

ANCHORAGE, ALASKA

AO No. 2017-129, As Amended, As Amended

1 AN ORDINANCE REPEALING AND REENACTING ANCHORAGE MUNICIPAL
2 CODE CHAPTER 15.65 WASTEWATER DISPOSAL; AMENDING ANCHORAGE
3 MUNICIPAL CODE SECTION 4.40.150, THE ON-SITE WASTEWATER SYSTEM
4 TECHNICAL REVIEW BOARD; AND AMENDING ANCHORAGE MUNICIPAL CODE
5 SECTION 14.60.030, THE FINES ASSOCIATED WITH CHAPTER 15.65.
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8 **THE ANCHORAGE ASSEMBLY ORDAINS:**
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10 **Section 1.** Anchorage Municipal Code section 4.40.150 is hereby amended to read
11 as follows:
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13 **4.40.150 - On-site water and wastewater [SYSTEM] technical review board.**
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15 A. *Establishment.* There is hereby established an on-site water and
16 wastewater [SYSTEM] technical review board. The board shall have the
17 powers and duties set forth in this chapter.
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19 B. *Powers and duties.* The board shall
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- 21 1. Propose, review and make recommendations to the assembly
22 regarding proposed amendments to chapter 15.55 [CHAPTER
23 21.67], chapter 15.65, or regulations thereunder. The assembly
24 shall not adopt such an amendment or regulation until it has been
25 reviewed by the board;
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27 Hear and decide appeals related to chapters 15.55 and 15.65 from
28 department decisions under section 15.05.090. The scope of
29 review shall be whether the department's decision is arbitrary and
30 capricious based on a clear and consistent application of the
31 standards established in the applicable code sections. The board
32 may consider evidence in addition to the record on appeal;
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34 [2. HEAR AND DECIDE APPEALS:
35

36 A. RELATED TO CHAPTER 15.65 AND SECTION 15.55.055
37 FROM DECISIONS OF THE DEPARTMENT UNDER
38 SECTION 15.05.090.
39

40 B RELATED TO CHAPTER 21.67.
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42 C. RELATED TO DENIAL OF A PERMIT TO PERFORM
43 WORK IN THE WATERSHED DISTRICT.

THE SCOPE OF REVIEW SHALL BE WHETHER OR NOT THE DECISION FROM WHICH THE APPEAL IS TAKEN IS ARBITRARY AND CAPRICIOUS BASED ON A CLEAR AND CONSISTENT APPLICATION OF THE STANDARDS ESTABLISHED IN THE APPLICABLE CODE SECTIONS. THE TECHNICAL REVIEW BOARD MAY CONSIDER EVIDENCE IN ADDITION TO THE RECORD ON APPEAL;]

3. Review fee schedules proposed by the development services department in chapter 23.10, Table 3-L – On-site services fees [UNDER CHAPTERS 15.65 AND 21.67] and advise the assembly as to appropriateness;
4. Promote community education efforts toward proper operation and maintenance of on-site systems in cooperation with the department;
5. Promote continuing education of engineers, manufacturers, septic installers, [EXCAVATORS AND] septic pumpers, well drillers and well pump installers toward proper design, construction and maintenance of on-site systems in cooperation with the department;
- [6. MAINTAIN, IN COOPERATION WITH THE DEPARTMENT, A LIST OF ALL ENGINEERS WHO HAVE, WITHIN THE LAST TWO YEARS, SUCCESSFULLY COMPLETED A CONTINUING EDUCATION COURSE APPROVED BY THE BOARD;]
6. [7.] Promote and encourage research and demonstration of alternative experimental methods of on-site wastewater treatment systems;
7. [8.] Recommend an acceptable criteria for approving experimental systems as conventional systems and advise the department or assembly as to needed changes in regulations or ordinances to accommodate the new types of systems; and
8. [9.] Conduct investigations and hearings necessary to accomplish the purposes described in this subsection. [; AND]
- [10. PROVIDE AN ANNUAL REPORT TO THE ASSEMBLY DESCRIBING BOARD ACTIVITIES, AN ASSESSMENT OF THE ON-SITE SYSTEMS WITHIN THE MUNICIPALITY AND RECOMMENDATIONS FOR FUTURE ACTIONS.]

C. *Composition; organization; term of office.* The board shall consist of seven (7) members, all of whom shall be knowledgeable of on-site water and wastewater disposal systems.

1. One of the members shall reside in the northerly part of the municipality north of Northern Lights Boulevard and its extension including Eagle River and beyond, in a home served by on-site water and wastewater disposal systems. [; AND]

2. One member shall reside in the southerly part of the municipality south of Northern Lights Boulevard and its extension including Girdwood, in a home[S] served by [AN] on-site water and wastewater disposal systems. [; AND]
 3. One member shall be a [HEALTH] professional knowledgeable in real estate, waterborne diseases, hydrology, geology or soil science. [OF WATERBORNE DISEASE; AND]
 4. At least three of the members shall be engineers.
 5. Members shall be appointed by the mayor for terms of three years. All appointments shall be subject to confirmation by the assembly. Terms shall be staggered[, WITH TWO MEMBERS OF THE FIRST BOARD BEING APPOINTED TO TERMS OF ONE YEAR, TWO MEMBERS BEING APPOINTED TO TERMS OF TWO YEARS, AND THE REMAINING THREE MEMBERS BEING APPOINTED TO TERMS OF THREE YEARS].
 6. The director of community development or designee shall act as secretary to the board.
 7. The board may promulgate regulations to establish rules of procedure for the conduct of its business in accordance with the provisions of chapter 3.40.
- D. This board shall terminate on October 14, 2019, unless affirmatively continued by the Assembly in accordance with section 4.05.150.

(AO No. 86-21; AO No. 90-48(S-1); AO No. 96-152, § 3, 12-17-96; AO No. 2002-151, § 1, 12-17-02; AO No. 2002-117, § 1, 1-28-03; AO No. 2004-96, § 1, 6-8-04; AO No. 2011-64(S-1), § 3, 6-28-11; AO No. 2013-69, § 2, 10-8-13; AO No. 2016-76(S), § 1, 7-12-16 ; AO No. 2016-60 , § 2, 10-4-16)

Section 2. Anchorage Municipal Code section 14.60.030 Fine Schedule is hereby amended to read as follows (the remainder of the section is not affected and therefore not set out):

14.60.030 - Fine schedule.

The fine schedule under this chapter is as follows:

Code Section	Offense	Penalty/Fine
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<u>15.65</u>	<u>Improper wastewater discharge; Improper wastewater system construction, repair, or use; Failure to obtain permit or installer certification</u>	<u>300.00</u>
[15.65.020	WASTEWATER DISCHARGE:	

	A.	IMPROPER DISCHARGE	75.00—300.00
	C.	IMPROPER DISCHARGE	75.00—300.00
	D.	IMPROPER CONSTRUCTION, INSTALLATION OR OPERATION	75.00—300.00
15.65.025	RESTRICTIONS ON DISCHARGES:		
	A.	IMPROPER DISCHARGE	75.00
	B.	IMPROPER HINDRANCE	75.00
15.65.030	DISPOSAL PERMITS:		
	A.	FAILURE TO OBTAIN PERMIT	75.00
15.65.035	PERMIT FOR BUSINESS:		
	A.	FAILURE TO OBTAIN PERMIT	75.00—300.00
15.65.070	HOLDING TANKS:		
	A.	INSTALLATION PROHIBITED	75.00
	B.	IMPROPER INSTALLATION	75.00]
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(AO No. 93-167(S-1), § 1, 4-13-94; AO No. 94-108, § 1, 10-5-94; AO No. 94-134, § 2, 9-8-94; AO No. 95-42, § 2, 3-23-95; AO No. 95-67(S), § 9, 7-1-95; AO No. 95-102, § 1, 4-26-95; AO No. 95-118, § 3, 9-1-95; AO No. 95-163(S), § 21, 8-8-95; AO No. 95-195(S-1), 1-1-96; AO No. 96-51(S-1), § 2, 8-1-96; AO No. 96-96(S-1), § 2, 2-1-97; AO No. 96-126(S), § 3, 10-1-96; AO No. 96-137(S), § 9, 1-2-97; AO No. 97-88, § 3, 6-3-97; AO No. 97-107, § 3, 11-17-97; AO No. 97-133(S), § 1, 11-11-97; AO No. 98-27(S-1), § 2, 11-11-97; AO No. 98-160, § 2, 12-8-98; AO No. 99-13(S), 2-9-99; AO No. 99-91(S), § 4, 7-13-99; AO No. 2000-64, § 1, 4-18-00; AO No. 2000-116(S), § 4, 7-18-00; AO No. 2000-127(S), § 2, 10-14-00; AO No. 2000-129(S), § 26, 11-21-00; AO No. 2001-48, § 1, 3-13-01; AO No. 2001-74(S), § 2, 4-17-01; AO No. 2001-4, § 2, 2-6-01; AO No. 2001-145(S-1), § 11, 12-11-01; AO No. 2003-68, § 1, 9-30-03; AO No. 2003-97, § 4, 9-30-03; AO No. 2003-117, § 2, 1-28-03; AO No. 2003-130, § 8, 10-7-03; AO No. 2003-152S, § 10, 1-1-04; AO No. 2004-1, § 2, 1-1-03; AO No. 2004-99, § 2, 6-22-04; AO No. 2004-100(S-1), § 6, 1-1-05; AO No. 2004-171, § 1, 1-11-05; AO No. 2005-160, § 9, 11-1-05; AO No. 2005-84(S), § 3, 1-1-06; AO No. 2005-185(S), § 35, 2-28-06; AO No. 2005-124(S-1A), § 33, 4-18-06; AO No. 2006-39, § 6, 4-11-06; AO No. 2006-54, § 1, 5-2-06; AO No. 2006-80, § 1, 6-6-06; AO No. 2007-50, § 4, 4-10-07; AO No. 2007-60, § 4, 11-1-07; AO No. 2007-70, § 3, 5-15-07; AO No. 2008-84(S), § 5, 7-15-08; AO No. 2009-61, § 3, 7-7-09; AO No. 2009-82, § 5, 7-7-09; AO No. 2009-40(S), § 3, 7-21-09; AO No. 2009-112, § 4, 10-13-09; AO No. 2009-122, § 2, 12-17-09; AO-2010-35(S), § 7, 5-11-10; AO No. 2010-39, § 2, 5-11-10; AO No. 2010-87(S), § 3, 12-7-10; AO No. 2011-46, § 4, 4-12-11; AO No. 2011-59, § 10, 5-24-11; AO No. 2011-106(S), § 3, 11-8-11; AO No. 2011-112, § 4, 11-22-11, eff. 12-22-11; AO No. 2012-10, § 1, 1-31-12; AO No. 2012-77, § 29, 8-7-12; AO No. 2013-109(S-1), § 5, 12-3-13; AO No. 2013-130(S-1), § 1, 1-14-14; AO No. 2014-42, § 31, 6-21-14; AO No. 2014-85, § 4, 8-5-14; AO No. 2014-110(S), § 2, 9-9-14; AO No. 2014-137(S), § 3, 11-18-14; AO No. 2015-23(S), § 20, 3-24-15; AO No. 2015-48, § 16, 5-14-15; AO No. 2015-

54, § 1, 5-26-15 ; AO No. 2015-65, § 4, 6-9-15 ; AO No. 2015-111(S-1), § 2, 1-1-16 ; AO No. 2016-16(S), § 4, 2-9-16 ; AO No. 2016-76(S), § 7, 7-12-16 ; AO No. 2016-81(S), § 4, 8-25-16 ; AO No. 2016-83(S), § 9, 7-26-16 ; AO No. 2016-82 , § 3, 8-9-16; AO No. 2016-116 , § 2, 10-18-16; AO No. 2016-115(S) , § 2, 11-15-16; AO No. 2016-124(S) , § 11, 12-20-16)

Section 3. Anchorage Municipal Code chapter 15.65 is hereby repealed in its entirety and reenacted to read as follows:

CHAPTER 15.65 WASTEWATER DISPOSAL

PART I - ON-SITE WASTEWATER DISPOSAL GENERAL REQUIREMENTS

15.65.005	Intent and Scope of Chapter
15.65.010	Definitions
15.65.015	Powers and Duties of the Director
15.65.020	On-site Water and Wastewater Technical Review Board
15.65.025	Practitioner Qualifications
15.65.030	Owner-installers
15.65.035	On-site Wastewater Discharge Requirements
15.65.040	Connection to Public Sewer System
15.65.045	Alternative On-site Wastewater Disposal Systems
15.65.050	On-site Wastewater Disposal Permits
15.65.055	Waivers for On-site Wastewater Disposal Systems
15.65.060	Certificate of On-site Systems Approval
15.65.065	Component and Material Specifications and Approvals
15.65.070	Inspections of On-site Disposal System Installations
15.65.075	Fines
15.65.080	Impact on the Ability to Develop Adjoining Land

PART II - CONVENTIONAL WASTEWATER DISPOSAL SYSTEMS

15.65.205	Septic Tanks
15.65.210	Subsurface Disposal Fields
15.65.215	Holding Tanks
15.65.220	STEP Tanks, Lift Stations, and Pump Vaults
15.65.225	Earth Privies
15.65.230	Vault Privies
15.65.235	Maintenance Requirements for On-site Disposal Systems

PART III - ADVANCED WASTEWATER TREATMENT SYSTEMS (AWWTS)

15.65.305	Regulation of AWWTS
15.65.310	AWWTS Selection and Acceptance Procedures
15.65.315	Appeal of Rejection or Category Classification
15.65.320	General Requirements for Sampling Procedures
15.65.325	Specific Requirements for Sampling Procedures
15.65.330	Wastewater Characteristics for AWWTS Testing
15.65.335	Category I Wastewater Treatment Standards
15.65.340	Category II Wastewater Treatment Standards
15.65.345	Category III Wastewater Treatment Standards

- 15.65.350 Nitrogen Reducing Systems
- 15.65.355 General Design Requirements
- 15.65.360 Maintenance and Repair
- 15.65.365 Maintenance and Repair, and Service Agreements

PART IV - SUBDIVISION STANDARDS FOR LOTS SERVED BY ON-SITE DISPOSAL SYSTEMS

- 15.65.405 Subdivision Submittal Requirements
- 15.65.410 Subdivision Standards

PART I ON-SITE WASTEWATER DISPOSAL GENERAL REQUIREMENTS

15.65.005 - Intent and Scope of Chapter.

