner of the property shall be responsible for constructing and maintaining the soil log excavations in a manner to minimize potential for physical injury by:

- a. placing excavated soil no closer than two feet from the excavation;
- b. providing an earth ramp or steps to a depth of four feet, for safe egress, then completing the excavation to gain the additional depth of two feet necessary to observe the six feet of soil face; however, these deepest two feet are not to be entered;
- c. providing adequate physical safeguards such as covers, flagging or fencing over, around, or both over and around the excavation's perimeter so as to prevent injury or damage to the general public or creation of a hazard to animals; and
- d. filling the excavation with compacted soil upon completion of the soil log evaluation.

9. Soil and site evaluation procedures: Use the soil and site evaluation procedures and terminology in accordance with Chapter 5 of the On-site Wastewater Treatment Systems Manual, United States Environmental Protection Agency 625/R-00-008, February 2002 except where modified by, or in conflict with, this title.

B. Percolation tests. When percolation tests are conducted, the tests shall be consistent with the procedure outlined in the Design Manual: On-site Wastewater Treatment and Disposal Systems, United States Environmental Protection Agency, EPA-625/1-80-012, October, 1980, except where modified by, or in conflict with, this title. Test holes shall be maintained and protected by the owner so as to prevent injury or damage to the general public or the creation of a hazard to animals and the owner shall fill the test holes with compacted soil upon completion of evaluation.

C. Particle size analysis. When particle size analysis tests are conducted, the procedure used shall be consistent with American Society for Testing Materials Standard D-442. Sample for testing shall be collected by the OSS designer in the presence of the health officer or from an identified location, subject to the prior agreement of the health officer. (R&R No. 08-03 § 105, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 4 § 5, 12-19-86).

***Reviser's note: Graphic not included but not deleted in R&R No. 08-03 § 105.**

13.28.060 Minimum soil depth.

A. All OSS shall have a minimum vertical separation as outlined in Table 13.28-1 of this code. A minimum of eighteen inches of original permeable soil is required above any seasonal high water table or impervious layer of soil on all sites to be considered for OSS except that less than eighteen inches but not less than twelve inches may be allowed by the health officer provided the lot size is not less than five acres, and a treatment level A system is used which allows for twelve inches of vertical separation or two treatment level B systems (without use of disinfection to meet that standard) are used such as a sandfilter

to mound OSS, and the owner files a covenant with the King County records and elections division agreeing not to subdivide the parcel until public sewer service is provided.

B. Where marginal soil conditions exist, the health officer may require that additional investigation be conducted.

C. Where there is evidence or probability of high winter water table or a shallow restrictive layer, the health officer may require that additional testing or monitoring be conducted to verify water table levels. The applicant's plan for conducting such testing shall be specified in a water table monitoring plan which shall be submitted no later than December 1, to allow adequate time to monitor and evaluate the seasonal water table. If not a part of a full site design application submission the plan shall be accompanied by a fee as specified in the fee schedule. The health officer shall render a decision on the acceptability of the results of the seasonal high water table testing or monitoring within twelve months of receiving the application, contingent upon presence of precipitation conditions typical for the region. (R&R No. 08-03 § 106, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 4 § 6, 12-19-86).

13.28.070 Required absorption area.

A. Single-family dwellings. For design purposes one hundred fifty gallons/bedroom/day shall be utilized in determining unit volume with a minimum of three bedrooms. For each additional bedroom OSS designs must use at least an additional one hundred twenty gallons/bedroom/day. Loading rates shall be determined according to soil texture type as outlined in Table 13.28-4. The finest textured soil in the selected vertical separation establishes the loading rate.

**Table 13.28-4
Maximum Hydraulic Loading Rate For Residential Sewage¹
Soil Textural Classification Description**

<u>Soil Type</u>	<u>Soil Textural Classification Description</u>	<u>Loading Rate for Residential Effluent Using Gravity or Pressure Distribution (gal./sq.ft./day)⁵</u>
1	Gravelly and very gravelly ² coarse sands, all extremely gravelly ³ soils excluding Soil types 5 & 6, all soil type with greater than or equal to 90% rock fragments	1.0 ⁴
2	Coarse sands	1.0
3	Medium sands, loamy coarse sands, loamy medium sands.	0.8
4	Fine sands, loamy fine sands, sandy loams, loams.	0.6 ⁶
5	Very fine sands, loamy very fine sands; or silt loams, sandy clay loams, clay loams and silty clay loams with a moderate structure or strong structure (excluding a platy structure).	0.4 ⁶
6	Other silt loams, sandy clay loams, clay loams, silty clay loams.	0.2 ^{6,7}
7	Sandy clay, silty clay and strongly cemented firm soils, soil with a moderate or strong platy structure, any soil with a massive structure, any soil with appreciable amounts of expanding clays.	Not suitable

Table 13.28-4 Explanatory Notes

1. Compacted soils, cemented soils, and/or poor soil structure may require a reduction of the loading rate or render the soil unsuitable for OSS.

2. Very Gravelly = >35% and <60% gravel and coarse fragments, by volume.

3. Extremely Gravelly = >60% gravel and coarse fragments, by volume.

4. Due to the highly permeable nature of type 1 soil, only systems which meet or exceed the treatment levels required in Table 13.28-1 may be installed.

5. The loading rate listed for the soil type present in the nongravel portion is to be used for calculating the minimum absorption area required. The value is to be determined from this table.

6. OSS installed in soil texture type 4, type 5 or type 6 shall be constructed during dry weather (defined as at least two consecutive weeks without appreciable rainfall) and dry soil conditions to minimize compaction and smearing during excavation, as verified at the site.

7. SSAS in soil type 6 must utilize pressure distribution.

B. Buildings other than single-family residences.

1. Soil dispersal components having daily design flow between one thousand and three thousand five hundred gallons of sewage per day shall:

- a. be located only on soil types 1 through 5;
- b. be located only on slopes of less than thirty percent, or seventeen degrees; and
- c. have pressure distribution and timed dosing.

2. Schools with OSS and who use laboratories and shop facilities shall have plumbing drains for these facilities directed to holding tanks separate from the common wastewater drains to the OSS.

3. For OSS treating sewage from a nonresidential source, the designer shall provide the following:

a. information showing that none of the chemicals or other materials listed in BOH 13.04.058 will be introduced into the OSS; and

b. a site-specific design providing the treatment level equal to or greater than the treatment level required of sewage from a residential source.

4. The owner of an OSS for a commercial development not classified as a community on-site

system shall file a covenant declaring that the owner is responsible for the operation, monitoring and maintenance of the OSS in accordance with this title.

5. Required absorption area must be determined by using one of the following methods:

a. by using the figures given in Table 13.28-5, or the Onsite Wastewater Treatment Systems Manual, EPA/625/R-00/008, as amended, then using the appropriate application rate from Table 13.28-4; or

b. by determining average water meter readings for one year from at least three similar establishments and adding a minimum safety factor of fifty percent. Both operating capacity and surge capacity must be determined.

6. The minimum SSAS area must be not less than two hundred square feet.

Table 13.28-5

Type of Establishment ¹	Gallons Per Person Per Day
Multiple Family Dwelling (per person – 2 per bedroom – Minimum of 2 bedrooms per unit)	75
Factories, office buildings, etc. (add 100 gallons/day for each utility sink per shift; food establishment not included)	20
Food Establishments – with food preparation	50 (gallons per seat)
Taverns – no food preparation (estimate patrons per day and add 15 gallons/employee)	5
Mobile Home Parks (figure minimum 3 bedrooms, 2 people per bedroom)	75
Resort Camps	50
Work or Construction Camps	50
Day Camps (no meals served)	15
Swimming Pools and Bathhouse (sanitary facilities only)	15
Country Clubs (per member present, add 15 gallons/day per employee)	130
Motels with kitchen (figure 2 persons per bed space)	50
Motels (figure 2 persons per bed space)	40
Theaters (per auditorium seat)	5
Airports (per passenger)	5
Retail Stores (per toilet room for customer use)	650
Retail Stores (per employee per shift – add 100 gallons/day for each utility sink)	15
Service Stations (per vehicle served)	15
Churches without kitchen (seating capacity)	5
Churches with kitchen (seating capacity)	15
Recreational Vehicle Parks (without sewer and water hookups – with central toilets and showers – per space)	50
Recreational Vehicle Parks (with sewer and water hookups – with central toilets and showers – per space)	100
Boarding Houses (per person)	50
Campgrounds (with central comfort station – with flush toilets and showers – per space)	50
Campground (with central comfort station – without showers – per space)	25
Picnic Parks (flush toilets only – per person)	5
Picnic Parks (with flush toilets – bathhouse and showers – per person)	10
For uses not listed in this table, the upper range values in Onsite Wastewater Treatment Systems Manual, February 2002, EPA/625/R-00/008, as amended, United States Environmental Protection Agency, shall be used. If the type of facility is not listed in the EPA design manual, design flows from one of the following shall be used:	
(A) Design Standards for Large On-site Sewage Systems, 1993, Washington State Department of Health (available upon request to the department); or	
(B) Criteria for Sewage Works Design, revised November 2007, Washington State Department of Ecology (available online).	

¹For buildings other than single-family residences the requirements of Section 13.28.020(B) shall be met. (R&R No. 08-03 § 107, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 4 § 7, 12-19-86).

13.32 BUILDING SEWERS

Sections:

- 13.32.010 General.
- 13.32.020 Pipe specifications.
- 13.32.030 Joints and grading.
- 13.32.040 Pipe bends.
- 13.32.050 Cleanouts.
- 13.32.060 Minimum horizontal separation.

13.32.010 General. Construction, materials, distance separations and other specifications shall be as set out in this chapter. (R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 5 § 1(A), 12-19-86).

13.32.020 Pipe specifications. Pipe for constructing the building sewer shall be a minimum of four inches (4") inside diameter and be cast-iron or plastic composition which complies with the current King County Plumbing Code. Polyvinyl chloride pipe shall comply with American Society of Testing Materials (ASTM) specification D-3034 as a minimum. (R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 5 § 1(A)(1), 12-19-86).

13.32.030 Joints and grading. Construction of the building sewer line shall be such as to secure watertight joints and it shall be on a grade of not less than one eighth inch (1/8") per foot. (R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 5 § 1(A)(2), 12-19-86).

13.32.040 Pipe bends. No straight T's or ninety degree (90°) ells shall be permitted in the building sewer line and all forty-five degree (45°) or more acute bends shall have accessible cleanouts. Sanitary T's shall be acceptable. (R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 5 § 1(A)(3), 12-19-86).

13.32.050 Cleanouts. Building sewers of four-inch diameter shall have cleanouts installed at intervals of not more than fifty feet and building sewers of six inch diameter and larger shall have cleanouts installed at intervals of not more than one hundred feet. One cleanout shall be placed between the house and the septic tank with access to grade. (R&R No. 08-03 § 108, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 5 § 1(A)(4), 12-19-86).