- A. **Intent.** On-site wastewater disposal systems provide an important, economically efficient, and effective method of wastewater disposal that is protective of public health in areas of the municipality not served by an integrated sewage collection and disposal system. The intent of this chapter is to maintain the public health and environmental quality through the regulation of on-site wastewater disposal. On-site wastewater disposal systems shall conform to the standards in this chapter, 18 AAC 72 and applicable portions of the Uniform Plumbing Code (UPC), as amended. When the requirements within this chapter conflict with the requirements of 18 AAC 72 or the UPC, this chapter shall prevail.
- B. **Scope.** This chapter provides:
 - 1. Minimum standards governing the design, installation and operation of on-site wastewater disposal systems for single-family dwellings, including duplexes and accessory dwelling units (ADU) as defined by Title 21, and authority to the municipality to administer and enforce these standards and regulations.
 - 2. Prohibitions against wastewater discharges other than through approved means.
 - 3. Authority to the municipality to require connection to public sewers and the conditions under which such connection shall occur.
 - 4. Minimum standards for new subdivisions that are to be served by on-site wastewater disposal systems.

15.65.010 - Definitions.

The following words, terms, and phrases, when used in this chapter, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

18 AAC 72 – State of Alaska wastewater regulations [Title 18, Alaska Administrative Code, Chapter 72 Wastewater Treatment and Disposal].

18 AAC 80 - State of Alaska drinking water regulations [Title 18, Alaska Administrative Code, Chapter 80 Drinking Water].

Absorption Area - Area in a subsurface disposal field used to absorb treated effluent. The calculation of absorption area depends on the type of system design.

ADEC - Alaska Department of Environmental Conservation.

ADU - Accessory dwelling unit.

AAC - Alaska Administrative Code.

Advanced Wastewater Treatment Systems (AWWTS) - All wastewater disposal systems, designs, or types, that use advanced technology to provide a higher quality effluent than a conventional septic system as described in chapter 15.65 Part III.

Alternative System - A particular design or type of on-site wastewater disposal system or component of a system based upon improvements or development in technology of sewage disposal and not otherwise provided for in this chapter.

Assembly - Municipality of Anchorage assembly.

Bedrock - A rock formation that would require blasting or drilling to be mined. Bedrock includes fractured and weathered bedrock.

CBOD₅ - Five day carbonaceous biochemical oxygen demand.

Certificate of On-site Systems Approval - A written confirmation signed by an engineer and the department certifying that the on-site sewer and/or water system serving a single-family or duplex dwelling is functional and complies with all state and local regulations and codes.

Cesspool - A subsurface pit which receives untreated wastewater.

Conventional Wastewater System - A passive septic tank, with or without a lift station, and subsurface disposal field.

COSA - Certificate of On-site Systems Approval.

Department - Municipality of Anchorage On-site Water and Wastewater Section.

Director - The director or designee of the department unless otherwise indicated in the text of the code.

Disposal Field (aka Drainfield):

Wide Trench - An excavation, typically five feet in width, which contains not less than six inches and not more than four feet of sewer gravel below the horizontal perforated distribution pipe. It receives treated wastewater and allows it to seep into native soil through the bottom basal area and the excavation sidewalls below the elevation of the horizontal perforated distribution pipe.

Deep Trench - A linear excavation, typically twelve to thirty-six inches wide, which contains at least four feet of sewer gravel below the horizontal perforated distribution pipe. It receives treated wastewater and allows it to seep into native soil through the excavation sidewalls below the elevation of the horizontal perforated distribution pipe.

Bed - A shallow excavation, usually rectangular, and between five and fifteen feet in width, containing a minimum of six inches of sewer gravel below the horizontal perforated distribution pipes. It receives treated wastewater and allows it to seep into native soil through the bottom basal area only.

Mound - A bed or wide trench, designed for bottom absorption only wherein the bottom of the sewer gravel is elevated above the surrounding soil surface.

Seepage Pit - A covered porous walled pit through which treated effluent seeps into the surrounding soil.

Drainfield - See Disposal Field.

Drainrock (aka Sewer Rock and Sewer Gravel) - Coarse, washed aggregate placed in a disposal field excavation to provide retention and distribution of treated effluent before it passes into the accepting soil.

Drainpipe (aka Distribution Pipe) - Pressurized or non-pressurized piping in the drainfield that is used to distribute the effluent to the absorptive area.

Earth Privy - A device for the disposal of human excreta in an unlined pit in the earth.

Engineer - A registered professional engineer in the State of Alaska.

ERS - Engineered Receiving Soil.

Filter Sand - Sand used in the construction of a disposal field to provide additional vertical separation and/or enhanced treatment of effluent before it passes into native soil or ERS.

Groundwater - Subsurface water permanently or seasonally occupying the zone of saturation.

Hazardous Substance - Wastes defined as hazardous under federal, state, and municipal law.

Holding Tank - A watertight, covered receptacle designed and built to receive and store domestic wastewater for disposal at another location.

Impermeable Soil - Soil with a percolation rate greater than 120 minutes per inch.

Insulation - High-density, direct-burial, closed-cell foam insulation or an equivalent approved by the department.

Invert - The lowest portion of the inside of a horizontal pipe.

Lift Station - A tank or chamber accompanied by a pump and related controls used to retain wastewater and periodically discharge it.

Malfunction and Malfunctioning System - An on-site wastewater disposal system which is not functioning in compliance with the requirements of this chapter or the design of the system. Malfunctions include but are not limited to the following:

- A. Absorption systems and disposal systems which allow unauthorized seepage or flow of wastewater to the surface of the ground or into waters of the state.
- B. Systems which fail to operate in accordance with municipal design criteria.
- C. Systems discharging effluent that does not comply with the applicable effluent discharge standards.
- D. Collapse or structural deterioration of a tank, lift station, or pump vault degraded to a point that it is no longer water tight, structurally sound, or functional to meet its intended purpose.

MASS - Municipality of Anchorage Standard Specifications.

Municipality - Municipality of Anchorage.

Owner - The person responsible for control of the property on which an on-site wastewater disposal system exists or for which one is proposed.

Percolation Rate - The rate at which water flows or trickles through porous soils, as determined by a percolation test.

Percolation Test - A falling-head percolation test as described in subsection 15.65.210C.5. The test is performed for a proposed subsurface disposal field or earth privy to determine the rate at which water is absorbed by the soil.

Pressure Distribution System- A network of piping with orifices that are sized to distribute effluent from a Lift Station under pressure to a drainfield so as to distribute the hydraulic and organic loading uniformly throughout the absorption area.

Public Sewer - A sewer that is operated by a public utility as defined in AS 42.05.990(4).

Public Water System - Defined by 18 AAC 80.1990(111).

Pump Vault - A tank or chamber accompanied by a pump and related controls used to retain wastewater and periodically discharge it.

Repair - To restore or replace a component of an on-site wastewater disposal system, but does not include an enlargement of any component of the system.

Replacement Disposal Site - An area suitable for an on-site subsurface disposal field which is identified and set aside for that purpose during the permitting process.

Reserved Area – On-site property identified for the purpose of wastewater disposal during the platting process.

Septic Tank - A watertight covered receptacle designed and built to receive wastewater, separate floating and settling solids from the liquid, anaerobically digest organic matter, store digested solids through a period of detention, and allow clarified liquids to discharge for final disposal.

Sewer Gravel (aka sewer rock or drainrock) - See Drainrock.

State - State of Alaska.

STEP Tank - Septic Tank Effluent Pumping System – A two compartment septic tank with a pump system in the second compartment designed to discharge effluent based upon volume in the second compartment and/or a timed pump cycle frequency.

Subsurface Disposal Field - See Disposal Field.

Subsurface Drain - Any subsurface drainage structure which intercepts or diverts underground water flows.

Surface Water - Any water visually observable on the ground surface for a period of at least sixty consecutive days.

Exception:

A. Wetlands with no visually observable water on the ground surface.

B. Frozen water including glaciation.

TN - Total nitrogen consisting of organic nitrogen, ammonia, nitrite and nitrate.

TP - Total phosphorus.

TSS - Total suspended solids.

USCS - Unified Soil Classification System.

Vault Privy - An earth privy in which the pit is lined with an impervious material and for which provisions are made for the removal of excreta.

Wastewater - Water contaminated by human excreta, food waste, wash water, and other liquid wastes commonly discharged into water-carried sewage disposal systems, and such diluting water as may have entered the wastewater disposal system. Wastewater does not include storm water and liquids containing hazardous substances.

Water-carried Sewage Disposal System - A wastewater disposal system through which wastes are conveyed with the aid of water.

Water Table - The level of water in saturated soil where the hydraulic pressure is zero.

15.65.015 - Powers and Duties of the Director.

A. **Director.** The director is hereby authorized and directed to enforce the provisions of this code. The director is authorized to render interpretations of this code and to adopt policies and procedures in order to clarify the application of its provisions. Such interpretations, policies, and procedures shall be in compliance with the intent and purpose of this code. Such interpretations, policies, and procedures shall not have the effect of waiving requirements specifically provided for in this code.

B. **Right of entry.** Where it is necessary to make an inspection to enforce the provisions of this code, or where the director has reasonable cause to believe there exists upon a premises a condition contrary to or in violation of this code which makes the premises or neighboring properties unsafe, dangerous or hazardous, the director is authorized to enter the premises at

reasonable times to inspect or to perform the duties imposed by this code. If such premises is occupied, credentials shall be presented to the occupant and entry requested. If such premises is unoccupied, the director shall first make a reasonable effort to locate the owner or other person having charge or control of the premises and request entry. If entry is refused, the director shall have recourse to the remedies provided by law to secure entry.

C. **Modifications.** Whenever there are practical difficulties involved in carrying out the provisions of this code, the director has the authority to grant modifications for individual cases, upon application of the owner or owner's representative, provided the director shall first find a special individual reason making the strict letter of this code impractical, the modification is in compliance with the intent and purpose of this code, and such modification does not lessen health, life and fire safety, or structural requirements. The details of action granting modifications shall be entered in the files of the Development Services Department.

D. **Alternative materials, design, and methods of construction and equipment.** The provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code, provided any such alternative has been approved. An alternative material, design or method of construction shall be approved where the director finds the proposed design is satisfactory and complies with the intent of the provisions of this code, and the material, method or work offered is, for the purpose intended, at least the equivalent prescribed in this code in quality, strength, effectiveness, durability and safety.

15.65.020 - On-site Water and Wastewater Technical Review Board.

In addition to the powers and duties under section 4.40.150, contested decisions made by the director may be appealed to the On-site Water and Wastewater Technical Review Board.

15.65.025 - Practitioner Qualifications.

A. **Continuing education for engineers.** The department may conduct, sponsor, or approve continuing education seminars in the field of on-site wastewater engineering. The department shall maintain a list, available to the public, of engineers who have attended such a seminar within the previous three years.

B. **Certification for installers:**

1. A person shall not engage in the business of installing, modifying, or repairing on-site wastewater disposal systems without first obtaining certification from the department. An application for certification under this section shall be

submitted on a form provided by the department on an annual basis.

2. Installers shall attend a department-sponsored class every three years to be eligible for certification.
3. Certifications issued under this section expire at the end of the calendar year in which they were issued.
4. The director may cancel or revoke any certification issued under this section, if in the opinion of the director, the certified installer shows incompetence or if such certification was obtained by fraud. If the certification is cancelled or revoked, another certification shall not be granted to the person within twelve months after the date of cancellation or revocation.
5. Decisions made by the director to cancel or revoke a certification issued under this section may be appealed to the On-site Water and Wastewater Technical Review Board. The board shall render all decisions and findings in writing to the appellant, with a duplicate copy to the director.

15.65.030 - Owner-installers.

- A. The department may issue an approval for a homeowner to perform work on an on-site wastewater disposal system to serve that individual's owner-occupied, single-family or duplex home if the homeowner meets the requirements of this section:
 1. The property owner and the excavation equipment operator may perform work on no more than one owner-installation project in a twelve month period.
 2. The owner shall submit a signed department-issued application form requesting the owner be allowed to perform the work. The owner shall include statements on the form regarding all of the following items:
 - a. The owner's projected active involvement with the installation.
 - b. The name of the excavation equipment operator, if not the owner.
 - c. That there will be no monetary compensation for installation services rendered.
 - d. The name of the inspecting engineer retained for inspection services.

3. The property owner shall have the project-specific On-site Wastewater Disposal System Permit available at the construction site for the duration of all related work.

15.65.035 - On-site Wastewater Discharge Requirements.