13.32.060 Minimum horizontal separation. Minimum horizontal separations shall be as indicated in Table 13.28-2 (Horizontal Setbacks). (R&R No. 08-03 § 109, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 5 § 1(A)(5), 12-19-86).

13.36 WASTEWATER TANKS

Sections:

- 13.36.010 Design standards.
- 13.36.020 Construction.
- 13.36.030 Location, installation and maintenance.

13.36.010 Design standards.

A. No septic tank, effluent pump tank, sewage holding tank, grease trap or any other sewage tank may be installed in King County unless:

1. The tank is included on the DOH publication, List of Approved On-site Sewage Tanks;
2. The tank conforms to the DOH publication, Recommended Standards and Guidance for Performance, Application, Design, Construction, Installation and Testing On-site Sewage System Tanks, July 1, 2007, as amended; and
3. The health officer has approved plans for the tank installation. Such plans shall show all dimensions, reinforcing, structural details and other pertinent data as required by the health officer. Upon approval by the health officer, the plans will be assigned an official number.

B. Tanks made of materials other than concrete shall be approved by the secretary prior to approval by the health officer.

C. No pre-cast wastewater tank may be installed except those which are included on the registered list and have been clearly and legibly marked on the upper surface of the lid showing the number assigned by the health officer, name of the manufacturer, tank model number, tank capacity in gallons and date of manufacture.

D. No metal septic tanks shall be installed in areas under the jurisdiction of the department.

E. All septic tanks, whether they are installed or used singly, in series or in a divided system, must be designed according to waste load and in no case shall have a total capacity of less than one thousand five hundred gallons, except by written permission of the health officer.

Minimum Capacities for Single-Family Residence Septic Tanks

Number of Bedrooms	Minimum Liquid Capacity Below Outlet Invert (Gallons)
4 or less	1500
Each additional bedroom, add	250
Garbage grinder installed, add ¹	250

1. Use of garbage grinders increases settleable and floatable solids accumulations in the septic tank, increases wastewater strength and thus increases the potential for system failure especially if frequent and regular tank monitoring and maintenance is not performed. Therefore, use of garbage grinders is not recommended (See Section 13.60.005(A)(3)).

F. No septic tank with a compartment smaller than two hundred fifty gallons liquid capacity may be installed.

G. A septic tank designed to service any facility except a single-family residence or multiple family housing shall have a liquid capacity at least equal to three times the projected design flow, with a minimum of one thousand five hundred gallons. Septic tanks serving multiple family housing shall have a minimum liquid capacity equal to two times the projected design flow but not less than one thousand five hundred gallons.

H. All septic tanks or combinations of tanks installed shall provide at least two compartments. No wastewater tanks may be joined below the normal inverts unless otherwise preapproved by the health officer.

I. When multi-compartment tanks or two or more tanks in series are used, the first compartment or tank shall have a liquid capacity of two-thirds to three quarters of total required liquid capacity.

J. The minimum liquid capacity of a tank receiving intermittent use shall be determined from the maximum expected daily waste load, but shall in no case be less than one thousand five hundred gallons.

K. The plan review fee shall be as specified in the fee schedule, payable at the time of initial plan submission. In addition to the initial plan review fee, a revision review fee shall be assessed as specified in the fee schedule, payable at the time of completion of the plan review, for review of any resubmissions, corrections or additions required. (R&R No. 08-03 § 110, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 77 § 5, 12-11-91: R&R No. 3 Part 5 § 2(A), 12-19-86).

13.36.020 Construction.

No wastewater tank may be sold for installation, or installed which does not comply with this title.

A. Wastewater tanks shall be constructed of sound and durable materials not subject to corrosion or excessive deterioration and shall be watertight, constructed and installed to prevent the entrance of rainwater, surface drainage or groundwater. Baffles shall be of rigid material and secured to the compartment wall.

B. Newly installed septic tanks shall be equipped with a removable cartridge-type outlet baffle filter. An inspection/cleanout access port of sufficient diameter with a secured lid at or above finished grade shall be provided to allow convenient access for filter inspection and cleaning.

C. Septic tanks must be provided with a maintenance access port or removable cover for each compartment (minimum dimension eighteen inches) for septic tank inspection and sludge removal. All baffles shall have removable covers or properly placed maintenance access ports with a minimum diameter of six inches, and the maintenance access cover or inlet and outlet covers shall have adequate permanent handles. If effluent filters are used, access to the filter at finished grade is required.

D. In each septic tank the inlet baffle or submerged pipe shall extend approximately six inches below the liquid surface and above the liquid surface at least to the crown of the inlet sewer.

E. In each septic tank the outlet baffle or submerged pipe shall extend below the liquid level a distance approximately equal to twenty-eight percent to forty percent of the liquid depth, and these baffles or pipes shall extend at least six inches above the liquid level to provide for scum storage.

F. Septic tanks shall have at least one inch between the under side of the top of the tank and top of inlet and outlet pipes or baffles to allow the required ventilation of the tank and disposal field through the main building vent stacks.

G. The invert of the inlet pipe in each septic tank must be at least three inches above the outlet invert.

H. Each compartment dividing wall shall have a minimum four inches diameter opening, the invert of which is a minimum of one inch and a maximum of three inches below the outlet invert. A baffle shall be located on the inlet side of the wall and shall extend a minimum of eighteen inches below the outlet and shall extend a minimum of six inches above the liquid level. (R&R No. 08-03 § 111, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 5 § 2(B), 12-19-86).

13.36.030 Location, installation and maintenance.

A. Minimum separation distances shall be as indicated in Table 13.28-2.

B. No septic tank or dosing tank shall be located under paving unless the maintenance access and inspection ports are extended up through the paving and the maintenance access port is equipped with a locking-type cover and is approved as a traffic-bearing tank.

C. Each septic tank compartment shall be equipped with locking type maintenance access ports extending to grade to provide access for preventive maintenance inspections or sludge removal. Maximum riser height shall not exceed three feet.

D. It is unlawful to construct, maintain, own or operate any septic tank or other receptacle for human excrement that directly or indirectly discharges sewage upon the surface of the ground, or into any waters of the state.

E. Sewage tanks shall be located in an area or areas accessible for periodic inspection and sludge removal.

F. Sewage tanks shall be located, installed and maintained to preclude surface and ground water from entering the tank. Sewage tanks shall be installed so that the outlet invert is higher than the maximum seasonal water table.

G. Unless otherwise provided by the health officer in writing, all sewage tanks shall be tested and demonstrated to be watertight in accordance with the method prescribed ASTM C127-07a Section 9.1.1-Vacuum Testing or 9.1.2-"Hydrostatic Testing" following installation and prior to being put into service by the project design engineer, designer or installer. Results of this test shall be available for review by the health officer at the time of final inspection. The designer shall submit verification of this testing with the record drawing documents.

H. Sewage tanks shall be installed and bedded according to the manufacturer's directions and upon a level, stable base that will not settle. Instructions for installation shall be supplied by the manufacturer to the OSS designer or installer of record at the time of installation. (R&R No. 08-03 § 112, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 5 § 2(C), 12-19-86).

13.40 PUMP TANKS

Sections:

- 13.40.001 Specifications - general.
- 13.40.005 Location.
- 13.40.010 Siphon or pump requirements.
- 13.40.020 Manholes.
- 13.40.030 Size requirement.
- 13.40.040 Pump switch location.
- 13.40.050 Sewage effluent pump specifications.

13.40.001 Specifications - general.

A. No pump chamber shall be manufactured for use in King County, constructed or installed unless it is included on the registered list.

B. Pumps, fittings and controls shall be provided and installed in accordance with the Recommended Standards and Guidance for Pressure Distribution Systems, Washington State Department of Health as amended and Figure 13.40-1 of this title.

C. Pumps and electrical wiring shall conform to all applicable state and local electrical codes and the permanent wiring shall be installed prior to notification of the health officer for final inspection.

D. Except by written permission of the health officer, pump tanks shall be at least one thousand five hundred gallons liquid capacity. (R&R No. 08-03 § 113, 2008: R&R No. 99-01 § 2 (part), 3-19-99).

13.40.005 Location.

A. Minimum separation distances shall be as indicated in Table 13.28-2.

B. Pump tanks shall be located in an area or areas accessible for periodic inspection, maintenance and sludge removal.

C. For systems using pumps, clearly accessible controls and warning devices are required including:

1. Process controls such as float and pressure activated pump on/off switches, pump-run timers and process flow controls;
2. Diagnostic tools including dose cycle counters and hour meters on the sewage stream, or flow meters on either the water supply or sewage stream; and
3. Audible and visual alarms designed to alert a resident of a malfunction. The alarm is to be placed on a circuit independent of the pump circuit.

D. Pump tanks shall be located, installed and maintained to preclude surface and ground water from entering the tank and shall be tested and demonstrated to be watertight in accordance with the methods prescribed in BOH chapter 13.36 of this title following installation and prior to being put into service. (R&R No. 08-03 § 114, 2008: R&R No. 99-01 § 2 (part), 3-19-99).

13.40.010 Siphon or pump requirements. Dosing systems shall be equipped with an automatic siphon or pump or duplicate alternating siphons or pumps. (R&R No. 08-03 § 115, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 5 § 3(A), 12-19-86).

13.40.020 Manholes. Pump chambers shall be equipped with locking-type manholes extending to grade to provide access to the dosing tank for inspection and maintenance. (R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 5 § 3(B), 12-19-86).

13.40.030 Size requirement. The dosing tank shall be of sufficient size so as to provide the

required one day's total dosing gallonage plus one day's estimated waste volume but shall not be less than one thousand five hundred gallons. (R&R No. 08-03 § 116, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 5 § 3(C), 12-19-86).

13.40.040 Pump switch location. Effluent pump switching mechanisms shall not be located within the effluent tank, except for sealed floats. (R&R No. 08-03 § 117, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 5 § 3(D), 12-19-86).