- A. **Wastewater disposal system required.** A lot or parcel serving a single-family dwelling, including accessory dwelling units (ADU) and duplexes, served by a well or public water supply, shall have an on-site wastewater disposal system conforming to this chapter, or be connected to a public sewer or community wastewater treatment/disposal system approved by ADEC.
- B. **Construction, installation and use of on-site wastewater disposal systems.** A person shall not construct, install, repair, or use an on-site wastewater disposal system except in accordance with the provisions of this chapter or other ordinances, regulations, or statutes in effect at the time of system construction.
- C. **Existing on-site wastewater disposal systems:**
 1. Except as provided in this section, any on-site wastewater disposal system installed pursuant to a construction permit before the effective date of this chapter may operate in compliance with the installation and design standards that were in effect when the permit for the installation of the system was issued.
 2. Repair of broken pipes, moving parts, or perforated tanks shall be accomplished in accordance with this chapter.
 3. If a component of an on-site wastewater disposal system malfunctions and is replaced, its replacement shall be in compliance with this chapter.
 4. Cesspools shall not be installed or operated.
- D. **Discharges into on-site wastewater disposal systems:**
 1. No person shall permit any wastewater to be discharged or disposed of except into an on-site wastewater disposal system conforming to the standards of this chapter or into a public sewer or community wastewater treatment/disposal system in accordance with the requirements of the regulating authority.
 2. A person shall not permit any wastewater to be discharged or disposed of on the surface of the ground or in such a manner that it may gain access to surface water or groundwater except in accordance with provisions of section 15.65.045.

3. A person shall not permit any machinery cooling water, footing drain water, surface water, roof drainage water, or hazardous substance to be discharged into any on-site wastewater disposal system.
4. A person shall not cause any object or substance to be placed in any on-site wastewater disposal system which might hinder the operation of the system.

15.65.040 - Connection to Public Sewer System.

- A. When this code prohibits the operation of an on-site wastewater disposal system, that system shall be removed or decommissioned in accordance with this chapter at the owner's expense.
- B. Any lot which is served by an on-site wastewater disposal system and for which there is not a replacement disposal site and to which public sewer is available must connect to the public sewer at such time as the on-site wastewater disposal system fails or requires upgrading. Simple repairs of broken pipes, moving parts, or accidental puncture of the tank may be accomplished in accordance with original design standards.
- C. A public sewer system is available to a lot or parcel when either of these conditions apply:
 1. A public sewer line extends the full frontage of at least one side of the lot or parcel.
 2. The lot or parcel abuts a cul-de-sac in which a sewer line extends past the center of the bulb of the cul-de-sac.
- D. Undeveloped lots which contain less than 40,000 square feet within lot lines shall not construct an on-site wastewater disposal system if the public sewer system has been approved or installed. An approved public sewer system means a system which will be under construction within one calendar year from the application for an on-site wastewater disposal system.
- E. A person shall not operate a holding tank for more than a year after a public sewer is available.

15.65.045 - Alternative On-site Wastewater Disposal Systems.

- A. The department may submit all proposals to the On-site Water and Wastewater Technical Review Board for consideration prior to issuance of a provisional permit and may provide a reasonable period for public review and comment on any proposal.
- B. The department may issue provisional permits allowing the installation and operation of alternative systems which meet or

1 exceed the treatment standards of this chapter. Permits shall be for
2 a period of one year, during which time testing and evaluation of
3 the particular system shall be conducted.
4

- 5 C. Anyone proposing to install an alternative system shall submit to
6 the department a description of the system and an effluent testing
7 and reporting program. Tests required by the department shall
8 include but are not limited to tests for fecal coliform, suspended
9 solids, biological oxygen demand, pH, dissolved oxygen, and total
10 nitrogen.
11
- 12 D. The department may require that the person installing the
13 alternative system provide a detailed description of maintenance,
14 operation and abandonment procedures which ensure the
15 alternative system will operate in compliance with applicable laws
16 and regulations.
17
- 18 E. As a condition of issuing a permit for an alternative system, the
19 department may require that a bond payable to the municipality be
20 provided in an amount sufficient to pay the cost of repair or
21 conversion of the on-site wastewater disposal system so that it
22 complies with this chapter.
23
- 24 F. The department may enter into a contract with an installer and/or
25 engineer through which appropriate responsibilities for installation,
26 maintenance, testing, reporting, and system abandonment are
27 established and compliance with laws and regulation are ensured.
28
- 29 G. The department may fund all or any part of a nonproprietary
30 alternative on-site wastewater treatment system program.
31
- 32 H. After the period of the provisional permit, the department shall
33 evaluate the contract and the performance and practicability of the
34 system.
35
- 36 I. Upon demonstration to the satisfaction of the department of the
37 effectiveness and practicality of the alternative system, the
38 department may propose changes in regulations or ordinances to
39 enable use of the system.
40

41 **15.65.050 - On-site Wastewater Disposal Permits.**

42

- 43 A. **Permit required.** A person shall not install or modify an on-site
44 wastewater disposal system without a permit from the department,
45 except for simple repairs such as piping or moving parts repairs. A
46 permit is required for any modifications or repairs below the
47 horizontal distribution pipe of a soil absorption system.
48
- 49 B. **Fees.** Fees shall be assessed in accordance with chapter 23.10,
50 Table 3-L – On-site services fees.
51

1 C. **Submittal of application.** All permits require an application
2 prepared and signed by the applicant or authorized representative.
3 Such applications shall be submitted on forms provided by the
4 department.

5
6 D. **Contents of application for installation, repair, or modification**
7 **of subsurface wastewater disposal systems.** An application for a
8 permit to install a new wastewater disposal system, or to repair or
9 modify an existing subsurface disposal field, shall include all of the
10 following:

11
12 1. **Survey.** A current as-built survey or plot plan is required.

13
14 2. **Site plan.** A site plan, bearing the signed and dated seal of
15 the engineer, drawn to a standard engineering scale not
16 smaller than 1" = 100', which includes all of the following:

17
18 a. The legal description of the property on which the
19 system is located.

20
21 b. The location of the on-site well and all components of
22 the on-site wastewater disposal system, including but
23 not limited to all piping and manholes, septic tank or
24 holding tank, lift station, cleanouts, standpipes, the
25 subsurface disposal field, including all attendant
26 piping, and the replacement subsurface disposal field.

27
28 c. Dimensions when necessary to confirm compliance
29 with separation distances.

30
31 d. The location of all wastewater collection and disposal
32 systems, wells, water distribution piping, surface
33 water, wetlands, roads, property lines and structures
34 within 200 feet of the proposed system.

35
36 **Exception:** Any item listed above where the furthest
37 extent of its required separation distance to the
38 proposed improvements, as defined in this chapter, is
39 greater than fifty feet from the proposed
40 improvements;

41
42 e. The location of all soil, percolation, and water table
43 tests within thirty feet of the proposed drainfield.

44
45 f. A depiction of the relevant topography and surface
46 drainage patterns affecting the design of the system,
47 including the location and extent of slopes as
48 described in subsections 15.65.210B.1.c. and d.
49

3. **Design drawings.** A design of the on-site wastewater disposal system bearing the signed and dated seal of the engineer.
4. **Soil test results.** The results of soil, percolation, and water table tests conducted in accordance with this chapter. For new systems, these tests shall be conducted and reported for both the original and replacement subsurface disposal fields.
5. **Narrative.** A narrative signed and dated by the engineer describing the scope of the project and probable adverse impacts to adjacent properties. The comments shall include, but are not limited to, consideration of all of the following:
 - a. Wells;
 - b. Wastewater disposal systems;
 - c. Replacement disposal site; and
 - d. Drainage flowing onto and off of the subject property that could adversely affect performance of the proposed wastewater disposal system.
6. **Other required permits.** Copies of all local, state, and federal permits required for construction of an on-site wastewater system, including wetlands permits.

E. **Contents of application for replacement of tanks.** An application for a permit to replace any tank that is part of an on-site wastewater disposal system shall include all of the following:

1. **Site plan.** A site plan, bearing the signed and dated seal of the engineer, drawn to a standard engineering scale not smaller than 1" = 100', which includes all of the following:
 - a. The legal description of the property on which the system is located.
 - b. A depiction of the proposed replacement.
 - c. Locations or dimensions from the proposed position of the new tank that address all features listed in subsection 15.65.205B.
2. **Narrative.** A narrative signed and dated by the engineer describing the scope of the project and probable adverse impacts to adjacent properties.

1 F. **Change orders.** Any changes made prior to or during construction
2 that are not in conformance with the approved design shall be
3 submitted for approval through a change order. Change orders
4 shall be submitted with the change order form provided by the
5 department.

6
7 G. **Department authority and responsibility for permits.**

8
9 1. **Permits.** The department shall determine, after review of
10 the application and test results as well as available historic
11 data, whether the proposed system complies with this
12 chapter. The permit may be denied if provisions of this
13 chapter or accepted engineering and construction practices
14 are not met.

15
16 2. **Additional information.** The department may conduct site
17 inspections or require submission of additional information
18 prior to the issuance of permits. Information may include but
19 is not limited to soil and percolation test results and
20 topographic maps.

21
22 3. **Waivers.** The department may grant waivers for an on-site
23 wastewater disposal system that does not conform to this
24 chapter if, after consideration of relevant test results,
25 engineering data, publications and other materials, the
26 department finds that the system will function as effectively
27 as a system that conforms to this chapter. The applicant
28 shall be responsible for furnishing proof that the system will
29 function as effectively as a system provided for in this
30 chapter.

31
32 4. **Non-liability of department.** Issuance of a permit does not
33 constitute assumption by the department or its employees of
34 liability for the failure of any on-site wastewater disposal
35 system.

36
37 H. **Expiration or revocation of permit or permit application.**

38
39 1. **Expiration of permit application.** A permit application for
40 an on-site wastewater disposal system shall expire one year
41 from the date of submittal.

42
43 2. **Expiration of permit.** A permit for an on-site wastewater
44 disposal system shall expire one year from the date of
45 issuance. If there has not been a change to this code, a
46 permit may be renewed after payment of the renewal fee
47 and department review.

48
49 3. **Grounds for revocation, suspension, and restriction of**
50 **permits.** The department director may revoke, suspend, or

otherwise restrict a permit, issued by the department, upon any of the following grounds:

- a. Any false statements or information set forth in the application;
- b. Any violation of the express terms or provisions of the permit;
- c. The commission of any act or omission which violates the requirements of this chapter; or
- d. Failure to comply with state and federal regulations.

- I. **Responsibility of department to maintain records.** The department shall maintain indexed records of pertinent engineering data submitted for approved permits and inspection reports and make this data available to the public. This data will provide historical information to aid in the design and approval of future systems.

15.65.055 - Waivers for On-site Wastewater Disposal Systems.

A. Departmental authority.

1. When authorized by ADEC, the department may issue waivers to the separation distances required between on-site wastewater disposal systems, which are regulated by this chapter, and items specified in state code.
2. The department may issue waivers if the issuance of such waivers will not adversely affect achievement of the objectives of this chapter and will not be in conflict with State of Alaska law.

B. Content of waiver application. A written request for a waiver must be submitted by an engineer and must contain, but is not limited to, all of the following:

1. **Waiver description.** A description of the waiver being requested.
2. **Technical information in support of waiver request.** Information on soil, topography, lot size, anticipated wastewater flow, and other technical information relevant to the request.
3. **Proposed mitigating measures.** Any measures which are proposed to mitigate adverse effects associated with the waiver.

4. **Narrative.** A narrative signed and dated by the engineer identifying adverse impacts associated with granting the waiver request.

- C. **Departmental review and decision.** The department must review each waiver request and must issue a written decision. A denial of a waiver request must include reasons for the denial. A record of the request, review and analysis procedure, and approval or denial shall be maintained by the department for public inspection.

15.65.060 - Certificate of On-site Systems Approval.

- A. **COSA required for title transfer.** Prior to the transfer by gift, deed or contract of ownership or use interest in an on-site wastewater disposal system regulated by this chapter, the transferor shall obtain a COSA from the department. If a COSA is not obtained prior to transfer of title, the wastewater disposal system shall be deemed out of compliance with this chapter until such time as a certificate is obtained.

Exception: The requirements of this section do not apply to transfers between spouses, or to a family trust.

- B. **Documentation.** COSA submittals shall be on forms provided by the department and address all of the following topics:

1. **Separation distances.** Verification that separation distances identified on the COSA forms are in compliance with the code in effect when the septic system was approved for operation.
2. **As-built survey.** An as-built property survey drawn to a standard engineering scale not smaller than 1"=100'. The as-built survey shall include all structures, driveways, parking areas, septic system standpipes and water wells.
3. **Tank pumping, lift station maintenance, and pump vault maintenance.** Any septic tank, holding tank, lift station, or pump vault associated with the septic system shall be pumped and maintained in accordance with this Chapter within twelve months of the COSA submittal date. Documentation may be required.

Exception: Advanced wastewater treatment systems when verified to have been receiving scheduled maintenance in accordance with this chapter.

4. **Standpipes.** Verification that:
 - a. Standpipes, as indicated on the inspection report, are accessible for inspection and maintenance of the system.

- b. Drainfield monitoring tubes are set to a depth which allows for an accurate determination of the liquid depth in the disposal field. If monitoring tube is not set to designed depth stated on the inspection report, engineer shall note actual depth.

5. **Disposal field adequacy test.** A wastewater disposal field shall pass an adequacy test. The operating liquid level in the disposal field shall not be at or above the distribution pipe invert prior to commencing the adequacy test. The adequacy test shall be conducted in accordance with the following procedure:

- a. **Presoaking.** Disposal fields not in use for thirty days or longer shall be presoaked with clean water prior to commencement of the adequacy test. The adequacy test shall be conducted within forty-eight hours of completing the presoak. The volume of clear water required for presoaking the disposal field shall be the lesser of the following:

- i. 2,000 gallons.
- ii. The gallons of water equal to the volume of the drainfield below the distribution pipe invert multiplied by 0.4.
- iii. The maximum gallons of water the disposal field accepted without the liquid level raising above the top of the distribution pipe during the presoak.

- b. **Adequacy test.** A measured quantity of water, consisting of 150 gallons per bedroom, shall be introduced into the disposal field while monitoring fluid levels in the septic tank and disposal field monitor tubes before, during, and after the addition of water. The quantity of water introduced shall be sufficient to cause the fluid depth in the monitor tubes to increase enough to allow accurate measurement of the subsequent re-absorption. At no time during the course of the adequacy test shall the system be surcharged with a fluid depth greater than the top of the distribution pipe. Based on these measurements the engineer shall make a determination as to whether or not the system is capable of absorbing 150 gallons of water per bedroom per day. Systems that fail an adequacy test shall be reported to the department.