13.40.050 Sewage effluent pump specifications. Designs utilizing sewage effluent pumps shall specify:

A. A minimum three-inch separation between the bottom of the pump tank and the pump intake opening; however, a pump shroud may be used in place of the three inch block to preclude solids from entering the pump;

B. A disconnect union or an appropriate disconnect device;

C. A check valve on the outlet side of a union;

D. Filtering for pumps, if provided, must meet the following minimum criteria:

1. One-eighth inch mesh size;

2. Noncorrosive material;

3. Cannot interfere with switches or floats; and

4. Easily removable for cleaning.

E. Pumps or dosing devices shall be specified by the manufacturer as suitable for the intended purpose.

*

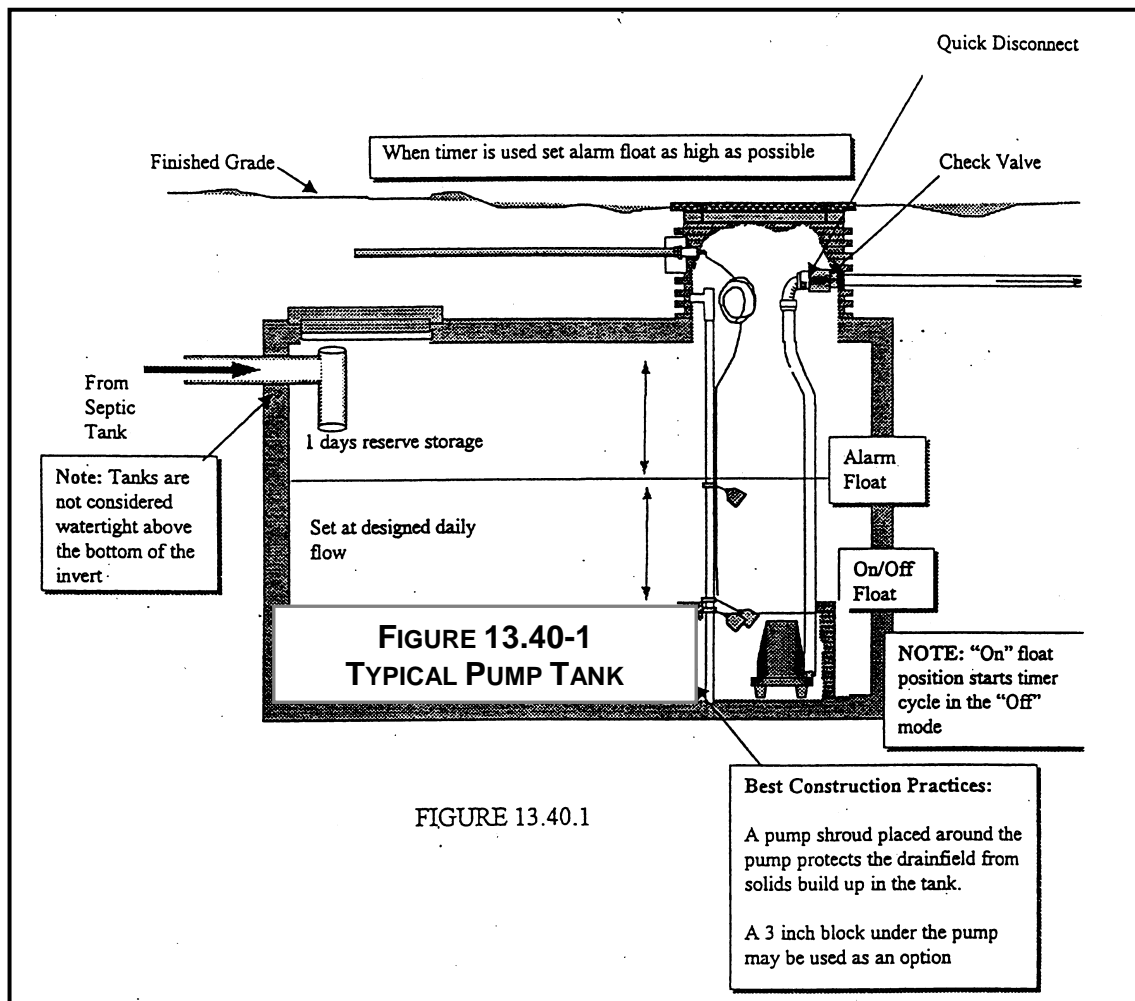


FIGURE 13.40.1

(R&R No. 08-03 § 118, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 5 § 3(E), 12-19-86).

*Reviser's note: Graphic not included but not deleted in R&R No. 08-03 § 118.

13.44 DISTRIBUTION AND INSPECTION BOXES

Sections:

13.44.010 Specifications--general.

13.44.010 Specifications--general.

A. No inspection box or distribution box shall be manufactured, sold or installed which is not constructed of durable, watertight materials and which is not equipped with an adequate removable cover.

B. The inspection box or distribution box shall be set on a concrete pad or tamped crushed rock to prevent misalignment.

C. The inspection box or distribution box shall be constructed and installed so the inlet invert is not less than four inches above the level of the outlet invert or inverts, and the outlet inverts shall be not less than two inches above the floor of the box.

D. The inspection box or distribution box shall be installed with at least thirty-six inches of four-inch tightline extending from each outlet. There shall be no drainrock within thirty-six inches of the inspection box.

E. There shall be no driving, parking, paving, or construction over the distribution or inspection box.

F. The distribution or inspection box shall have an inspection access with a secured lid at finished grade. (R&R No. 08-03 § 119, 2008; R&R No. 99-01 § 2 (part), 3-19-99; R&R No. 3 Part 5 § 4, 12-19-86).

13.48 DRAINFIELDS (SSAS)

Sections:

- 13.48.010 Specifications.
- 13.48.020 Interconnected loop drainfields.
- 13.48.030 Serial distribution drainfields.
- 13.48.040 Equal distribution drainfields.
- 13.48.050 Dosing systems.
- 13.48.060 Pressure distribution systems.

13.48.010 Specifications.

A. No OSS may be constructed unless there has first been a soil evaluation for the site completed in the manner described in BOH 13.28.050 to determine type, size and location of the OSS. SSAS design and construction shall be in accordance with the following:

1. Maximum bottom width of trenches shall be twenty-four inches except a maximum width of up to thirty-six inches may be allowed provided that:

a. for soil types 1 through 4 the SSAS is at least pressure distribution in accordance with BOH 13.48.060 (pressure distribution systems); and

b. for soil types 5 and 6 the effluent shall meet the next higher treatment level as indicated in table 13.28-1 unless treatment level B is already required prior to discharge to the SSAS; and

c. the slope does not exceed thirty percent.

2. Beds are allowed only in excessively permeable soils consisting of very gravelly coarse sands or coarser, extremely gravelly soils. SSAS installed in beds must be pressure distribution and meet treatment level B or greater.

3. The maximum depth of soil cover over the top of SSAS drainrock shall not exceed twenty-four inches except by written permission of the health officer. The infiltrative surface or bottom of the drainfield shall not be deeper than thirty-six inches below the finished grade.

4. The minimum depth of soil cover over drainrock shall not be less than twelve inches unless otherwise authorized by the health officer.

5. Minimum depth of drainrock under drainfield lines shall not be less than six inches.

6. The amount of drainrock over drainfield lines shall not be less than two inches.

7. Drainrock shall be clean, washed, uniformly graded, nondeteriorating gravel, size three-eighths inches to seven-eighths inches or three-quarters inches to one-and-one-half inches with no visible fine particles adhering to gravel surfaces and with the percent by weight passing the U.S. No. 200 sieve not greater than 0.5 percent.

8. Minimum separation between drainfield trench side walls shall not be less than four feet of undisturbed soil for soil texture types 1, 2, and 3 and shall not be less than six feet for soil texture type 4, 5 and 6.

9. Individual laterals greater than one hundred feet in length must use pressure distribution.

10. No gravelless drainfield system may be installed unless it satisfies the requirements of BOH 13.52.054.

11. The designer shall specify, in the OSS design, the SSAS cover material to be used and shall

verify, in the record drawing, that the cover material used conforms with the design specifications.

- B. Horizontal separations shall be maintained in accordance with BOH 13.28.030W and Table 13.28-2.
- C. No drainfield pipes shall be installed unless all fittings are rigidly joined together in accordance with the pipe manufacturer's directions.
- D. Approved rigid drainfield pipe, such as PVC, shall be used, but only if stakes are placed in the trench center at not more than five-foot intervals to maintain grade and a transit level laser or equally accurate instrument shall be used to assure that proper grade is maintained.
- E. No drainfield shall be installed that requires a change in grade and earth cover unless terracing is accomplished by the use of a suitable plastic or concrete drop box or by use of rigid plastic pipe with glued joints (overflow stepdown). Such installation shall have an earth dam twenty-four inches thick preceding terracing. Earth dams shall consist of original undisturbed soil.
- F. Not less than one drainfield trench monitoring port of at least four inches in diameter, which is anchored, with an easily removable cover that extends to finished grade, shall be installed down to the infiltrative surface in each drainfield lateral.
- G. No OSS shall be installed unless the pipe lines between the building and the septic tank, the septic tank and the distribution box, under paved areas, and within ten feet of any buildings, shall be constructed of plastic, or cast-iron pipe laid with watertight joints. The pipe materials shall conform to material specifications of the Uniform Plumbing Code.
- H. No drainfield shall be installed that, after installation of the gravel over the pipe, is not then covered with a geotextile barrier material that meets the specifications of Section 5, Design Standards for Large On-site Sewage Systems, December 1993, amended July 1994, Washington State Department of Health, as amended.
- I. No drainfield shall be installed under driveways, roadways, parking areas, paved areas or under areas subject to compaction by vehicular traffic.
- J. Pipe used for construction of gravity drainfield lines shall be a minimum of four inches inside diameter and constructed of rigid materials conforming with ASTM F481-02, as amended.
- K. Pipe used for construction of tightline must comply with the current Uniform Plumbing Code.
- L. SSAS shall be installed in undisturbed native soil. Trees or tree stumps greater than eighteen inches in diameter, when measured two feet above grade, shall be left standing, cut at ground level, burned in place, or managed by other methods acceptable to the health officer that will avoid disturbing the soil. (R&R No. 08-03 § 120, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 5 § 5, 12-19-86).

13.48.020 Interconnected loop drainfields.

- A. The slope of ground surface within the drainfield area may not exceed 0.5 percent in any direction.
- B. The bottom of the trenches and the drain lines must be level to a tolerance of plus or minus one inch in one hundred feet.
- C. The invert of the drainfield line must be at least six inches lower than the outlet invert of the septic tank.
- D. The drainfield lines must be continuous and interconnected with at least two connections to the inspection box. Cross-gridding of drainfield lines is not allowed in computation of total square footage of the drainfield area. For the purpose of this section, cross-gridding refers to the placement of multiple connection points between parallel drainfield lines to increase square footage as calculated by the total trench bottom area, which is length times width, of all drainfield lines. (R&R No. 08-03 § 121, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 5 § 6, 12-19-86).

13.48.030 Serial distribution drainfields.

- A. The slope of ground surface in the drainfield area must equal or exceed 0.5 percent in any direction.
- B. The bottom of the trenches and the drain lines shall be level to a tolerance of plus or minus one inch in one hundred feet.
- C. The trenches shall follow the ground surface contours.
- D. Adjacent trenches shall be connected with an overflow stepdown tightline in such a manner that each trench is filled with effluent to the depth of the gravel at the top of the drainline before flowing to succeeding trenches. The drop box method of distribution, as described in the United States Environmental Protection Agency Design Manual, is an alternative to the overflow stepdown method of distribution.