Exception: A disposal field installed or adequacy tested within twenty-four months of the COSA issuance date does not require an adequacy test.

- C. **Waivers for horizontal separation distances.** If a horizontal separation distance noted on the COSA form does not comply with this code or the code in force when the final inspection report and record drawings were approved, a waiver shall be obtained prior to issuance of the COSA.
- D. **Engineer's certification.** The engineer shall certify on department provided COSA forms that the wastewater disposal system appears to comply with the system's approved final inspection report and record drawings.
- E. **COSA issuance.** Upon request, and subject to the provisions of this section, the department may issue or deny the issuance of a COSA.
1. **Unconditional approval.** The department shall issue a COSA if the department finds information provided by the engineer demonstrates the system for which the certificate is sought is in compliance with this section, the system's approved final inspection report and record drawings, and does not presently create a health hazard.
 2. **Conditional approval.** When an on-site wastewater disposal system is not in compliance with the applicable codes, but no health hazard is posed by temporarily postponing correction of the wastewater disposal system's defects, the department may issue a conditional COSA to extend the period of time for corrective action. The COSA may be approved with conditions necessary to ensure that the public health and safety are not endangered. The specific requirements for a conditional COSA approval shall be:
 - a. The conditional COSA fee has been paid.
 - b. If required, an approved design and permit for the required upgrades and/or repairs has been issued.
 - c. Three estimates for the related construction shall be submitted to the department.
 - d. A letter from an established escrow agency, stating 1.5 times the highest construction estimate is being held in escrow for the specific purpose of funding the proposed construction, shall be submitted to the department.

Exception: b., c., and d. are not required for upgrades and/or repairs that are less than \$2,000.

- F. **COSA guidelines.** The department shall compile and make available to the public comprehensive guidelines regarding the procedures to be followed in applying for and obtaining a COSA.

15.65.065 - Component and Material Specifications and Approvals.

- A. The department shall issue and maintain standards and specifications for component parts and materials used in the construction of on-site wastewater disposal systems.
- B. Wastewater disposal system components and materials shall be approved by the department in accordance with the current edition of the department's publication, "Standards and Specifications for Component Parts and Materials Used in Construction of On-site Wastewater Disposal Systems". The approval process shall include submittal of a department provided equipment approval request form, all required documents and the associated review fee. The approval request shall be reviewed and approved by the department prior to the installation or use of the requested components or materials in any on-site wastewater disposal system.

Exception: Components incidental to the septic system including but not limited to piping, fittings, pumps and valves that are listed or labeled by a department-approved accredited third party listing agency for the intended use do not require the department submittal/approval process.

15.65.070 - Inspections of On-site Disposal System Installations.

- A. An on-site wastewater disposal system shall not be backfilled, completed, or used until an engineer has inspected and takes no exception to the installation, in accordance with this section. The engineer shall notify the department twenty-four hours in advance of the anticipated construction schedule for all installations. The engineer shall notify the department at least two hours prior to the bottom of excavation (bottom of hole) inspection for tanks and disposal fields. The department may require similar notification of other inspections for which it wishes to be present.
- B. The engineer shall conduct a minimum of four on-site inspections during installation of any soil absorption system.
1. The first inspection shall be conducted prior to the start of construction and shall include the following items:

- a. Preconstruction meeting between the contractor and the engineer to discuss construction procedures and design requirements.
 - b. Verify site conditions conform to the design plans and permit.
 - c. Verify the project layout conforms to the design plans and permit.
2. An inspection shall be conducted after the excavation of all native material for the disposal field has been completed, but prior to placement of filter sand and drainrock. The purpose of this inspection is to allow verification that the native material conforms to the soils log and that the excavation is to the correct depth.
 3. An inspection shall be conducted after placement of the filter sand, if utilized.
 4. An inspection shall be conducted after placement of drainrock, and installation of distribution lines, cleanouts and monitor tubes, but prior to placement of insulation, silt barrier, or backfill.
 5. An inspection shall be conducted after the system has been backfilled to verify final grading and the location of all standpipes.
- C. The installation of a septic or holding tank requires two inspections by the engineer.
1. An inspection shall be conducted after the tank is set in place with distribution pipes and cleanouts installed, but prior to backfill.
 2. An inspection shall be conducted after the tank has been backfilled to verify final grading, electrical equipment installation, and the locations of all standpipes.
- D. Within ninety working days from the date of the final inspection of an on-site wastewater disposal system, a final inspection report, including but not limited to the information described in subsection E. of this section, shall be submitted to the department by the owner or his authorized representative. The final inspection report shall bear the seal of an engineer and be on a form and to standards prescribed by the department. Inspection reports for replacement or modification of system components may encompass only those features appropriate to the specific component.

- 1 E. The final inspection report shall include record drawings, drawn at
2 an appropriate scale on 8 ½ by 11-inch sheets, and all of the
3 following:
4
- 5 1. A plan view showing the location of all system components
6 and all features described in subsections 15.65.050D.2. and
7 E.1.
8
 - 9 2. A profile showing the relative elevation of the following with
10 respect to an actual or assumed elevation mark:
11
 - 12 a. Invert elevations of tank inlet and outlet.
 - 13 b. Invert elevations of the beginning and end of all
14 distribution pipes.
 - 15 c. Original and final ground surface elevations.
 - 16 d. Bottom of test hole, seven day groundwater reading
17 and groundwater reading taken during the first
18 inspection (pre-construction meeting), for all
19 monitoring wells used in the design.
 - 20 e. A description and elevation of the vertical control
21 point, or benchmark.
 - 22
 - 23 3. From all standpipes (cleanout, tank and disposal field),
24 accurate swing-tie distances to at least two points readily
25 locatable under winter conditions.
26
 - 27 4. A soils log if the soils differ from conditions upon which the
28 permit was based.
29
 - 30 5. Descriptions for all departures from permit conditions and
31 related permit change orders.
32
 - 33 6. Copies of all agreements required by section 15.65.080.
34
- 35 F. A current as-built survey shall be submitted prior to the final
36 inspection report approval.
37
- 38 **Exception:** When determined to be unnecessary by the
39 department.
40
- 41 G. Interim approval to operate an on-site wastewater disposal system
42 may be granted by the department until the final inspection report is
43 approved or rejected by the department. The department may
44 suspend interim approval to operate based upon findings from the
45 final inspection report.
46
47
48
49
50

- H. Final approval to operate shall be granted by the department after corrections of deficiencies, if any, identified in the final inspection report.
- I. A wastewater disposal system is out of compliance with this chapter if any of these conditions apply:
1. The department finds corrections are needed with the final inspection report.
 2. The department finds corrections are needed with the wastewater disposal system.
 3. A homeowner operates a wastewater disposal system greater than ninety days without submitting a final inspection report.

15.65.075 - Fines.

In addition to any other remedy or penalty provided by this chapter, any person who violates any provision of this chapter or any rule, regulation, permit, waiver, variance, or order issued pursuant to this title shall be subject to a civil penalty as set forth in sections 14.60.030 and 15.05.120.

15.65.080 - Impact on the Ability to Develop Adjoining Land.

The location of an on-site wastewater system and replacement disposal site shall not have the effect of prohibiting future residential use of an adjacent lot or parcel. The department may require an agreement and necessary easements with the owner of the affected property such as the sharing of a well or other resolution of the problem. The agreement shall be recorded.

PART II CONVENTIONAL WASTEWATER DISPOSAL SYSTEMS

15.65.205 - Septic Tanks.

- A. **Tank capacity.** A septic tank shall have a minimum working capacity, comprised of the volume of the septic tank below the bottom of the tank's discharge outlet, of 1,000 gallons plus 250 gallons for each bedroom over three.
- B. **Septic tank location.**
1. **Separation distances.**
 - a. A septic tank shall not be located within five feet of a property line.

Exception: A reduced distance may be allowed if an engineer's evaluation demonstrates, to the

satisfaction of the department, that such an encroachment would not increase the risk to the public health and environment, and not impact the ability to develop and maintain the adjacent property.

- b. A septic tank shall not be located within ten feet of a water main or water service line.

Exception: For “Private” water systems, a reduced distance may be allowed if an engineer’s evaluation demonstrates, to the satisfaction of the department, that such an encroachment would not increase the risk of contamination to the associated water system. For “Community” or “Public” water systems, a reduced separation is required to be approved by ADEC.

- c. For a conventional foundation having a strip footing or a shallow foundation consisting of a concrete slab with thickened edge, a septic tank shall not be located within the foundation soil bearing prism established by a forty-five degree plane extending down and outward from the bottom outside edge of the footing or thickened slab edge, or a minimum of ten feet from these types of foundations.

Exception: A septic tank may be located no less than five feet from a foundation supporting a storage-shed, greenhouse, agricultural building, shop, garage, carport, or similar structure having a total gross floor area of 600 square feet or less and having an eave height of ten feet or less.

- d. For decks and stairs located more than thirty inches above grade, a septic tank shall not be located within five feet of an associated deck or stair support. For decks thirty inches or less above grade, a septic tank shall not be located under an associated deck support.

- e. 100 feet to surface water, measured along the path which overflowing wastewater would travel.

- f. 100 feet from a private well.

- g. The separation distances required by 18 AAC 80 from public water supply systems.

~~**h. Septic tank material. Septic tanks shall be constructed from durable, corrosion-resistant materials, including concrete fiberglass, or**~~

~~**plastic. Septic tanks constructed from steel shall be coated on both the interior and exterior with an approved polyurethane lining, equivalent, or superior material.**~~

2. **Pumping access.** A septic tank shall be installed only in an area that will be readily accessible for pumping.

3. **Driveway or parking area.** A septic tank shall not be buried under a driveway or parking area, unless the engineer provides a design, including calculations, demonstrating its structural and thermal integrity.

C. **Cover and insulation.** Tanks with two to four feet of cover shall be insulated with a minimum of two inches of approved insulation placed immediately above the top of the tank. Tanks with less than two feet of cover shall be insulated in accordance with an engineering report demonstrating protection from freezing and specifying the insulation requirements.

D. **Buoyancy forces.** A septic tank subject to buoyancy forces shall be anchored or ballasted as required to prevent flotation regardless of the liquid level in the tank.

E. **Watertight couplings.** All septic tanks shall be fitted with watertight couplings, approved by the department, at the pump-out attachments and on the inlet and outlet of the tank.

F. **Required cleanouts.** A septic tank, including the piping leading into and out of the tank, shall have all of the following:

1. **A twenty inch (minimum) diameter manway riser serving the first compartment. The riser, including the cover, shall be insulated with four-inch minimum insulation extending forty-eight inches below grade or to the tank insulation. The insulation shall be of an approved type suitable for below grade applications. Exposed insulation above grade shall be protected from UV damage. The riser lid shall be secured[lockable] to prevent unintended access.**~~[A four-inch or larger diameter standpipe with an airtight cap providing effective access to each tank compartment.]~~

2. A four inch diameter or larger standpipe with airtight cap providing effective access to each of the other compartments.

3[2]. A cleanout installed one to four feet from the building foundation. If it is not practical to install a cleanout near the foundation because of an existing building, driveway, parking area, utilities, or other structure, one set of opposing

cleanouts shall be installed on the upstream side of the tank within ten feet of the inlet.

- 4[3].** One set of opposing cleanouts (aka; double cleanouts) installed on the downstream side of the tank within ten feet of the outlet. The opposing cleanouts shall be oriented such that the cleanout closest to the tank shall be to clean the line away from the septic tank, and the cleanout furthest from the tank shall be oriented to allow cleaning toward the septic tank. The cleanouts shall be located on undisturbed soil.

Exception: Pressurized distribution pipes do not require cleanouts.

- G. Septic tank decommissioning.** Septic tank decommissioning shall be in accordance with the current adopted version of the Uniform Plumbing Code.

- H. Septic tank material. Septic tanks shall be constructed from durable, corrosion-resistant materials, including concrete, fiberglass, or plastic. Septic tanks constructed from steel shall be coated on both the interior and exterior with an approved polyurethane lining or superior material.**

15.65.210 - Subsurface Disposal Fields.

- A. Requirement for original and replacement system.** An undeveloped lot proposed for an on-site wastewater disposal system, or a developed lot proposed for an enlarged system, shall be shown to have sufficient available area for an original subsurface disposal field and one designated replacement of the same capacity. A previously developed lot, proposed for an upgraded wastewater disposal system of the same capacity as the original, need only have a site for the proposed upgrade.

- B. Disposal field location.** The location of an original or replacement subsurface disposal field shall be in accordance with the following requirements:

- 1. Horizontal separation distances.** A subsurface disposal field shall be located in compliance with the separation distances required by state code, and not less than:
 - a. 100 feet from surface water, measured along the path which overflowing wastewater would travel.
 - b. 100 feet from a private well.
 - c. Separation distances required by 18 AAC 80 from public water systems.

- d. Fifty feet up-gradient from any manmade or natural break in the natural slope of the terrain where the slope changes to twenty-five percent or greater with a drop in surface height greater than ten feet below the invert elevation of horizontal drainpipe, except as allowed under the “steep slope” provisions of this code.
- e. Twenty feet up-gradient from any manmade or natural break in the natural slope of the terrain where the slope changes to twenty-five percent or greater with a drop in surface height less than ten feet below the invert elevation of the horizontal drainpipe, except as allowed under the “steep slope” provisions of this code.
- f. Two times the depth of the gravel below the invert of the drainpipe or ten feet, whichever is greater, from any portion of a subsurface drain.
- g. Two times the depth of the gravel below the invert of the drainpipe or six feet, whichever is greater, from any existing or decommissioned subsurface disposal field.
- h. Ten feet from any property line.
- i. Ten feet from any building foundation.
- Exception:** Piles extending below the bottom of the disposal field and supports for decks and stairs.
- j. Ten feet from any water main or water service line.
- k. Five feet from any septic tank, STEP tank, lift station, or pump vault.