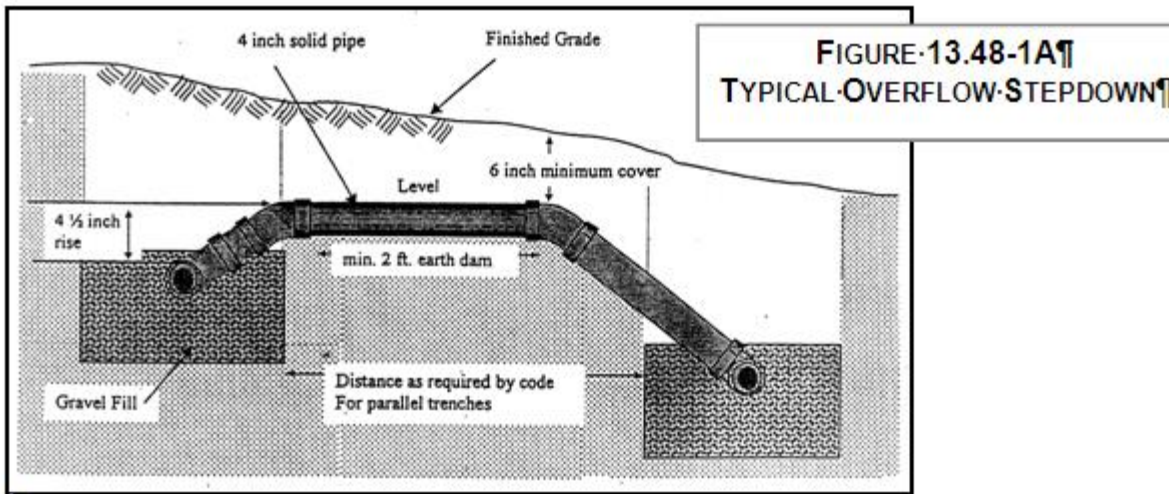


FIGURE 13.48-1A
TYPICAL OVERFLOW STEPDOWN

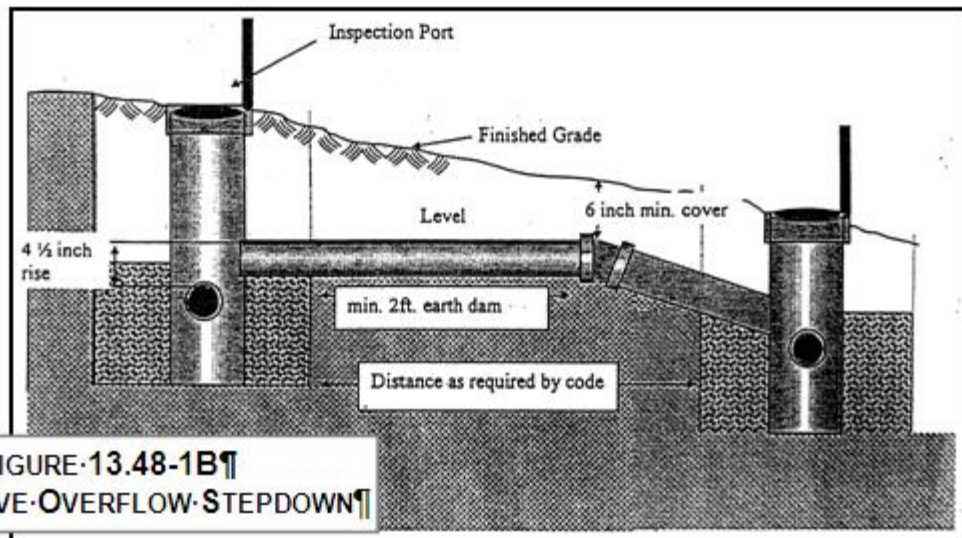


FIGURE 13.48-1B
ALTERNATIVE OVERFLOW STEPDOWN

E. The invert of the overflow line from the first trench must be at least four inches lower than the outlet invert of the septic tank.

F. All serial distribution systems shall divide the system into halves. The inverts of the outlets of the distribution box must be at least one inch higher than the invert of any overflow pipe in the drainfield.

G. The drainfield shall be provided with an inspection or distribution box at the head of the system. (R&R No. 08-03 § 122, 2008; R&R No. 99-01 § 2 (part), 3-19-99; R&R No. 3 Part 5 § 7, 12-19-86).

*Reviser's note: Graphic not included but not deleted in R&R No. 08-03 § 122.

13.48.040 Equal distribution drainfields.

A. No individual line of more than one hundred feet (100') shall be installed nor shall any lines be subdivided unless the effluent is applied by pressure distribution.

B. The drainfield shall be provided with a distribution box or directed dosing device which provides equal flow of effluent to all lines.

C. All lines shall be approximately the same length. The longest line shall not exceed the shortest by more than ten percent (10%).

D. Maximum grade of the bottom of gravity distribution drainfield trenches and drainfield pipe shall not exceed a tolerance of plus or minus one inch (1") in one hundred feet (100'). (R&R No. 99-01 § 2 (part), 3-19-99; R&R No. 3 Part 5 § 8, 12-19-86).

13.48.050 Dosing systems.

A. Any drainfield of more than six hundred feet (600') in total length of two foot (2') wide trench or any three foot (3') wide trench shall have pressure distribution.

B. No system of effluent gravity distribution using lift pumps or other dosing devices shall be permitted which does not limit the dosing at each pumping interval to a maximum volume of seventy-five

percent (75%) and a minimum volume of sixty percent (60%) of the capacity of the disposal field pipe, nor shall such dosages exceed ten (10) minutes.

C. Pumps or other dosing devices shall be approved by the health officer. Pressure switches shall not be acceptable. Permanent electrical connection from the structure to the pump system shall be in accordance with applicable electrical codes prior to final OSS approval. (R&R No. 99-01 § 2 (part), 3-19-99; R&R No. 3 Part 5 § 9, 12-19-86).

13.48.060 Pressure distribution systems.

A. Pressure distribution systems shall be designed in accordance with the specifications contained in the current edition of Recommended Standards and Guidance for Pressure Distribution Systems, July 1, 2007, published by the Washington State Department of Health, as amended, except where modified by or in conflict with this title.

B. Monitoring and maintenance shall be in accordance with BOH 13.60.010. (R&R No. 08-03 § 123, 2008; R&R No. 99-01 § 2 (part), 3-19-99).

13.52 ALTERNATIVE METHODS

Sections:

- 13.52.010 Holding tanks.
- 13.52.020 Composting and incineration toilets.
- 13.52.030 Mound systems.
- 13.52.040 Aerobic treatment units (ATU).
- 13.52.050 Sand filters.
- 13.52.054 Gravelless drainfield systems.
- 13.52.055 Proprietary packed bed filter system.
- 13.52.056 Upflow media filter systems.
- 13.52.057 Subsurface drip systems (SDS).
- 13.52.058 State-approved new on-site sewage system technologies.
- 13.52.060 Product development permits.

13.52.010 Holding tanks.

A. Sewage holding tanks may be permitted only for controlled, nonresidential usage or as an interim method to handle emergency situations or to correct existing problem systems; provided, that an on-site system management program satisfactory to the health officer has been established to assure on-going operation and maintenance.

B. In addition, the applicant must provide a no-protest agreement with the sewerage authority or a signed petition supporting formation of a ULID if the property is within a sewer service area.

C. Design plans shall be submitted to the health officer for review. The design and operation shall be in accordance with this title and with Guidelines for Holding Tank Sewage Systems, July 2007, Washington State Department of Health, as amended. The application shall include specifications for the anticipated daily sewage load, the tank capacity, the alarm device, the overflow elevation, the location of the tank, and any other information pertinent to the installation.

D. A minimum bond of five thousand dollars must be filed with the health officer or management authority to guarantee cleanup in case of accidental spill and/or repair of the system.

E. A copy of a pumping contract with a certified OSS pumper must be filed with the department.

F. An OSS installation permit must be obtained prior to installation of the tank.

G. Monitoring and maintenance shall be in accordance with BOH 13.60.010. (R&R No. 08-03 § 124, 2008; R&R No. 99-01 § 2 (part), 3-19-99; R&R No. 3 Part 6 § 1, 12-19-86).

13.52.020 Composting and incineration toilets.

A. There shall be an adequate system as defined by the health officer for treatment and disposal of gray water. Anticipated water use shall be specified.

B. Composting toilets and incineration toilets shall be designed, installed, operated and maintained in accordance with the Recommended Standards and Guidance for Performance, Application, Design, and Operation & Maintenance, Water Conserving On-site Wastewater Treatment Systems, July 2007, Washington State Department of Health, or as amended and with the registered list.

C. Removal and disposal of composted materials shall be done in a manner which complies with Recommended Standards and Guidance for Performance, Application, Design, and Operation & Maintenance, Water Conserving On-site Wastewater Treatment Systems, July 2007, Washington State Department of Health. The method for disposal shall be specified for each installation.

D. Sufficient area shall be available for a one hundred percent primary and reserve area. The department may grant a reduction of up to fifty percent in septic tank size, and up to forty percent in installed drainfield size if the compost or incineration system is consistent with this title. In no case,

however, shall the tank size be less than seven hundred fifty gallons. Further, there shall be recorded and filed a restrictive covenant running forever with the land, on the title of the affected property, and binding upon and benefiting all parties having any right, interest, or title in the property or any part thereof, and their heirs, successors and assigns. The covenant shall include the following:

1. A description of the waterless toilet installed and the alteration that would be necessary to convert to a water carried toilet system.

2. A covenant of agreement to maintain such system in proper working order.

3. A covenant of agreement that any alteration, change or modification to the OSS will not be undertaken without a new site application and approval by the health officer.

E. Monitoring and maintenance shall be performed in accordance with BOH 13.60.010. (R&R No. 08-03 § 125, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 6 § 2, 12-19-86).

13.52.030 Mound systems.

A. Mound systems shall be designed in accordance with this title and the specifications contained in Recommended Standards and Guidance for Mound Systems, Washington State Department of Health, as amended. However, in no case shall a mound system be installed in areas with less than eighteen inches of original permeable soil except as provided in BOH 13.28.030S and Table 13.28-1.

1. Soil depth shall be demonstrated by at least one soil log hole in the bed area and, if on a slope greater than five percent, one soil log in the thirty-foot downslope setback area.

2. All mound footprints, primary and reserve are to be staked in the field and cleared of vegetation sufficient to determine the contours for proper orientation and alignment.

3. Mound beds shall have at least one inspection port at each end of the bed to the sand and gravel interface.

B. The owner shall provide a recorded covenant agreeing to operate, maintain and report the performance of the system in accordance with the Recommended Standards and Guidance for Mound Systems, Washington State Department of Health as amended, and this title. The owner shall maintain in effect at all times a maintenance contract with a service provider who is approved by the health officer.

C. Monitoring and maintenance of any mound system shall be performed in accordance with BOH 13.60.010. (R&R No. 08-03 § 126, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 6 § 3, 12-19-86).

13.52.040 Aerobic Treatment Units (ATU).

A. No ATU may be installed unless it is included on the registered list. ATUs shall be designed, installed, operated and maintained in accordance with this title, with the specifications contained in Recommended Standards and Guidance for On-site Wastewater Treatment Systems Proprietary Treatment Products, July 1, 2007, Washington State Department of Health, as amended, and with the manufacturer's instructions.

B. For uses requiring treatment level A or B, those ATUs needing disinfection to meet the appropriate required treatment level shall have been tested and approved as meeting that treatment level by the National Sanitation Foundation and DOH with a disinfection unit as specified by the manufacturer installed as a component of the tested and approved unit. Disinfection by chlorination may be used only on property adjacent to a marine shoreline.

C. Unless waived by the health officer, soil absorption area shall be computed in accordance with BOH 13.28.070.

D. Monitoring and maintenance of ATUs shall be performed in accordance with BOH 13.60.010.

E. The owner shall provide a recorded covenant agreeing to operate, maintain and report the performance of the system in accordance with the manufacturer's recommendations and this title and to also maintain in effect at all times a maintenance contract with a service provider to provide performance monitoring and maintenance services in accordance with BOH chapter 13.60. (R&R No. 08-03 § 127, 2008: R&R No. 99-01 § 2 (part), 3-19-99).

13.52.050 Sand filters.

A. Sand filters shall be designed in accordance with this title and the specifications contained in Recirculating Gravel Systems July 1, 2007, and Stratified Sand Filter Treatment Systems, July 1, 2007, Washington State Department of Health, as amended.

B. Monitoring and maintenance shall be performed in accordance with BOH 13.60.010.

C. No sand filter may be installed unless it is included on the registered list and designed for uses requiring treatment level A or B. Any proprietary sandfilters needing disinfection to meet the appropriate required treatment level shall have been tested and approved as meeting that treatment level by the National Sanitation Foundation and DOH with a disinfection unit, as specified by the manufacturer, installed as a component of the tested and approved filter unit. Disinfection by chlorination may be used only on property adjacent to a marine shoreline.

D. The owner shall provide a recorded covenant agreeing to operate, maintain and report the performance of the system in accordance with the manufacturer's recommendations and this title and to also maintain in effect at all times a maintenance contract with a service provider who is approved by the manufacturer and the health officer. (R&R No. 08-03 § 128, 2008; R&R No. 99-01 § 2 (part), 3-19-99; R&R No. 3 Part 6 § 5, 12-19-86).

13.52.054 Gravelless drainfield systems.

A. No gravelless drainfield system may be installed unless it is included on the approved list. All gravelless drainfield systems shall be designed, installed and maintained in accordance with this title, with the registered list, with the specifications contained in Recommended Standards and Guidance for Gravelless Distribution Technologies (or Products), July 1, 2007, Washington State Department of Health, as amended, and with the manufacturer's directions.

B. Unless waived by the health officer, soil absorption area shall be computed in accordance with BOH 13.28.070.

C. Monitoring and maintenance shall be in accordance with BOH 13.60.010. (R&R No. 08-03 § 129, 2008; R&R No. 99-01 § 2 (part), 3-19-99).

13.52.055 Proprietary packed bed filter systems.

A. No proprietary packed bed filter system may be installed unless it is included on the registered list. Proprietary packed bed filter systems shall be designed, installed and maintained in accordance with this title, with the registered list, and the specifications contained in Recommended Standards and Guidance for On-site Wastewater Treatment Systems Proprietary Treatment Products, July 1, 2007, Washington State Department of Health, as amended, and with the manufacturer's directions. For uses requiring treatment level A or B, those proprietary packed bed filter systems needing disinfection to meet the appropriate required treatment level must have been tested and approved as meeting that treatment level by the NSF and DOH with a disinfection unit as specified by the manufacturer and installed as a component of the tested and approved unit. Disinfection by chlorination may be used only on property adjacent to a marine shoreline.

B. Unless waived by the health officer, the soil absorption area for proprietary packed bed filter systems shall be computed in accordance with BOH.28.070.

C. Monitoring and maintenance of proprietary packed bed filter systems shall be performed in accordance with BOH.60.010.

D. The owner shall provide a recorded covenant agreeing to operate, maintain and report the performance of the system in accordance with the manufacturer's recommendations, as applicable, and this title and to also maintain in effect at all times a maintenance contract with a service provider to provide performance monitoring and maintenance services in accordance with the requirements of BOH chapter 13.60. (R&R No. 08-03 § 130, 2008).

13.52.056 Upflow media filter systems.

A. No upflow media filter system may be installed unless it is included on the registered list. All upflow media filter systems shall be designed, installed and maintained in accordance with this title, with the registered list, and the specifications contained in Recommended Standards and Guidance for On-site Wastewater Treatment Systems Proprietary Treatment Products, July 1, 2007, Washington State Department of Health, as amended, and with the manufacturer's directions.

1. Soil depth shall be demonstrated by at least one soil log hole in the basin area and, if on a slope greater than five percent, one soil log hole in the thirty feet downslope setback area as measured from the edge of the absorption area.

2. All upflow sand filter footprints, primary areas, and reserve areas shall be staked in the field and cleared of vegetation sufficient to determine the contours for proper orientation and alignment.

B. Unless waived by the health officer, soil absorption area shall be computed in accordance with BOH 13.28.070.

C. Monitoring and maintenance of upflow media filter systems shall be performed in accordance with BOH 13.60.010.

D. The owner shall provide a recorded covenant agreeing to operate, maintain and report the performance of the system in accordance with the manufacturer's recommendations and this title and to also maintain in effect at all times a maintenance contract with a service provider to provide performance monitoring and maintenance services in accordance with BOH chapter 13.60. (R&R No. 08-03 § 131, 2008).

13.52.057 Subsurface drip systems (SDS).

A. No subsurface drip system shall be installed unless it is included on the registered list. All subsurface drip systems shall be designed, installed and maintained in accordance with this title, with the registered list, and the specifications contained in Recommended Standards and Guidance for

Subsurface Drip Systems, July 1, 2007, Washington State Department of Health, as amended, and with the manufacturer's directions.

- B. Any subsurface drip system shall be used with the addition of a treatment level B system.
- C. Timed dosing is required.
- D. The dripline must be installed a minimum of six inches into original, undisturbed soil.
- E. Two-foot spacing between driplines is the minimum allowed, unless otherwise waived by the health officer.
- F. A subsurface drip system may be used wherever this title requires pressure distribution.
- G. Soil dispersal components having daily design flows greater than one thousand gallons of sewage per day may:
 - 1. Be located only in soil types 1 through 5; and
 - 2. Be located only on slopes of less than thirty percent, or seventeen degrees. (R&R No. 08-03 § 132, 2008).

13.52.058 State-approved new on-site sewage system technologies. No on-site sewage system technology submitted to the health officer for design approval after the effective date of this title will be approved for installation or installed unless it is included on the registered list and has standards for its use detailed in either WAC 246-271A-0100 or in recommended standards and guidance documents issued by the Washington state Department of Health, or is subject to a valid product development permit issued by the health officer. The health officer is authorized to adopt rules, policies or procedures not inconsistent with the provisions of this title to restrict or limit the use of new on-site sewage system technologies or to approve, deny or limit the use of new on-site sewage system technologies for new construction or repairs. (R&R No. 08-03 § 133, 2008).

13.52.060 Product development permits.

A. No person may install and test or use any proprietary OSS technology not currently approved or listed by the Washington state Department of Health without first obtaining from the health officer a valid annual product development permit in accordance with WAC 246-272A-0170.

B. All costs for performance and data monitoring and reporting to the health officer shall be the responsibility of the owner. The health officer may charge for such additional costs involved in monitoring and reporting on each proprietary component or sequence installed as is necessary to recover reasonable expenses. (R&R No. 08-03 § 134, 2008; R&R No. 99-01 § 2 (part), 3-19-99; R&R No. 3 Part 6 § 6, 12-19-86).

13.56 INSTALLATION AND INSPECTION

Sections:

- 13.56.010 General installation requirements.
- 13.56.020 Preinstallation inspection.
- 13.56.030 On-site system inspection.
- 13.56.040 Installation and backfilling.
- 13.56.045 Construction of on-site sewage systems.
- 13.56.050 Record drawing.
- 13.56.054 Notice on title.
- 13.56.060 Approval.

13.56.010 General installation requirements.

A. All OSS shall be constructed and installed in a manner that will accommodate all sewage from the buildings and premises to be served, and in accordance with this title. Except as provided in BOH 13.20.035 and 13.20.040, only an installer holding a valid, current installer's certificate of competency may install, modify or repair an OSS.

B. If requested by the health officer, a master installer shall provide written certification that either the master installer or a certified associate installer was physically present during the entire installation or repair of any OSS installed or repaired under a permit issued to the master installer. In addition the installer shall:

- 1. Perform the installation or repair in accordance with the approved design;
- 2. Have the approved design in his or her possession during all phases of the installation or repair;
- 3. Maintain the permit at the site during all phases of the installation or repair;
- 4. Make no changes to the approved design without the prior authorization of the designer and the health officer;
- 5. Install only septic tanks, pump chambers, and holding tanks approved by DOH and the department;
- 6. Install the OSS to be watertight, except for the soil dispersal component;
- 7. Back fill with twelve to twenty-four inches of approved cover material and grade the site to

prevent surface water from accumulating over any component of the OSS. (R&R No. 08-03 § 135, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 7 § 1, 12-19-86).

13.56.020 Preinstallation inspection. Once the building foundation has been constructed and the plumbing stub-out is installed, and before the installation of the OSS, the designer shall be physically present to inspect the site and plumbing stub-out pipe and determine compatibility with the original design and applicable regulations including: satisfactory water quality and quantity if using an individual private water source, building footprint, surface and subsurface drainage/seasonal water table conditions that may affect wastewater tank locations and on-site stormwater collection and infiltration systems. The designer must notify the department of the designer's decision in regards to the preinstallation inspection within five working days after the designer is requested to do the preinstallation inspection by the owner, the installer, or the health officer. The department may issue an installation permit only after the designer has notified the department in writing that the site is acceptable and meets the criteria of the original design and applicable regulations. If the OSS must be installed before construction of the building, the health officer may waive the plumbing stub-out portion of the preinstallation inspection requirement. (R&R No. 08-03 § 136, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 7 § 2, 12-19-86).

13.56.030 On-site system inspection.

A. The health officer may inspect, at any reasonable time, the proposed location of any OSS, the work done, or the material used in an OSS. If the health officer finds that the work done, or material used, is not in accordance with this title the health officer shall revoke the installation permit if the specified changes are not made within a reasonable time, and it shall be unlawful to use the OSS.