Exception: Refer to subsection 15.65.355H.1. for reduced horizontal separation distances for AWWTS.

2. **Vertical separation distances.** A subsurface disposal field shall not be located:

- a. Where the water table during any season of the year is within four feet of the bottom of the absorption area.
- b. Where there is bedrock or an impermeable soil layer within six feet of the bottom of the absorption area.

Exception: Refer to subsection 15.65.355H.2. for reduced vertical separation distances for AWWTS.

3. **Slope requirements.**

- a. **Maximum allowable slope for deep trench and wide trench disposal fields.** A deep trench or wide trench disposal field shall not be located on a slope greater than twenty-five percent, unless allowed otherwise under the “steep slope” provisions of this section, or the department is satisfied that the system can function effectively. The department shall base its decision upon the report of an engineer or on relevant test results, publications, engineering data, or similar materials.
- b. **Maximum allowable slope for bed disposal fields.** A bed disposal field shall not be installed where the slope of the natural ground surface is greater than ten percent.
- c. **Topographic depressions.** A subsurface disposal field shall not be constructed in a natural or man-made depression where surface water can pond.

4. **Steep slope disposal fields.** Except as modified by this sub-section, steep slope disposal fields shall comply with this chapter.

- a. **General.** A deep trench or non-mounded wide trench disposal field may be installed on a slope greater than twenty-five percent, but less than forty-six percent, if it complies with all of the following conditions:
 - i. Vertical separation distances below the disposal field shall be measured from the bottom of the drainrock at the up-gradient side of the disposal field.
 - ii. Trenches shall not exceed sixty inches in width.
 - iii. Natural vegetation within fifty feet down-gradient of the disposal field shall remain undisturbed, or the exposed slope shall be stabilized with erosion control vegetation or an approved equal prior to final operational approval.
 - iv. The distribution pipe invert shall be a minimum of thirty-six inches below the top of the natural

organic surface, measured on the downhill side of the trench.

Exception: For wide trench disposal fields, with a maximum effective depth of six inches, the distribution pipe invert may be less than thirty-six inches below the top of the natural organic layer, measured on the downhill side of the excavation, if either of the following conditions are met:

(A) Filter sand is placed below the disposal field to the deeper of the following:

(1) Thirty-six inches below the top of the native organic layer.

(2) To the top of the soil layer used for absorption.

(B) An engineer's evaluation demonstrates, to the satisfaction of the department, that the proposed distribution pipe elevation would not result in daylighting effluent down-gradient of the disposal field. The report shall include all pertinent geological, geotechnical, and hydraulic information necessary to justify the requested separation distance.

v. The disposal field shall be a minimum of 100 feet up-gradient from any slope exceeding forty-six percent.

Exception: Less than 100 feet separation may be allowed if an engineer's evaluation demonstrates, to the satisfaction of the department, that such an encroachment would not result in daylighting effluent down-gradient of the disposal field. The report shall include all pertinent geological, geotechnical, and hydraulic information necessary to justify the requested separation distance.

b. **Thirty minute-per-inch (mpi) to sixty mpi soils.**

i. The hydraulic loading rate shall be no greater than fifty percent of the required rate for disposal fields located on slopes less than twenty-five percent.

ii. Parallel disposal fields up-gradient or down-gradient from each other, that could be put into service or operation at the same time shall be separated by at least thirty feet.

iii. The disposal field shall be time dosed and the flow shall be uniformly distributed over the trench. For gravity distribution, flow shall be equally distributed to trench segments not to exceed twenty feet in length.

c. **Sixty mpi to 120 mpi soils.**

i. The hydraulic loading rate shall be no greater than fifty percent of the required rate for disposal fields located on slopes less than twenty-five percent.

ii. Parallel disposal fields up-gradient or down-gradient from each other, that could be put into service or operation at the same time shall be separated by at least fifty feet.

iii. A Category II or III AWWTS with timed dosing and pressure distribution shall be required.

5. **Driveways and parking areas.** Disposal fields, areas reserved for replacement disposal fields, and connecting pipes shall not be located under driveways, parking areas, or structures.

Exceptions:

a. Disposal fields and connecting pipes located under driveways, parking areas, or structures may be allowed if an engineer's evaluation demonstrates, to the satisfaction of the department, that the septic system will function in compliance with code requirements for freeze protection, structural stability and access to cleanout/inspection pipes.

b. Areas reserved for replacement disposal fields may serve as parking areas until such time as the field becomes operational.

C. **Soil evaluation, percolation test, and groundwater monitoring.** A soil evaluation, percolation test, and groundwater monitoring is required by this chapter.

Exception: A soil evaluation, percolation test, and groundwater monitoring, as required by the code for the subject disposal field, may not be required if an engineer can demonstrate by means of existing documentation, to the satisfaction of the department, that the subject disposal field location is likely to have soils consistent with the surrounding area.

1. **Format of soil test results.** The results of soil tests shall be submitted on a form provided by the department, or a similar document that is acceptable to the department, and shall bear the signed and dated seal of the engineer.

2. **Soil classification.** During the excavation, an evaluation and classification of the existent soils and soil strata shall be made and recorded. Classification shall be made using the Unified Soil Classification System (USCS) through visual/physical means or via sieve analysis.

3. **Strata to be tested.** Soil and percolation tests shall be conducted for each soil stratum that will be used for the absorption of wastewater in the subsurface disposal field. If more than one soil stratum is used, the absorption area shall be sized either on the basis of the least permeable stratum proposed for use, or on the area-weighted average application rate of the soil strata proposed for use.

Exception: Soil layers confirmed by sieve analysis gradation as GW, GP, SW, or SP (as defined by the USCS) shall be assigned a percolation rate of less than one minute per inch.

4. **Range of applicability of percolation tests.** A percolation test shall have a range of applicability of thirty feet. Test location(s) shall be shown on the site plan. If the test is within ten feet of the groundwater monitoring tube, the tube may be used as the test location to meet this requirement. The engineer shall obtain sufficient percolation tests to demonstrate that the required subsurface disposal area exists.

5. **Percolation test procedure.** The test shall conform to the following procedure:

a. **Preparation of the percolation test hole.** The diameter of each percolation test hole shall be approximately six inches, dug or bored into the proposed receiving soils. To expose a natural soil surface, the sides of the hole shall be scarified with a sharp pointed instrument and the loose material removed from the bottom of the test hole. Two inches of $\frac{1}{2}$ to $\frac{3}{4}$ inch washed gravel is then placed in the hole to protect the bottom from scouring action when

the water is added. A section of four inch diameter perforated PVC pipe shall be placed vertically in the test hole with $\frac{1}{2}$ to $\frac{3}{4}$ inch washed gravel placed in the annular space between the sides of the PVC pipe and the edges of the six inch test hole.

b. **Soaking period.** If the initial thirty minute reading has a drop of less than $\frac{1}{2}$ inch, pre-soaking is required as follows: The hole is carefully filled with clear water to a depth of at least six inches above the washed gravel on the bottom of the hole. This depth of water shall be maintained for at least four hours and overnight if deemed necessary by the department.

c. **Percolation test.** At the completion of the pre-soaking period (if required) any soil that sloughed into the hole during the soaking period shall be removed and the water level adjusted to six inches above the gravel (eight inches above the bottom of the hole). At no time during the test is the water level allowed to rise more than six inches above the gravel. Immediately after adjustment, the water level is measured from a fixed reference point to the nearest $\frac{1}{16}$ inch at thirty minute intervals. At least three measurements shall be taken. If in the first thirty minute period, the water seeps away completely, ten minute intervals for at least one hour may be used. After each measurement, the water level is readjusted to the six inch level. The test shall be continued until two successive water level drops do not vary by more than $\frac{1}{16}$ inch. All readings shall be recorded on the soils log. The final water level drop measurement shall be used to calculate the percolation rate.

d. **Calculation of the percolation rate.** The percolation rate is calculated for each test hole by dividing the time interval used between measurements by the magnitude of the last water level drop. This calculation results in a percolation rate in terms of minutes per inch (min/in or mpi).

6. **Groundwater monitoring.** A test to determine the depth of the groundwater shall be made no more than thirty feet from a portion of the proposed or existing subsurface disposal field. The bottom of the test hole shall be at least six feet below the bottom of the proposed or existing subsurface disposal field. If the groundwater monitoring tube is located less than five feet from the drainfield, it shall be removed at the time of drainfield construction in order to not create a conduit to the groundwater.

- a. **Groundwater monitoring procedure.** A perforated plastic pipe or similar device shall be installed and the test hole backfilled and mounded to slope away from the pipe so as to prevent entry of surface runoff. The water level in the pipe shall be measured at least seven days after installation to determine the water table depth below the surface. Groundwater monitor test pipes shall remain in place and functional until construction of the disposal field has begun.
- b. **Adjustments for seasonal groundwater variation.** When initial groundwater monitoring identifies the depth of the groundwater table at six feet or less, or when available historic data indicates the highest seasonal groundwater level may be within four feet of the bottom of the proposed subsurface disposal system, the department may require monitoring of the water levels at least once during one of two high ground water periods of the year. Designated high ground water periods are May and October unless otherwise determined by the department. The groundwater elevation shall be based on seven-day ground water monitoring test results taken within thirty feet of the proposed disposal field, adjusted up to account for seasonal fluctuations using one of the following:
- i. Documented seasonal fluctuations within 200 feet of the proposed disposal field.
 - ii. For locations where the seasonal fluctuation is not documented, seven day ground water monitoring shall be adjusted to seasonal high in accordance with Table 1:

Table 1. Groundwater Adjustment Factors

Month groundwater elevation monitored	Measured groundwater elevation required to be adjusted up by (ft)
January	2
February	2
March	2
April	1
May	0
June	1
July	2
August	2
September	1
October	0

November	1
December	2

D. **Disposal field design.**

1. **Receiving soil characteristics:**

- a. **Unsaturated receiving soil.** A subsurface disposal field shall be installed on or in a native unsaturated accepting soil stratum that is a minimum of two feet thick.

Exception: Disposal fields designed using ERS in accordance with subsection 15.65.210D.3.c.

- b. **Minimum percolation rate.** A subsurface disposal field for a conventional absorption system shall not be installed unless a percolation test of the native soil or ERS demonstrates that the percolation rate is less than, or equal to, sixty minutes per inch.

- c. **Maximum percolation rate.** A subsurface disposal field shall not be installed in accepting soil stratum that has a soil classification of GW or GP, as defined by the USCS, and has a percolation rate faster than one minute per inch without installing a filtration layer in accordance with subsection 15.65.210D.3.b.

Exception: On a case-by-case basis the MOA will waive the need for a sand filter if there is adequate information in nearby drilling logs to establish that the geological profile in the area is such that there are other protective soil layers, other than those identified in the test hole, which will protect the underlying aquifer/s. Waiving of the sand filter requirement will be at the sole discretion of the department.

2. **Disposal field design criteria.** Disposal fields shall be designed to accept 150 gallons of wastewater per bedroom per day. The minimum effective absorption area of a disposal field shall be calculated using the wastewater application rate corresponding to the percolation rate provided in chapter 15.65 Table 2.

Exception: At the sole discretion of the director, the design flow requirement can be modified on a case-by-case basis if adequate information is provided by the engineer to document that the home is equipped with water saving devices such as composting toilets, low flush toilets, flow restricted faucets and/or shower head, "green" appliances

(dishwater and/or washing machines), or water recycling (i.e. shower water used for toilets or in-house horticulture).

a. **Deep trenches and seepage pits.** The effective absorption area is the area of the sidewalls below the invert of the horizontal drainpipe or seepage pit inlet.

b. **Wide trenches.** The effective absorption area is the bottom area of the disposal field plus the area of sidewalls that is more than six inches below the invert of the horizontal drainpipe.

The required length for wide trench disposal fields with more than six inches of gravel below the drainpipe invert shall be calculated by multiplying the length required for a disposal field with only six inches of gravel by the appropriate factor derived from the following formula. W is the width of the drainfield and D is the depth of the gravel in feet below the drainpipe.

$$\text{Factor} = (W+2) / (W+1+2D)$$

c. **Beds.** The effective absorption area is the bottom area of the disposal field.

The width of a bed shall not exceed fifteen feet without approval from the department.

The perforated drainpipes used in a bed shall be no more than six feet apart. The distance between the outermost drainpipe and the edge of the bed shall be no more than three feet.

d. **Mounds.** In designing a mounded bed or mounded wide trench type disposal system, sufficient filter sand as specified in subsection 15.65.210D.3.b. shall be placed on top of the accepting stratum of native soil or ERS to create a combined total separation from the water table, bedrock, or impermeable soil which equals or exceeds the vertical separation distances established in this ordinance.

Table 2. Wastewater Application Rates for Conventional Subsurface Disposal Fields		
Percolation Rate (minutes/inch)	Pit , Deep Trench or Wide Trench (gpd/square foot)	Bed (gpd/square foot)

0 - 1 USCS ¹ Sand	1.2	0.8
0 - 1 USCS ¹ Gravel	Not Suitable ²	Not Suitable ²
1 - 5	1.2	0.8
6 - 15	0.8	0.5
16 - 30	0.6	0.4
31 - 60	0.45 ⁴	0.3
Greater than 60	Not suitable ³	Not suitable ³
Filter layer	1.0	0.7

Footnotes:

1. USCS Soil Classifications shall be determined by a sieve analysis.
2. Suitable with the installation of a two foot deep sand filter layer constructed in accordance with subsection 15.65.210D.3.b., or documentation that the receiving soil is not USCS classified as a GW or GP soil; or as otherwise waived within this ordinance.
3. Suitable for Category II and III advanced wastewater treatment systems constructed in accordance with chapter 15.65 Part III.
4. A seepage pit shall not be used in soils with a percolation rate slower than thirty minutes per inch.