B. Newly Installed On-Site Sewage System.

1. Once a new OSS has been installed, but before it is covered, the installer shall notify the designer and owner that the system is ready for inspection. The designer shall then inspect the work within five working days. If the designer finds that the work is complete and in accordance with the approved design, the system performance specifications and this title, the installation permit shall be signed by the designer and then written notification shall be given to the health officer within one working day and the owner and installer instructed to leave the system open and uncovered for three working days after notification, so that the health officer may inspect it.

2. Should the designer disapprove the system, notification shall immediately be given to the health officer in writing. The designer shall also specify in writing to the owner and installer and health officer the changes to be made. Once the installer has corrected the system as specified by the designer, the designer shall be notified that the system is ready for inspection. The designer shall then inspect the system. If the designer finds that corrections have been made and that the system is in accordance with this title, the designer shall notify the department. Instructions shall be given to the owner and installer to leave the system open and uncovered for three working days so that the health officer may inspect it.

3. The designer shall inspect the installation within five working days after the backfilling operation has been completed.

4. If the work is in accordance with this title the designer shall submit to the department certification of system completion within thirty days of being notified by the installer. This certification shall include a detailed record drawing of the system, pursuant to BOH 13.56.050.

C. An OSS designed or installed by other than certified designers and installers may not be covered until the health officer has given written approval to cover. (R&R No. 08-03 § 137, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 7 § 3, 12-19-86).

13.56.040 Installation and backfilling. Backfilling operations may be done only by a certified master or associate installer under the OSS installation permit. Care must be taken to avoid any damage to the system. Unless otherwise authorized by the health officer, the OSS shall be backfilled within thirty days after health officer and designer approval of the installation. The backfill material should be mounded above natural grade to allow for settling and to channel runoff away from the system. The installer shall notify the designer within one working day of completion of backfill. (R&R No. 08-03 § 138, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 7 § 4, 12-19-86).

13.56.045 Construction of on-site sewage systems.

A. Except as provided in Sections 13.20.035, 13.20.040 and 13.68.010, only a currently certified installer shall construct, repair or modify an OSS, pursuant to Section 13.20.030.

B. The master installer shall ensure that and certify to the health officer that either he/she or a certified associate installer was physically present during the entire installation of any OSS that was installed or repaired under a permit issued to the master installer.

C. For systems installed by the resident owner, that person shall certify in writing that he/she was present at all times and personally constructed, installed or repaired the OSS. (R&R No. 99-01 § 2 (part),

13.56.050 Record drawing.

A. Whenever a designer approves an installation, a completely scaled and dimensioned record drawing and certification of the approved OSS shall be prepared in triplicate by the designer of the system on forms provided by the health officer. These forms shall then be signed by the designer and within thirty days of notifying the health officer of system completion all three complete copies shall be submitted.

Where an installation, alteration or repair is undertaken without a design prepared by a designer, the installer or OSM performing the installation, alteration or repair shall provide a reconciled record drawing to the health officer and the OSS owner at the time of final inspection.

B. The following details are required for all record drawings:

1. An accurate plot plan, with measurements and directions accurate to within one-half of one foot, showing the locations of the essential components of the OSS including:

- a. all sewage tanks, tank pump out lids, tank inspection access ports and depth of tank burial.
- b. all plumbing stub outlets.
- c. building sewer line between building and septic tank.
- d. effluent transport line between septic tank and distribution box or inspection box.
- e. the ends, and all changes in direction, of installed and found buried pipes and electrical cables that are part of the OSS.

f. the distribution/inspection box.

g. all soil absorption system laterals and permanent visible marker locations. The length and width of each individual drainfield lateral shall be shown to scale and the total number of lineal feet and square footage of laterals specified on the drawing. A dimensioned reserve soil absorption system area shall be included.

h. the location of any unusual construction features such as step downs, in the drainfield laterals, must be clearly indicated.

i. distance between any drainfield laterals and the edges of any fill soils, cuts, banks, terraces, foundations, property lines, lakes, streams, wells or other water sources, water lines, driveways and impermeable surfaces.

j. the location and detail of soil absorption system inspection ports.

k. location and depth of permeable cover added after installation.

l. if a pump system, the pump size, manufacturer, model, pump cycle duration, dose in gallons/cycle and pump timer settings.

m. location, size, shape, and placement of all buildings on the building site showing their relation to the OSS and to any easements, underground oil storage tanks, utility lines and property lines.

n. location, direction of flow, and discharge point of all ground and/or surface water interceptor drains and on-site stormwater infiltration systems.

o. orientation of drawing with north direction by arrow.

p. location of private water supply (well, spring, etc.).

q. location of design control point.

2. Clearly Indicated Scale using the appropriate scaled increments shown on a typical engineering scale. Recommended scale of one inch equals twenty feet. Scales utilizing ratios smaller than one inch equals thirty feet are not acceptable.

3. One copy of an OSS owner's operating, maintenance and technical specifications manual which includes:

a. system performance specifications, including initial settings of electrical or mechanical devices needed to operate the system as intended by the designer and installer;

b. system operating instructions, including, for proprietary products, manufacturer's standard product literature;

c. system preventive maintenance instructions and service schedule;

d. make, model and/or performance specifications of all system components; and

e. check list and schedule for routine monitoring inspections, effluent sampling and reports.

f. record that materials and equipment meet the specifications contained in the design.

4. Copy of recorded "notice on title" required by BOH 13.56.054 [, and an operation and maintenance services agreement as applicable.]*

5. Copy of OSS installation permit.

6. Documentation describing the waste strength range within which the OSS is designed to operate. (R&R No. 08-03 § 139, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 7 § 5, 12-19-86).

13.56.054 Notice on title.

A. New Systems. The owner shall record a notice on title with the King County records and election division. This notice shall include all of the owner's responsibilities described in BOH 13.60.005 and Table 13.60-1.

B. Existing systems.

1. Prior to sale or transfer of property ownership, if the building is served by an OSS and the notice on title required by this section has not been recorded, then the owner shall record the notice as set forth in BOH 13.56.054.A. At the time of sale the seller shall obtain the buyer's signature acknowledging receipt of a copy of this recorded notice.

2. At the time of sale or transfer of property ownership, the buyer or transferee of a property served by an OSS shall forward to the health officer a fee as set forth in the fee schedule and submit a signed copy of the notice on title as set forth in BOH 13.56.054.A.

3. At the time a building is remodeled or expanded, if it is not connected to public sewer and the notice on title required by this section has not been recorded, then the owner shall record the notice as set forth in BOH 13.56.054.A. (R&R No. 08-03 § 140, 2008: R&R No. 02-01 § 1, 5-17-2002: R&R No. 99-01 § 2 (part), 3-19-99).

13.56.060 Approval.

A. Within ten working days after receipt of certification by a designer that an OSS as installed is in accordance with this title, the health officer shall approve or disapprove thereof. It shall be unlawful to use a newly installed OSS prior to its approval by the health officer.

B. If the health officer disapproves such work or system, notification in writing shall be provided to the owner, designer and installer within ten working days stating the reasons for such disapproval and stating the right to appeal. (R&R No. 08-03 § 141, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 7 § 6, 12-19-86).

13.60 OPERATION AND MAINTENANCE, MONITORING AND MANAGEMENT

Sections:

- 13.60.005 Operation and maintenance.
- 13.60.010 Monitoring of residential, community or commercial systems.
- 13.60.020 Community and large on-site system management.
- 13.60.030 Operation and maintenance at time of sale.

13.60.005 Operation and maintenance.

A. The OSS owner is responsible for the continuous proper operation and maintenance of the OSS, and shall:

1. Determine the level of solids and scum in the septic tank at least once every three years for residential systems with no garbage grinder and once every year if a garbage grinder is installed and, unless otherwise provided in writing by the health officer, once every year for commercial systems.

2. Employ an approved pumper to remove the septage from the tank when the level of solids and scum indicates that removal is necessary.

3. Cause preventive maintenance/system performance monitoring inspections to be conducted and any indicated service to be performed by an approved person at a minimum frequency in accordance with Table 13.60-1 unless otherwise established by the health officer.

4. Secure and renew contracts, as needed, to fulfill the OSS operation and maintenance requirements of Table 13.60-1.

5. Operate and maintain all OSS in accordance with this title, with pertinent alternative system guidelines issued by the DOH and with the approved OSS owner's operating and maintenance instruction manual.

6. Protect the OSS area including the reserve area from:

- a. cover by structures or impervious material;
- b. surface drainage;
- c. soil compaction, for example, by vehicular traffic or livestock; and
- d. damage by soil removal and grade alteration.

7. Maintain the flow of sewage to the OSS at or below the approved operating capacity and sewage quality standards for residential strength waste water.

8. Direct drains, such as footing or roof drains away from the area where the OSS is located.

9. At time of property transfer, provide the buyer with maintenance records, if available, in addition to the completed seller disclosure statement in accordance with chapter 64.06 RCW for residential real property transfers.

B. The owner shall not allow:

1. Use or introduction of strong bases, strong acids or organic solvents into an OSS for the purpose of system cleaning;
2. Use of a sewage system additive unless it is specifically approved by the DOH; or
3. Use of an OSS to dispose of waste components atypical of residential wastewater, for example, but not limited to, petroleum products, paints, solvents, or pesticides. (R&R No. 08-03 § 142, 2008: R&R No. 99-01 § 2 (part), 3-19-99).

13.60.010 Monitoring of residential, community or commercial systems.

- A. The owner shall cause monitoring of the performance of any OSS at a frequency and by a qualified person as specified in Table 13.60-1.
- B. For all system types, service access and monitoring ports to finished grade are required for all system components. Specific component requirements include the following:
 1. Septic tanks shall have service access maintenance ports and monitoring ports for the inlet and outlet. If effluent filters are used, access to the filter at finished grade is required;
 2. Surge, flow equalization or other sewage tanks shall be accessible for monitoring and maintenance;
 3. All pretreatment units shall have service access maintenance ports and monitoring ports;
 4. Pump chambers, tanks and vaults shall have service access maintenance ports;
 5. Disinfection units shall have service access and be installed to facilitate complete maintenance and cleaning;
 6. Soil dispersal components shall have monitoring ports for both distribution devices such as valves or other controls and the infiltrative surface;
- C. Systems using pumps shall have accessible controls and warning devices.
- D. To facilitate maintenance and safety, control panels shall be located in line of sight of the pump tank.
- E. OSS serving food establishments require, at a minimum, annual inspection and periodic pumping as needed.
- F. Operation and maintenance of any OSS in a marine recovery area shall be performed by a licensed OSS maintainer and at a frequency determined by the health officer based upon type, size, age, system condition, and system location, but not less than once per year. If no accurate record drawing for the OSS has been prepared and filed with the department, the licensed OSS maintainer performing the maintenance and performance monitoring shall prepare and submit to the health officer a reconciled record drawing together with the system performance monitoring report required under this chapter.