3. Specifications for imported granular material:

- a. **Drainrock.** Coarse, washed aggregate placed in a disposal field excavation to provide retention and distribution of treated effluent before it passes into native soil or ERS. The washed aggregate shall measure 0.5 to 2.0 inches in diameter with no more than one percent passing the number 200 sieve screen (0.074 millimeter diameter openings).
- b. **Filter sand.** Filter sand used in wastewater disposal fields shall meet the gradation requirements in Table 3.

Table 3. Filter Sand Gradation

<u>Sieve Designation</u>	<u>% Passing by Weight</u>
3/8"	100
#4	95 – 100
#100	0 – 4

1
2
3
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Effective grain size (D_{10}) ¹ : #18 - #60 sieve	
Uniformity Coefficient (D_{60}/D_{10}) ² : less than 4	
<u>Footnotes:</u>	
1.	D_{10} - The maximum diameter of the smallest ten percent by weight of filter material particles
2.	D_{60} - The maximum diameter of the smallest sixty percent by weight of the filter material particles.

- c. **Engineered receiving soil (ERS).** ERS may be used to convey disposal field effluent vertically or horizontally. ERS may be used to satisfy separation distance requirements from a disposal field to groundwater, impermeable soil, and bedrock. ERS may be used to convey disposal field effluent vertically to a lower soil stratum with better percolation characteristics. ERS shall meet all of the following requirements:
- i. A native accepting soil stratum shall be a minimum of two feet thick and be present on all sides of the ERS. If deemed necessary by the department, two supplemental test holes shall be excavated at twenty feet and forty feet down-gradient from the proposed ERS to confirm continuity of the accepting stratum.
 - ii. **Vertical conveyance.** Vertical conveyance may be used when the bottom of the ERS is used to convey effluent.
 - iii. **Horizontal conveyance.** Horizontal conveyance shall use the sides of the ERS to convey effluent to an unsaturated accepting soil stratum (which includes organic soils). The top one foot of the absorption area, measured from original grade, shall not be used to distribute effluent.
 - iv. Fill, including ERS, shall not be installed on top of organic soils.
 - v. ERS shall be MASS Type II classified material, or Type II-A classified material, or filter sand material in accordance with subsection 15.65.210D.3.b. or other material approved by the department.

- vi. A two foot thick layer of filter sand in accordance with subsection 15.65.210D.3.b. shall be placed directly beneath disposal fields and above ERS.
- vii. The absorption area used to convey effluent between the ERS and accepting soil stratum shall be based on in-situ percolation test data (for unsaturated soils), or laboratory analysis of a sample demonstrating its classification to be USCS GP, GW, SP or SW (for saturated soils).
- viii. ERS shall be installed in twelve inch maximum lifts. Each lift shall be compacted to create a stable base for the absorption system.
- ix. ERS surfaces above the natural grade require all of the following:
 - (A) Side slopes no steeper than a ratio of three horizontal to one vertical, unless approved otherwise by this department.
 - (B) A minimum of four inches of topsoil cover.
 - (C) To be seeded to produce vegetation.
- x. Wastewater disposal systems utilizing ERS shall be Category III nitrate reducing systems.
- xi. All ERS designs shall include an engineer's statement and supporting documentation regarding probable impacts to drinking water aquifers serving the subject and adjacent properties.

E. **Disposal field construction requirements.** Layout and construction of subsurface disposal fields shall be accomplished in accordance with the following standards:

1. **Disposal field layout:**

- a. **Maximum segment length.** Single segments of subsurface disposal fields shall not exceed 100 feet in length.
- b. **Disposal field orientation.** The long axis of a disposal field shall follow the contours of the original ground.

- c. **Separation between fields.** The horizontal separation distance between the closest edges of working or decommissioned subsurface disposal fields, or segments of subsurface disposal fields, shall be at least twice the depth of the drainrock below the level of the drainpipe, but not less than six feet.

2. **Excavation requirements:**

- a. **Levelness.** The bottom of a trench shall be level within four inches. The bottom of a wide trench or bed disposal field shall be level within two inches before placement of drainrock.
- b. **Material used for leveling.** Imported material used for the purpose of leveling the bottom of a disposal field shall be filter sand meeting the minimum requirements of chapter 15.65 Table 3.
- c. **Requirement to scarify any smeared soil.** After excavation has exposed the designated infiltrative surface, any native soil that is smeared shall be scarified to improve its porosity before placement of drainrock.

3. **Pipe.** Pipe used in gravity disposal systems shall be four inches in diameter.

4. **Pipe bedding.** Perforated distribution pipe used in a subsurface disposal field shall be laid level and bedded with drainrock extending a minimum of two inches above the top of the distribution pipe, and level across the entire width of the drainfield.

5. **Cleanouts.** Non-pressurized subsurface disposal field piping shall have a four inch diameter cleanout connected to both ends of each perforated segment. Cleanouts within twenty feet and in line with the double cleanout downstream of the septic tank may be omitted.

6. **Monitor tubes.** At least one four inch diameter monitoring tube shall be installed in each separate disposal field segment to allow measurement of the fluid level in the disposal field. Monitor tubes shall not be connected to the distribution pipe network. The portion of a monitor tube extending down from the level of the horizontal distribution pipes to the bottom of the drainrock shall be perforated. The portion of the monitor tube above the horizontal distribution pipes shall be non-perforated. Monitor tubes shall be located at all angle points of disposal fields to mark the location of the absorption system. Pressurized trench

disposal fields that do not have cleanout pipes shall have a monitor tube within one foot of each end of individual trench segments. Pressurized bed disposal fields that do not have cleanout pipes shall have a monitoring tube within one foot of each corner of the bed.

7. **Silt barrier.** An approved permeable geotextile silt barrier shall be installed covering the entire top surface of the drainrock prior to backfill.
8. **Disposal field cover.** The disposal field cover shall be a minimum of two feet deep, over the top of the drainrock. If the disposal field cover is less than three feet, the disposal field shall be insulated with two inches of approved rigid board insulation. Minimum soil cover over the insulation shall be one foot.
9. **Finish grade mounding and side slopes.** The finished grade over a subsurface disposal field shall be mounded a minimum of six inches above adjacent ground to prevent the formation of a depression after the backfill has settled. The side slope of any backfill mounded above grade level shall not be steeper than thirty-three percent, unless the engineer provides documentation that mitigation was taken to ensure slope stability and protection from future erosion.
10. **Topsoil and seeding.** The upper four inches of a mounded disposal field shall consist of topsoil and the mound shall be seeded as typically performed within the industry to ensure vegetation.
11. **Standpipe height.** Upon completion of construction all cleanouts and monitor tubes shall be above final grade, water tight, and located by swing-tie measurements to allow year-round location and access.
12. **Construction procedures during freezing weather.** From October 15 to April 15, subsurface construction during freezing weather shall be either of the following:
 - a. Opened and closed on the same day.
 - b. Covered, sealed and heated to prevent freezing.

15.65.215 - Holding Tanks.

- A. Holding tanks are not allowed.

Exception: A holding tank may be used under any of the following conditions:

1. Public sewer will be available within one year and the use of the holding tank is terminated within one year of the date public sewer is available in accordance with section 15.65.040.
2. An engineer certifies it is necessary as a remedial measure where an existing on-site wastewater disposal system malfunctions and cannot be repaired, rejuvenated, or replaced to bring the system in compliance with this chapter.
3. It is used as a temporary, seasonal measure to allow for repairs of the existing system.

B. **Capacity.** The capacity of a holding tank shall not be less than 2,000 gallons and shall be increased by 500 gallons for each bedroom over three.

C. **Manufacturing requirements.** A holding tank shall be manufactured in accordance with a design approved by the department.

D. **Holding tank location.**

1. **Separation distances:** Separation requirements shall be as required for septic tanks; refer to subsection 15.65.205B.1.
2. **Pumping access.** A holding tank shall be installed only in an area that will continue to be readily accessible to a pump truck.
3. **Driveway or parking area.** A holding tank shall not be buried under a driveway or parking area, unless the engineer provides a design, including calculations, demonstrating its structural and thermal integrity.

E. **Cover requirements.** A holding tank shall be buried a minimum of two feet. If the tank is buried at a depth of less than four feet, the tank shall be insulated with a minimum of two inches of insulation placed immediately above the top of the tank.

F. **Buoyancy forces.** A holding tank subject to buoyancy forces shall be anchored or ballasted as required to prevent flotation regardless of the liquid level in the tank.

G. **Required cleanouts.** A holding tank, including the conveyance piping leading to the tank, shall have all of the following:

1. A six inch diameter tank standpipe with an airtight cap to provide pumping access. The standpipe shall extend at least twelve inches above the surface of the ground.

2. A cleanout installed one to four feet from the building foundation. If it is not practical to install a cleanout near the foundation because of an existing building, driveway, parking area, utilities, or other structure, one set of opposing cleanouts shall be installed on the upstream side of the tank within ten feet of the inlet.

H. **Manhole.** A holding tank shall have a watertight manhole to provide access to the interior of the tank. The manhole shall be at least twenty inches in diameter.

I. **Alarm.** A holding tank shall be equipped with an approved high water level alarm located inside the dwelling or attached garage which registers both visually and audibly. The alarm control shall be positioned to allow at least 150 gallons per bedroom of additional storage but not less than 300 gallons after the alarm has been activated.

Exception: The interior alarm is not required if the holding tank is equipped with a remote monitoring system that will notify the owner or a maintenance provider of an alarm condition.

J. **Maintenance and operations.** The department may require pumping contracts, operating plans, financial arrangements and other reasonable conditions to ensure that the holding tank is maintained and operated in accordance with this code.

K. **Holding tank decommissioning.** Decommissioning shall be in accordance with the current adopted version of the Uniform Plumbing Code.

15.65.220 - STEP Tanks, Lift Stations, and Pump Vaults.

A. **System design.** When a STEP tank, lift station, or pump vault is required, the system shall be designed by an engineer and have the approval of the department. A design bearing the signed and dated seal of the engineer shall be submitted to the department for approval before a permit will be issued. The design shall meet the standards contained in this chapter.

B. **Manufacturing requirements.** A STEP tank, lift station, or pump vault shall be manufactured in accordance with a design approved by the department.

C. **Tank capacity.** A STEP tank shall have a minimum of 250 gallons more capacity than would be required for a standard septic tank.

D. **Separation distances.** Separation requirements shall be as required for septic tanks; refer to subsection 15.65.205B.1.

- 1 E. **Pumping access.** A STEP tank, lift station, or pump vault shall be
2 installed in an area readily accessible for pumping.
3
- 4 F. **Cover and insulation.** A STEP tank with two to four feet of cover
5 shall be insulated with a minimum of two inches of approved
6 insulation placed immediately above the top of the tank. A STEP
7 tank with less than two feet of cover shall be insulated in
8 accordance with an engineering report demonstrating protection
9 from freezing and specifying the insulation requirements. A lift
10 station or pump vault shall be insulated and protected from
11 freezing.
12
- 13 G. **Alarm.** A STEP tank, lift station, or pump vault shall have an
14 approved high water alarm located inside the dwelling or attached
15 garage which registers both visually and audibly. The alarm
16 system shall be on a separate electrical circuit from the pump
17 controls. There shall be at least 150 gallons of storage capacity
18 remaining when the alarm activates.
19
- 20 **Exception:** The interior alarm is not required if the control panel is
21 equipped with a remote monitoring system that will notify the owner
22 or a maintenance provider of an alarm condition.
23
- 24 H. **Buoyancy forces.** STEP tanks, lift stations, and pump vaults
25 subject to buoyancy forces shall be anchored or ballasted as
26 required to prevent flotation regardless of the liquid level in the tank
27 or vault.
28
- 29 I. **Driveway or parking area.** A STEP tank, lift station, or pump vault
30 shall not be buried under a driveway or parking area, unless the
31 engineer provides a design, including calculations, demonstrating
32 its structural and thermal integrity.
33
- 34 J. **STEP tank, lift station, and pump vault decommissioning.**
35 Decommissioning shall be in accordance with the current adopted
36 version of the Uniform Plumbing Code, similar to requirements for
37 septic tanks.
38
- 39 K. **AWWT Systems.** Refer to section 15.65.355 for additional
40 requirements for STEP tanks, lift stations, or pump vaults
41 associated with AWWTS's.
42

43 15.65.225 - Earth Privies.

44

- 45 A. An earth privy shall not be used where a potable water supply or
46 water storage system is available.
47
- 48 B. Earth privies shall be constructed in a manner approved by the
49 department.
50
- 51 C. An earth privy shall be located a minimum distance of:

1. Thirty feet from any property line.
 2. Twenty feet from any building or structure foundation.
 3. Ten feet from any abandoned privy or subsurface disposal field.
 4. Fifty feet uphill from any slope of twenty-five percent or greater.
 5. 100 feet uphill or thirty feet downhill from a curtain drain. Any lesser separation distance shall be justified in an engineer's report based on soils permeability, hydraulic gradient and effluent quality.
 6. 100 feet from any surface water, measured along the path which overflowing wastewater would travel.
 7. 100 feet from a private well.
 8. Separation distances required by 18 AAC 80 from public water systems.
- D. An earth privy shall not be constructed, installed, or operated if any of the following apply:
1. Where the groundwater during any season of the year will be within four feet of the bottom of the privy.
 2. Where there is bedrock or any impermeable barrier within six feet of the bottom of the privy.
 3. Where there is inadequate surface drainage away from the privy.
- E. Abandoned earth privies shall be backfilled with mineral soil and mounded to twelve inches above the original ground level.

15.65.230 - Vault Privies.