Table 13.60-1

	Minimum Frequency of Preventive Maintenance/Performance Monitoring				
	Gravity System ⁴	Public Domain Technology ²	Proprietary Technology ^{3,5}	Commercial and Food Establishment	Non-Discharging Toilets ⁶
Initial¹ Inspection	6 months	6 months	45 days	45 days	N/A
Regular Inspection frequency	Every 3 years	Annually	Every 6 months	Annually or 6 months Depending on Technology used	Annually
Who May Perform the Inspection	Owner or Licensed Maintainer or Licensed OSS Pumper	Licensed Maintainer	Licensed Maintainer	Licensed Maintainer	Owner

Table 13.60-1 Explanatory Notes

1. The initial inspection is to be performed at the time interval indicated following occupancy.
2. Public domain technology includes such systems as: mounds, intermittent sand filters and pressure distribution.
3. Proprietary Technology includes such systems as: ATUs, Glendon up-flow filters, Advantex pack bed filters and subsurface drip.
4. At least an annual septic tank maintenance check is required if the structure served is equipped with a garbage grinder waste disposal unit. If a screened outlet baffle is present an annual check is recommended. Pumpers shall report each pumping event to the health officer in accordance with BOH chapter 13.68.
5. Table 13.60-1 specifies the minimum required monitoring frequency. A more stringent monitoring frequency shall be used if recommended by the manufacturer.
6. This monitoring is in addition to that required for the OSS receiving the building's nontilet liquid waste.

G. The person conducting the maintenance and performance monitoring inspection shall submit a system operation and maintenance/performance monitoring report, on forms provided by the health officer, to the owner at the time of the inspection and to the health officer accompanied by a filing fee as specified in the fee schedule within thirty days of the inspection.

H. The fee for each OSS monitoring/performance inspection required by the health officer shall be in accordance with the fee schedule.

I. Preventive maintenance and monitoring of the OSS performance and quality of effluent shall be required for any commercial development using OSS.

1. The minimum frequency and the type of inspection required shall be in accordance with Table 13.60-1 unless otherwise established by the health officer.

2. At least an annual inspection of OSS serving food establishments shall be conducted.

J. For properties where required monitoring and/or preventive maintenance inspections are at least thirty days overdue the health officer may notify the owner that the OSS is not in compliance with these rules. The health officer may, in addition to provisions of BOH chapter 1.08 of this code, cause a notice of noncompliance to be recorded with the real property records for the subject lot. (R&R No. 08-03 § 143, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 49 § 3, 12-1-89: R&R No. 3 Part 8 § 1, 12-19-86).

13.60.020 Community and large on-site system management.

A. Maintenance and management of community systems and large on-site sewage systems shall only be provided by a public agency as defined in RCW 39.34.020 acting as the management authority.

B. The proposed waste management system agreements shall be submitted to the health officer for review and be accompanied by a fee as specified in the fee schedule.

C. The application shall be accompanied by an opinion letter from an attorney licensed to practice law in the state of Washington representing that the management agreement complies with all applicable laws and regulations, and is a valid and binding obligation of all parties thereto. The opinion letter shall be in such form as the health officer may require.

D. The management authority shall prepare a homeowner's manual which describes the responsibilities and duties of the homeowner along with precautionary information as may be necessary to preclude inadvertent abuse to the sewage system. A copy of such manual shall be provided to each homeowner by the management authority at the time of purchase or transfer of the property. (R&R No. 08-03 § 144, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 8 § 2, 12-19-86).

13.60.030 Operation and maintenance at time of sale.

A. The seller of any single family or multiple family residential property served by an OSS shall, prior to transfer of title to the property, have a monitoring and performance inspection performed by a licensed OSM. The licensed OSM shall file with the department an on-site system report and applicable fee in accordance with the fee schedule.

1. If no record drawing is on file with the department, the OSM shall prepare a record drawing and include it with the O&M report submitted to the department.

2. If a record drawing is on file with the department but does not accurately depict the OSS, the OSM shall prepare a reconciled record drawing and include it with the O&M report submitted to the department.

3. A monitoring and performance inspection is not required if such an inspection was performed within the previous 6 months.

4. At the time of property transfer, the owner shall provide, to the buyer, maintenance records, if available, in addition to the completed seller disclosure statement in accordance with chapter 64.06 RCW for residential real property transfers. (R&R No. 08-03 § 145, 2008).

13.64 REPAIRS AND REMODELING

Sections:

13.64.010 Repairs of failing OSS.

13.64.020 Remodeling - approval required.

13.64.010 Repairs of failing OSS.

A. This title shall be applied to the maximum extent permitted by the site for any repair necessitated by the failure of an existing OSS. The health officer may waive compliance with these requirements if a conforming repair is not feasible and if in the health officer's judgment the repaired system will not have an adverse effect on public health, but the repaired system shall not discharge onto the surface of the ground, into surface waters, or otherwise fail.

B. The health officer may require a site design in accordance with BOH chapter 13.28 for the repair or replacement of a failing soil absorption component and if deemed necessary for a limited repair. Prior to designing the repair system, the designer shall consider the contributing factors of the failure to enable the repair to address identified causes of the failure, and shall include this information in any design or repair proposal to the department.

[The health officer shall require a site design in accordance with chapter 13.28 for the repair or replacement of a failing soil absorption component and if deemed necessary for a limited repair.]*

C. It is unlawful to repair an OSS without an OSS limited repair or repair permit.

Table 13.64-1

Minimum Treatment Level Required for Repair or Replacement of Soil Absorption Components on Sites not Meeting Vertical and/or Horizontal Separation Requirements of this Title

Vertical Separation (in inches)	Horizontal Separation ¹											
	< 25 feet ^{2,3}			25 < 50 feet ^{2,3}			50 < 100 feet ^{2,3}			> 100 feet		
	Soil Type			Soil Type			Soil Type			Soil Type		
	1	2	3-6	1	2	3-6	1	2	3-6	1	2	3-6
< 12	A	A	A	A	A	A	A	A	B	B	B	B
> 12 < 18	A	A	A	A	B	B	A	B	B			
> 18 < 24	A	A	A	A	B	B	A	B	C	Conforming		
> 24 < 36	A	B	B	B	C	C	B	C	C	Systems		
> 36	A	B	B	B	C	C	B	C	E			

Table 13.64-1 Explanatory Notes

The horizontal separation indicated in this table is the distance between the soil dispersal component and the surface water, well, or spring. If the soil dispersal component is up-gradient of a surface water, well, or spring to be used as a potable water source, or beach where shellfish are harvested, the next higher treatment level shall apply unless treatment level A is already required.

1. The Treatment Levels refer to effluent quality achieved before discharge to unsaturated subsurface soil.
2. Alternative systems which meet the Treatment Level without disinfection are required when the repair OSS is adjacent to fresh water bodies.
3. When adjacent to fresh surface water bodies the next higher Treatment Level A shall be provided unless Treatment Level A is already provided.

D. The treatment level required for repair or replacement of soil absorption components of an existing failed OSS when conforming vertical separation and conforming horizontal separation to surface water and/or to individual private wells is not possible shall be in accordance with Table 13.64-1.

E. Alterations or repairs to an OSS shall be documented in a repair record drawing submitted to the health officer for final approval at time of final inspection, unless a full design application was submitted for the repair.

F. The owner receiving a Table 13.64-1 repair permit where treatment Level A or B is required shall:

1. Immediately report any OSS failure to the health officer;
2. Continuously operate, maintain and monitor the OSS performance in accordance with the appropriate recommended standards and guidance for the technology in use; and
3. Report the results of the OSS maintenance and monitoring to the health officer quarterly when Treatment Level A is required and annually when Treatment Level B is required.

G. The owner receiving a permit shall file a "notice on title" in accordance with 13.56.054 and the notice shall include:

1. A notarized agreement to comply with the conditions of BOH 13.64.010F above; and
2. A disclosure that a nonconforming OSS has been installed to correct a failure because a conforming OSS is not feasible due to site and soil limitations and that due to the OSS nonconformity the system is not authorized to support new building construction or expansions or major alterations of the existing structure.

H. The health officer may authorize in writing a horizontal separation of not less than seventy-five feet between an OSS dispersal component and an individual private drilled well, but only if:

1. the well is located on the same parcel as the property served by the OSS;
2. the OSS is designed and operated to provide treatment level A or treatment performance beyond that accomplished by meeting the vertical separation and effluent distribution requirements described in Table 13.64-1; and
3. the owner monitors drinking water quality for coliform and nitrate and periodically submits drinking water quality reports to the health officer at least annually.

I. For any designed repair, the designer shall include, on the record drawing document, the operating capacity of the repaired OSS and provide a copy of the record drawing document to the owner.

J. For any repair required to be performed in accordance with Table 13.64-1 of this title, disinfection may not be used to achieve the fecal coliform requirements to meet:

1. Treatment levels A or B where there is less than eighteen inches of vertical separation;
2. Treatment levels A or B in type 1 soils; or
3. Treatment level C.

K. Except as provided in BOH 13.20.040, OSS repairs shall be supervised by an OSS master installer certified pursuant to BOH 13.20.020 and 13.20.030.

L. When the work of repairing an existing OSS has been completed, but before it is closed and covered, the person who designed the repair and owner shall be notified. The person who designed the repair shall then proceed as described in BOH 13.56.030, subsections B. and C. The person designing the repair shall then call for the health officer to inspect the system. For a limited repair the installer shall submit a limited repair report to the health officer within five working days.

M. Unless otherwise directed by the health officer, OSS repairs shall not be covered until the health officer has given approval. (R&R No. 08-03 § 146, 2008; R&R No. 99-01 § 2 (part), 3-19-99; R&R No. 3 Part 9 § 1, 12-19-86).

*Revisers note: Material not included but not deleted in R&R No. 08-03 § 146.

13.64.020 Remodeling - approval required.

A. Existing buildings or structures to which additions, alterations, or improvements which would impact the operation of the OSS are made after the effective date of this title shall be served by an OSS complying with this title; provided, however, the health officer may waive compliance with these requirements for existing buildings or structures when the addition, alterations, repairs, or improvements to the building or structure are compatible with and do not adversely impact the OSS including the potential reserve area, do not affect the adequacy of the system to treat the sewage over the remaining useful life of the building or structure, and do not adversely affect the ability of the continued operation of the system to protect public health, surface water quality, or groundwater quality.

B. Applications for approval by the health officer of existing OSS serving existing buildings undergoing addition, alteration, repair, or improvement shall be made as provided in this section. The application shall be made on forms furnished by the health officer.

C. The health officer will review all applications to determine the compatibility of the proposed addition, alteration, repair, or improvement with the existing OSS.

1. Factors that the health officer may consider include, but are not limited to, the following:

- a. location of SSAS in relation to foundation and existing improvements;
- b. size of SSAS in relation to proposed use;
- c. condition of the existing OSS;
- d. useful anticipated life of the existing on-site sewage disposal system;
- e. potential for reconstruction and repair of the existing on-site sewage disposal system;
- f. ultimate purpose of the remodeling; and
- g. approved source of water.

2. The health officer may require the applicant to furnish such exhibits and information as may be deemed relevant and necessary to the application.

D. Any applicant for a permit for a change of use in a commercial structure served by an OSS shall obtain the health officer's review and approval of the OSS before the OSS may be utilized to serve the new use in the structure. Any such applicant for a change in use approval for the continued use of the OSS shall submit a written application for approval by the health officer. The application shall include information detailing any processes or uses which may impact the wastewater characteristics and flows of the existing OSS.

E. The nonrefundable fee for such a review shall be as specified in the fee schedule, payable to the department. No charge shall be made for applications for projects that are determined to be categorically exempt by the health officer. (R&R No. 08-03 § 147, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 98 § 7, 12-14-93: R&R No. 49 § 4, 12-1-89: R&R No. 3 Part 9 § 2, 12-19-86).

13.68 LIQUID WASTE PUMPING AND HAULING

Sections:

- 13.68.010 Pumper certification requirements.
- 13.68.020 Application.
- 13.68.030 Examination and inspection.
- 13.68.034 Pumping equipment.
- 13.68.036 Pumping procedures.
- 13.68.040 Report requirements.
- 13.68.050 Revocation of certificate of competency and inspection certificates.
- 13.68.060 Approval of change of disposal sites.
- 13.68.070 Maintenance of disposal sites.

13.68.010 Pumper certification requirements.

A. It is unlawful for any person to carry on or engage in the business of pumping out the contents of septic tanks, cesspools, grease traps, seepage pits, vault privies, portable toilets and other receptacles of human sewage or to transport over the highways or to dispose of the contents therefrom in King County unless the pumper business operator and in addition, each employee of the OSS pumper who engages in OSS pumping activities, holds a valid certificate of competency and each vehicle has an annual inspection tab issued by the health officer in accordance with this title for conducting such business. The following liquid waste pumper's certificate of competency classifications are established:

1. OSS pumper;
2. Grease trap/interceptor pumper;
3. Vessel sewage holding tank pumper;
4. Portable toilet pumper.

B. All persons holding a valid pumper registration on the effective date of these regulations will be classified by the health officer in accordance with subsections A1 through A4 of this section.

C. An applicant may be issued a certificate under such terms, conditions orders and direction as the health officer may deem necessary for the protection of public health. The health officer may waive any specific condition required by this chapter for certification when, in the opinion of the health officer, the condition duplicates a requirement of another regulatory agency and which the applicant has fulfilled. (R&R No. 08-03 § 148, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 11 § 1, 12-19-86).

13.68.020 Application. All applications for pumper certification under this title shall be submitted to the health officer. The application shall state the applicant's name in full; if a partnership, then the names of the partners, the relation of the applicant to the firm or partnership; the name of the corporation if a corporation; the place of business and place of residence of the applicant; each of the partners in the business, if a partnership; and the place of business of the corporation, if a corporation. The applicant shall also provide the number and identification of all vehicles to be used; the type, location and name of all the sites that the applicant will use to dispose of the contents of septic tanks, cesspools, grease traps, grease interceptors, seepage pits, vault privies, portable toilets and other receptacles of human sewage; and the name and address of the person, firm, or corporation who is responsible for the operation of each disposal site. A valid disposal site letter of authorization must accompany the application. The application shall be signed by the authorized officer of the corporation, if a corporation, or by the managing partner, if a partnership, or by the individual owner, if owned by an individual, and by the individual applicant. (R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 11 § 2, 12-19-86).

13.68.030 Examination and inspection.

A. Except as described in BOH 13.68.010.B, a pumper's certificate of competency and/or vehicle inspection tab shall be issued to the applicant only after:

1. Completion of a course of instruction given by a qualified person(s) acceptable to the health officer and which covers, as applicable to the certificate of competency classification, basic sanitation principles affecting public health, on-site sewage concepts, details of proper servicing of sewage tanks or other receptacles of human sewage and the transporting and disposing of sewage, septage, sludge, or fats, oils and grease;

2. Satisfactory completion of an examination relevant to the pumper certificate of competency classification, which may include but not necessarily be limited to the applicant's knowledge of sanitation principles affecting public health, knowledge of principles of on-site sewage system operations, knowledge of sewage tank and/or portable toilet servicing procedures, knowledge of regulations governing disposal of septage, sewage and/or fats, oils and grease, and the reliability of the applicant in observing sanitation laws, regulations and directions, plus other pertinent information as deemed necessary by the health officer except that the grease trap/interceptor pumpers, vessel sewage holding tank pumpers and portable toilet pumpers may be exempted from such examination upon satisfactory completion of an industry certification/training program acceptable to the health officer. The fee for such examination or evaluation of training documentation shall be as specified in the fee schedule payable in advance and nonrefundable;

3. Annual inspection and approval of the applicant's equipment to be used in the performance of the business;

4. The business operator provides the health officer with evidence of compliance with state of Washington minimum bonding requirements as stated in chapter 18.27 RCW and contractor's liability insurance for at least fifty thousand dollars; and

5. Business operators, other than OSS pumpers, sign and provide to the health officer a statement certifying that all employees working in contact with equipment potentially contaminated by sewage have successfully completed a course of instruction given by a qualified person or persons acceptable to the health officer which covers basic sanitation principles affecting public health.

B. Certificate of competency and vehicle inspection fees shall be as specified in the fee schedule.

C. After certification has been approved by the health officer, the applicant will be issued a certification of competency registration number. The business owner shall permanently affix said number preceded by the letters "KC No." on each of the applicant's collection vehicles. Said numbers must be in a contrasting color to that of the vehicle and in letters at least three inches high and placed along with the annual wastewater vehicle tab in a conspicuous place designated by the health officer. In addition, the name of the operating firm shall be conspicuously displayed on both sides of the truck.

D. Certificates shall expire December 31st of each year.

1. The health officer may renew certificates of competency provided that the applicant submits not later than December 31st a complete renewal application accompanied by: a fee as set forth in the fee schedule, authorization for continued use of all disposal sites, a completed annual vehicle inspection report and proof of minimum bonding and insurance requirements; and

2. Complete applications for renewal submitted after January 15 shall be subject to a late fee in the amount of one-half the renewal fee, after January 31 double the renewal fee and after February 10 a renewal shall not be granted without passing a competency examination. (R&R No. 08-03 § 149, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 89 § 1, 12-16-92: R&R No. 3 Part 11 § 3, 12-19-86).

13.68.034 Pumping equipment.

A. Tanks shall be fully enclosed, watertight, of metal construction in good repair, and with openings or hatches built to seal securely.

B. The vehicle shall be equipped with either a vacuum pump or other type of self priming pump, which will not allow spillage from the diaphragm or other packing glands.

C. Each vehicle shall be equipped with a section of hose, pipe or funnel made of easily cleaned, durable material to properly direct the flow of the tank contents while emptying the tank at the approved disposal site.

D. The sewage suction hose on vehicles shall be in sound condition, drained after each use and stored on the vehicle in a manner that will not create a public health hazard or nuisance.

E. Each vehicle shall at all time carry a water hose of adequate length for washing spillage and equipment, and with disinfectant (bleach), hand sanitizer, and cleaning implements (5 gallons of absorbent, 5 gallon bucket, broom and shovel).

F. All pumping equipment shall be properly maintained and kept clean.

G. Each pump apparatus not operating on a vacuum with automatic shut-off shall be equipped with a positive check valve or holding tank contents level indicator to preclude over-filling. (R&R No. 99-01 § 2 (part), 3-19-99).

13.68.036 Pumping procedures. The pumper shall:

A. Pump out the full contents and all compartments of the sewage tank.

B. Leave the premises serviced in a clean and sanitary condition.

C. Dispose of septage and sewage only at approved disposal sites.

D. Possess at all times during pumping and transporting, complete records of the origin of the septage and sewage.

E. Measure and record the depth of sludge and scum layers in septic tanks.

F. Observe and record the physical condition of the sewage tank pumped including signs of tank exfiltration or infiltration and condition of baffles in septic tanks. (R&R No. 08-03 § 150, 2008: R&R No. 99-01 § 2 (part), 3-19-99).

13.68.040 Report requirements.

A. Persons performing pumping activities governed by this title shall submit sewage tank pumping reports monthly to the health officer on forms provided by the department. These reports shall include information on each sewage tank pumped in King County to include:

1. Date and address of property where tank is pumped.

2. Any observed discharge of sewage or effluent to the surface of the ground or to surface waters.

3. Any spill of sewage or septage by the pumper, its location and approximate number of gallons, and description of clean up activities.

B. OSS Sewage Tank Service Report. The certified pumper shall provide a written service report to the OSS owner at the time of service and to the health officer upon request. This report shall, at a minimum, include the following:

1. Name, address, and phone number of the pumping firm;

2. Name, address and phone number of the owner/occupant of property serviced;

3. Date service performed;

4. Depth in inches of floating scum mat and sludge layer;

5. Type of tanks and number of compartments pumped;

6. Number of gallons pumped;

7. General tank condition observed;

8. Condition of baffles, noting whether filter baffles were cleaned;

9. Description of any other service performed; and

10. Signature and certificate of competency number of person performing the work. (R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 11 § 4, 12-19-86).

13.68.050 Revocation of certificate of competency and inspection certificates. Any certificate of competency and inspection certificate issued under this title may be suspended or revoked for cause by the health officer pursuant to Chapter 1.08 of this code. (R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 11 § 5, 12-19-86).

13.68.060 Approval of change of disposal sites. Should a pumper plan to dispose of the contents of the septic tanks, cesspools, grease traps, or seepage pits, vault privies, chemical toilets and other receptacles of human sewage at a disposal site(s) other than the site listed in the current application for certification, the holder of the certificate shall first obtain written approval of said site from the health officer. (R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 11 § 6, 12-19-86).

13.68.070 Maintenance of disposal sites. Any person, firm, or corporation responsible for the operation of a disposal site on which the contents of septic tanks, cesspools, grease traps or seepage pits, vault privies, portable toilets and other receptacles of human sewage are disposed shall maintain said disposal site in a safe and sanitary condition. (R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 11 § 7, 12-19-86).

13.74 (RESERVED)

Editor's Note:

Former BOH chapter 13.74, entitled Fees, was amended in its entirety, and relocated to BOH Title 2, by Rule and Regulation No. 05-05.