- A. A vault privy shall not be used where a potable water supply or water storage system is available.
- B. The vault shall be water tight and constructed in a manner approved by the department.
- C. The vault shall be maintained in a sanitary condition, and the vault contents shall be removed and disposed of in a manner approved by the department.

- 1 D. A vault privy shall be located a minimum distance of:
- 2
- 3 1. Ten feet from any property line or building foundation.
- 4
- 5 2. Ten feet from any water main or service line.
- 6
- 7 3. 100 feet from surface water, measured along the path which
- 8 overflowing wastewater would travel.
- 9
- 10 4. 100 feet from a private well.
- 11
- 12 5. Separation distances required by 18 AAC 80 from public
- 13 water systems.
- 14
- 15 E. A vault privy subject to buoyancy forces shall be anchored or
- 16 ballasted as required to prevent flotation regardless of the liquid
- 17 level in the vault.
- 18

19 **15.65.235 - Maintenance Requirements for On-site Disposal Systems.**

20

- 21 A. The property owner shall be responsible for maintenance of the on-
- 22 site wastewater system so as to comply with the intent of this
- 23 chapter and for the abatement of any public health or safety hazard
- 24 arising from its operation or malfunction.
- 25
- 26 B. Septic tanks, lift stations, and pump vaults shall be maintained to
- 27 meet or exceed all of the following requirements:
- 28
- 29 1. Septic tanks and STEP tanks shall be inspected to
- 30 determine the need for pumping and cleaning at least once
- 31 each year unless it has been pumped within the preceding
- 32 two year time period.
- 33
- 34 2. Inspection shall be by an engineer or by a person certified to
- 35 perform that work under subsection 15.65.025B.
- 36
- 37 3. The septic tank shall be pumped and cleaned within seven
- 38 days of the inspection if two inches or more of floating scum,
- 39 or twenty-four inches or more of sludge, is present in the first
- 40 compartment of the septic tank.
- 41
- 42 4. The pumping systems for STEP tanks, lift stations, and
- 43 pump vaults shall be inspected and serviced at least once
- 44 every two years. Service shall, as a minimum, include all of
- 45 the following:
- 46
- 47 a. Remove and clean the pump basket and effluent filter.
- 48
- 49 b. Clean all float controls and other components so as to
- 50 ensure they are free of grease and other debris that
- 51 could impair system performance.

- c. Ensure all control floats are in compliance with the manufacturer's MOA approved settings.
- d. Ensure the alarm system is functional.
- e. Ensure the alarm is both audible and visual inside the residence.
- f. Inspect the manhole riser to tank connection and all manhole riser pipe penetrations for groundwater intrusion.
- g. Ensure the outlet (pressure) piping weep hole (if required) is functional so as to protect the piping from freezing.
- h. Ensure the manhole lid is functional, insulated, and properly secured.
- i. Perform all other inspections and maintenance recommended by the manufacturer.

PART III ADVANCED WASTEWATER TREATMENT SYSTEMS (AWWTS)

15.65.305 - Regulation of AWWTS.

- A. The department may reject, revoke, suspend or otherwise limit or restrict a license, certificate or permit granted under Part III of this chapter.
- B. The department may require specific types of AWWTS in areas it deems necessary for the protection of surface water, groundwater, and the public health.

15.65.310 - AWWTS Selection and Acceptance Procedures.

- A. AWWTS's shall be regulated by their performance. A Category I system is defined in section 15.65.335. A Category II system is defined in section 15.65.340. A Category III is defined in section 15.65.345.
- B. The department, with the advice of the On-site Water and Wastewater Technical Review Board, shall determine:
 1. **Selection of proposed systems.** The designs and/or types of systems selected for testing under this program.
 2. **Number of systems to be tested.** The number of systems selected for testing during any one annual period. This number may vary depending on staffing levels within the

department, complexities of systems, numbers of individual systems tested, and other variables.

3. **Number of systems of each design and/or type to be tested.** Testing shall occur on a predetermined number of systems of each design and/or type proposed and shall range from two to five individual systems. This number may be based on the complexity of the system, the number and locations of any other systems currently operating, the projected reliability of the system, and other considerations.

4. **Acceptance procedures.** A system passing all testing requirements for Category I, II or III, and functioning adequately for the entire testing period, shall be accepted for standard permitting and installation within the municipality.

C. A system selected for the testing program that does not meet the requirements for a Category II or Category III system, may be accepted as an AWWTS for installation as a Category I system, if it meets those requirements. Maintenance and repair requirements shall be identical to those specified when the system was accepted for testing under this chapter.

D. The sampling period to determine acceptance or rejection and regulatory category shall occur over a period of twelve consecutive months.

E. Design changes to approved AWWTS must be approved by the department.

15.65.315 - Appeal of Rejection or Category Classification.

A. Following the testing period, the system representative may request a hearing on the rejection or category classification of the AWWTS. The hearing shall be conducted pursuant to chapter 3.60. Justification for the rejection or classification shall be determined by the department and shall be in writing.

B. Any decision to reject, revoke, suspend or otherwise limit or restrict a license, certificate or permit granted under Part III of this chapter shall be effective immediately.

15.65.320 - General Requirements for Sampling Procedures.

A. Department approved, independent third-party individuals shall conduct all sampling and testing in accordance with approved procedures.

B. A proposed sampling schedule and sampling procedures shall be submitted to the department for approval prior to the start of the sampling period. Deviations from the approved schedule and

procedures require approval from the department. Any required system start-up time shall be included in this schedule.

C. The department reserves the right to collect random samples at its discretion.

D. All samples shall be tested by a laboratory certified by the State of Alaska for each parameter tested. A copy of the results of all samples shall be mailed directly to the department by the laboratory.

15.65.325 - Specific Requirements for Sampling Procedures.

A. All systems selected for testing as an AWWTS shall undergo a one-year minimum sampling program unless otherwise approved by the department. The sampling regimen shall meet the following requirements:

1. **CBOD₅ and TSS.** The arithmetic mean of the CBOD₅ and TSS values for the effluent samples collected (whether grab or composite technique is used) during a sampling period shall meet requirements in sections 15.65.335, 15.65.340, and 15.65.345.

a. *Year long sampling:* A minimum of twelve consecutive monthly samples shall be collected approximately thirty days apart. One sample result from subsection 15.65.325A.1.b., Month Long Sampling, may be used as one of the twelve monthly samples required by this paragraph.

b. *Month long sampling:* A minimum of four consecutive weekly samples shall be collected approximately seven days apart. One sample result from subsection 15.65.325A.1.c., Week Long Sampling, may be used as one of the four monthly samples required by this paragraph.

c. *Week long sampling:* A minimum of seven daily samples shall be collected on a separate day of seven consecutive days.

2. **Fecal coliform.** The geometric mean of the fecal coliform values collected during a sampling period shall meet the requirements in sections 15.65.335, 15.65.340, and 15.65.345.

a. *Year long sampling:* A minimum of twelve consecutive monthly samples shall be collected approximately thirty days apart. One sample result from subsection 15.65.325A.2.b., Month Long Sampling, may be used

as one of the twelve monthly samples required by this paragraph.

- b. *Month long sampling:* A minimum of four consecutive weekly samples shall be collected approximately seven days apart. One sample result from subsection 15.65.325A.2.c., Week Long Sampling, may be used as one of the four monthly samples required by this paragraph.
- c. *Week long sampling:* A minimum of seven daily samples shall be collected on a separate day of seven consecutive days.

15.65.330 - Wastewater Characteristics for AWWTS Testing.

- A. Minimum influent wastewater characteristics from the residence should meet the following characteristics, unless otherwise approved by the department.
 - 1. CBOD₅ . . . 155-286 mg/l.
 - 2. TSS . . . 155-330 mg/l.
 - 3. TN . . . 26-75 mg/l.
 - 4. TP . . . 6-12 mg/l.
 - 5. Fecal Coliform . . . 10⁶-10⁸ col./100 ml.

15.65.335 - Category I Wastewater Treatment Standards.

- A. A Category I system using advanced treatment technology may be comprised of a tank or tanks, filters, air pumps (or other devices).
- B. An advanced treatment system which undergoes the sampling regimen and fails to meet the requirements of Category II, may be installed as a Category I system. Maintenance and repair requirements shall be identical to those specified when the system was accepted for testing under this chapter.

15.65.340 - Category II Wastewater Treatment Standards.

A Category II system using advanced treatment technology, comprised of a tank or tanks, filters, air pumps (or other devices), shall produce an effluent, prior to discharging to the disposal field, with the following maximum contaminant levels (Table 4):

Table 4.	Category II Wastewater Treatment Maximum Contaminant Levels
----------	---

Contaminant	Year Long Sampling	Month Long Sampling	Week Long Sampling
CBOD ₅ and TSS (mg/l)	30	40	45
Fecal Coliform (col/100 ml)	50,000	75,000	100,000

15.65.345 - Category III Wastewater Treatment Standards.

A Category III system using advanced treatment technology, comprised of a tank or tanks, filters, air pumps (or other devices), shall produce an effluent, prior to discharging to the disposal field, with the following maximum contaminant levels (Table 5):

Table 5. Category III Wastewater Treatment Maximum Contaminant Levels			
Contaminant	Year Long Sampling	Month Long Sampling	Week Long Sampling
CBOD ₅ and TSS (mg/l)	10	20	30
Fecal Coliform (col/100 ml)	10,000	20,000	30,000

15.65.350 - Nitrogen Reducing Systems.

A. All Category I, II and III systems may be additionally classified as nitrogen reducing systems if their effluent meets the following total nitrogen characteristics:

1. *Year long sampling:* The arithmetic mean of the TN values for the effluent samples collected (whether grab or composite technique is used) during an annual period shall not exceed twenty mg/l. A minimum of twelve monthly samples shall be collected approximately thirty days apart.
2. *Month long sampling:* The arithmetic mean of the TN values for a minimum of four effluent samples, each collected (whether grab or composite technique is used) on a separate day approximately seven days apart during a period of thirty consecutive days shall not exceed thirty mg/l.
3. *Week long sampling:* The arithmetic mean of the TN values for a minimum of seven effluent samples, each collected (whether grab or composite technique is used) on a separate day of seven consecutive days shall not exceed forty mg/l.

- 1
- 2 B. The department shall have the authority to require nitrogen
- 3 reducing systems in areas it deems necessary for the protection of
- 4 groundwater resources and public health.
- 5

6 **15.65.355 - General Design Requirements.**

7

- 8 A. **Components.** Any components of wastewater treatment systems
- 9 being evaluated as AWWTS and those systems approved as
- 10 AWWTS shall meet all requirements set forth in this chapter, the
- 11 Uniform Plumbing Code (latest adopted revision), and the
- 12 Standards and Specifications for Component Parts and Materials
- 13 used in Construction of On-site Wastewater Disposal Systems,
- 14 issued by the department.
- 15

- 16 B. **Alarms or warning devices.** Any system component utilizing a
- 17 mechanical device shall be provided with an automatic visual or
- 18 audible means of notifying the user of the system of a mechanical
- 19 device failure.
- 20

- 21 1. Any alarm that is electrically powered is to be on a separate
- 22 circuit from the circuit supplying power to the mechanical
- 23 device.
- 24
- 25 2. An alarm indicating the failure of a pump shall remain
- 26 audible or visible until manually turned off.
- 27
- 28 3. Where duplex-pumping equipment is employed to provide
- 29 continuous component operation in the event that one pump
- 30 fails, the pumps shall be installed in such a manner so as to
- 31 provide the continuous operation automatically.
- 32
- 33 4. The control panel and electrical panel shall be outside in a
- 34 location visible and readily available to the system
- 35 maintainer.
- 36

- 37 C. **Remote monitoring.** Category II and III systems that rely on
- 38 mechanical devices and processes shall be monitored remotely by
- 39 the equipment provider or other approved entity.
- 40

41 **Exception:** AWWTS's already approved without remote

42 monitoring.

43

- 44 D. **Accessibility.** The design of a system shall include provisions to
- 45 provide access to all components that require maintenance and
- 46 repair or observation.
- 47

- 48 E. **Buoyancy forces.** An AWWTS holding or treatment tank subject
- 49 to buoyancy forces shall be anchored or ballasted as required to
- 50 prevent flotation regardless of the liquid level in the tank.
- 51

- F. **Frost protection.** All system components shall be designed for protection from freezing and excessive heat loss that could detrimentally affect the system performance.
- G. **Disposal field sizing.** Wastewater disposal fields shall be sized according to the requirements of the following table:

Table 6. AWWTS Effluent Application Rates				
Soil Percolation Rate (minutes/inch)	AWWTS Category Application Rate (gallons/day/square foot)			
	I - Trench	I - Bed	II	III
1 - 5	1.2	0.8	4	6
6 - 15	0.8	0.5	3	5
16 - 30	0.6	0.4	2	4
31 - 60	0.45	0.3	1	2
61 - 90	N/A	N/A	0.5	1.0
90 - 120	N/A	N/A	0.3	0.5

1. The above application rates for Category II and Category III systems are valid for systems using a discharge pump or timed dosage only. Category II and Category III systems using gravity feed without timed dosage shall be allowed fifty percent of the above application rates.
 2. All categories must use a sand filter layer in gravel soils that have a percolation rate of less than one minute per inch.
- H. **Drainfield.** A drainfield served by an AWWTS shall be installed in accordance with section 15.65.210.
- Exception:** The following reduced separation distances are allowed for a drainfield served by a Category II or Category III AWWTS equipped with a remote monitoring system.
1. **Reduced horizontal separation distances (from closest edge of drainfield):**
 - a. Fifty feet from surface water.
 - b. Fifty feet from a private well. If an existing private well has nitrates greater than five mg/l, the department may require a separation distance up to 100 feet.
 - c. Thirty-five feet up-gradient from any manmade or natural break in the natural slope of the terrain where

the slope changes to twenty-five percent or greater with a drop in surface height greater than ten feet below the invert elevation of horizontal drainpipe.

d. Five feet from any property line.

2. **Reduced vertical separation distances.** A subsurface disposal system utilizing pressure distribution or uniform gravity distribution segments not exceeding twenty feet in length shall not be located:

a. Where the water table during any season of the year is closer than two feet from the bottom of the absorption area.

b. Where bedrock or any other impermeable barrier occurs within four feet of the bottom of the absorption area. For nitrogen reducing systems, the minimum required vertical separation distance is three feet.

I. **AWWTS components.** Components serving AWWTS's shall comply with the required minimum horizontal separation distances in subsection 15.65.205B.1.

Exception: The following reduced separation distances are allowed for components serving a Category II or Category III AWWTS equipped with a remote monitoring system.

1. Fifty feet from surface water.

2. Fifty feet to a private water well.

15.65.360 - Maintenance and Repair.

A. **General.** Due to the potential for degrading surface water and ground water quality or jeopardizing the public health, or both, routine maintenance and repair of AWWTS and a remote monitoring system is required.

B. **AWWTS Maintenance and Repair Agreement.** Pursuant to section 15.65.365, and in order to assure maintenance and repair is performed in a timely manner, an AWWTS Maintenance and Repair Agreement between the system owner and the municipality is required. A system designated as an advanced treatment system, whether Category I, II, or III shall meet this requirement.

C. **Existing systems.** All existing advanced treatment systems installed prior to the passage of this ordinance shall be required to meet all maintenance and repair requirements required by this section. Existing maintenance and repair agreements on advanced treatment systems shall be replaced with an AWWTS Maintenance

and Repair Agreement between the system owner and the municipality.

D. **Qualifications to perform maintenance and repair.** Individuals who perform maintenance and repair on advanced treatment systems shall be certified by the system manufacturer or manufacturer's representative as adequately trained and familiar with the treatment processes and maintenance and repair procedures for these specific systems.

E. **Certification approval.** The department shall have the right to accept or reject a manufacturer's certification process for maintenance and repair personnel referenced in subsection 15.65.360D. This certification process shall be approved by the municipality prior to the acceptance of a specific system.

F. **Revocation of AWWTS approval.** The department may revoke a manufacturer's AWWTS approval if the manufacturer/manufacturer's representative fails to adequately maintain a sufficient certification process for maintenance and repair personnel pursuant to subsections 15.65.360D. and E.

G. **Certificates.** The manufacturer shall issue a certificate to each individual trained to maintain AWWTS. This certificate shall be issued only after the individual has completed approved training by the manufacturer (or approved designee) for each type of advanced treatment system to be maintained. The certificate shall specifically list each type of AWWTS for which the holder has been trained and certified. A copy of this certificate shall be provided to the municipality. The department shall maintain a listing of all approved maintenance and repair personnel.

15.65.365 - Maintenance and Repair, and Service Agreements.

A. **System installation.** The installation of an AWWTS requires a Maintenance and Repair Agreement between the municipality and property owner in accordance with this section.

B. **Transfer of property.** The transfer of a property containing an AWWTS requires a Maintenance and Repair Agreement between the municipality and transferee (buyer) in accordance with this section.

C. **Service agreement required.** In addition to the Maintenance and Repair Agreement, the property owner shall enter into a third party service agreement with an AWWTS service provider approved by the manufacturer/manufacturer's representative. A service agreement shall be maintained for the life of the system.

D. **Contents.** The AWWTS Maintenance and Repair Agreement shall include, but need not be limited to, all of the following provisions:

1. A commitment by the owner to maintain the AWWTS in a satisfactory condition capable of producing treated effluent in accordance with chapter 15.65.
2. Acknowledgement by the owner that fines for failing to maintain an AWWTS may be assessed in accordance with chapter 14.60 for improper discharge.
3. The consent of the owner that only maintenance personnel from an approved AWWTS service provider will inspect, maintain and repair the system.
4. The consent of the owner allowing the department reasonable access to test and inspect the system with twenty-four hours written notice.
5. Acknowledgement by the owner that a new COSA is required by section 15.65.060 prior to any sale or transfer of title of the property.
6. A commitment by the owner to maintain remote monitoring.

- E. The maintenance provider shall keep a copy of maintenance records for a period of no less than the past three years and they must provide a copy of the subject records to the MOA if requested.

PART IV SUBDIVISION STANDARDS FOR LOTS SERVED BY ON-SITE DISPOSAL SYSTEMS

15.65.405 - Subdivision Submittal Requirements.

- A. The subdivider shall submit plans, data, tests and engineering reports required to substantiate the capability of the proposed subdivision to adequately dispose of wastewater. Where individual on-site wastewater disposal is proposed, the subdivision wastewater disposal plan shall contain, but need not be limited to, all of the following information, prepared under the direction of an engineer:
1. Soil, percolation, and groundwater table observations and test results conducted in accordance with standards outlined in this chapter.
 2. A site plan and report addressing the following:
 - a. The location of existing private and public water systems, groundwater wells, on-site wastewater disposal systems, replacement subsurface disposal field sites, public sewage systems, storm sewers, bodies of water, drainage features, curtain drains, and

wetlands both in the proposed subdivision and outside the proposed subdivision if within 250 feet of the proposed wells and wastewater disposal system reserve areas.

b. The location of a possible well and wastewater reserve area for each lot in the proposed subdivision and within 250 feet of the proposed subdivision. The plans shall show the required separation distances of each well.

c. Topographic contours. Areas exceeding a twenty-five percent slope shall be delineated.

d. Potable water source separation distances.

e. Known groundwater nitrate levels in the general vicinity (within 250 feet) of the subdivision.

3. The department may require a nitrate impact analysis if nitrate levels are found to exceed five mg/l in adjacent wells, **or to exceed ten mg/l for short plat applications.**

15.65.410 - Subdivision Standards.

A. All lots in a proposed subdivision served by on-site wastewater disposal systems shall conform to this section.

B. The minimum area of any lot shall be 40,000 square feet. The department may require a larger lot area where necessary to meet the requirements of this section.

C. Each lot in a proposed subdivision shall contain minimum reserved area suitable for on-site wastewater disposal systems. A holding tank shall not be considered as either the original or replacement site. Reserved areas shall be based on test holes completed on each lot. The department may require additional tests to better assess the ability of the soils to accept wastewater. Groundwater monitoring shall be done during seasonally high months of May and/or October. Groundwater monitor tubes shall not be removed until construction of the on-site wastewater disposal system has commenced. The minimum reserved area may be determined by either of the following two methods:

1. Total reserved area requirements may be determined from Table 7 without consideration of subsurface disposal field designs or the number of bedrooms allowed on the lot. The reserved area shall meet all separation distances required in this chapter. Test holes shall be located within the designated reserved area.

Table 7. Reserved Area Requirements	
Percolation Rate (minutes/inch)	Reserved Area (square feet)
1 - 5	10,000
6 - 12	12,000
13 - 24	14,000
25 - 60	16,000

2. The lot shall contain sufficient area to provide for structures, and a well or other water source, and sufficient area for an original on-site wastewater disposal system and one replacement subsurface disposal field designed in accordance with this chapter. The plat shall designate the maximum number of bedrooms allowed on each lot. The area to be used for the wastewater disposal fields shall be designated on the plat for each lot as being unavailable for use as driveways, parking areas or structures.

Exception: Reserved areas are not required if the proposed lot has an existing approved on-site wastewater disposal system. Existing on-site disposal systems on proposed lots shall have been approved by the regulatory agency or shall be documented and approved in accordance with this chapter. An area for a replacement wastewater disposal system shall be demonstrated.

Exception to 15.65.410 subdivision standards: Proposed subdivisions containing on-site wastewater disposal systems approved by the regulatory agency may be approved without conforming to this section if the number of lots in the subdivision is not increased, and for decreased lot sizes the subdivider demonstrates all of the following:

1. Lot sizes must be decreased in order to resolve a surveying error or fix violations to municipal code, provided the decrease in lot size of any one lot does not exceed fifteen percent of the lot size prior to the decrease.
2. Strict application of this section would be impractical and unreasonable or not in the best interests of the public health, safety, or welfare.
3. The proposal would not be detrimental to the public welfare or injurious to other property.
4. The proposal will not nullify the intent and purpose of this chapter.
5. A site for a replacement wastewater disposal system is

1 available.

- 2
- 3 6. Undue hardship would result from strict compliance with the
- 4 requirements of this section.
- 5

6 **Section 4.** This ordinance shall be effective immediately upon passage and approval

7 by the Assembly, **except subsections 15.65.205H. and 15.65.205F.1. shall be**

8 **effective on May 1, 2019.**

9

10

11 PASSED AND APPROVED by the Anchorage Assembly this 23rd day of January,

12 2018.

13

14

15  _____

16

17 Chair

18 ATTEST:

19  _____

20

21 Municipal Clerk

22

MUNICIPALITY OF ANCHORAGE
Summary of Economic Effects -- General Government

AO Number: 2017-129

Title: **AN ORDINANCE REPEALING AND REENACTING ANCHORAGE MUNICIPAL CODE CHAPTER 15.65 WASTEWATER DISPOSAL; AMENDING ANCHORAGE MUNICIPAL CODE SECTION 4.40.150, THE ON-SITE WASTEWATER SYSTEM TECHNICAL REVIEW BOARD; AND AMENDING ANCHORAGE MUNICIPAL CODE SECTION 14.60.030, THE FINES ASSOCIATED WITH CHAPTER 15.65.**

Sponsor: **MAYOR**
Preparing Agency: Development Services Department
On-site Water & Wastewater Section
Others Impacted:

CHANGES IN EXPENDITURES AND REVENUES:		(In Thousands of Dollars)				
	FY16	FY17	FY18	FY19	FY20	
Operating Expenditures						
1000 Personal Services						
2000 Non-Labor						
3900 Contributions						
4000 Debt Service						
TOTAL DIRECT COSTS:	\$ -	\$ -	\$ -	\$ -	\$ -	
Add: 6000 Charges from Others						
Less: 7000 Charges to Others						
FUNCTION COST:	\$ -	\$ -	\$ -	\$ -	\$ -	
REVENUES:						
CAPITAL:						
POSITIONS: FT/PT and Temp						

PUBLIC SECTOR ECONOMIC EFFECTS:

Approval of this ordinance could have some economic effects on the public sector, but it would be difficult to project an amount. The noteworthy impacts include:
1. The proposed code will reduce commonly requested waivers, resulting in a slight loss of income for the MOA.
2. Use of engineered receiving soil and new steep slope provisions will allow development of land previously difficult to develop. This will provide additional property tax income to the MOA.
See the Summary of Significant Changes (Attachment B) for more detailed explanations.

PRIVATE SECTOR ECONOMIC EFFECTS:

Approval of this ordinance could have some economic effects on the private sector, but it would be difficult to project an amount. The noteworthy impacts include:
1. A reduction in commonly requested waivers will save homeowners money.
2. Use of engineered receiving soil and new steep slope provisions will allow development of land previously difficult to develop.
See the Summary of Significant Changes (Attachment B) for more detailed explanations.

Prepared by: *Rebecca Carroll, P.E.*
On-Site Water & Wastewater Section

Telephone: 343-7908



MUNICIPALITY OF ANCHORAGE

Assembly Memorandum

No. AM 668-2017

Meeting Date: September 26, 2017

From: MAYOR

Subject: AN ORDINANCE REPEALING AND REENACTING ANCHORAGE MUNICIPAL CODE CHAPTER 15.65 WASTEWATER DISPOSAL; AMENDING ANCHORAGE MUNICIPAL CODE SECTION 4.40.150, THE ON-SITE WASTEWATER SYSTEM TECHNICAL REVIEW BOARD; AND AMENDING ANCHORAGE MUNICIPAL CODE SECTION 14.60.030, THE FINES ASSOCIATED WITH CHAPTER 15.65.

Repeal and Reenact AMC Chapter 15.65

This ordinance repeals the existing AMC chapter 15.65 Wastewater Disposal in its entirety and reenacts the revised chapter. Beginning in 2009, the Development Services Department met with the private sector, Alaska Department of Environmental Conservation, and Municipality of Anchorage professionals (Subcommittee) to discuss proposed revisions to chapter 15.65. Meetings were held weekly during the 2009/2010 winter season and as needed thereafter. The revised chapter was then submitted to the MOA On-site Wastewater System Technical Review Board (Board) in September of 2010 for review and approval. Subsequently, the Board held public meetings to discuss, refine and approve the chapter. Proposed technical revisions should not be controversial as every reasonable attempt was made to resolve issues during these Subcommittee and Board meetings.

The existing AMC chapter 15.65 Wastewater Disposal is provided for reference as Attachment A.

The recommended "deletion and insertion" format was not used primarily because the chapter was reorganized to be more chronologically consistent with the permitting/construction/approval process and due to the extent of changes being proposed. A summary of significant changes is being provided as Attachment B.

The department also reviewed the changes to 15.65 proposed by Policy 13-L of the Hillside District Plan. The proposed changes and the department's responses are being provided as Attachment C.

AMC Section 4.40.150

Refer to Attachment B for explanation of proposed revisions to AMC section 4.40.150.

AMC Section 14.60.030

AMC section 14.60.030 Fine Schedule references specific sections within AMC chapter 15.65, which are renumbered in the revised chapter. The proposed ordinance simplifies the fines associated with AMC Chapter 15.65 since fines were similar for each type of violation. A summary of economic effects is provided as Attachment D.

THE ADMINISTRATION RECOMMENDS APPROVAL.

Prepared by:	Rebecca Carroll, PE, On-site Water & Wastewater Section
Approved by:	Ross Noffsinger, PE, Engineering Services Manager, Acting Building Official, Development Services Department
Concur:	Jack Frost, Acting Director, Development Services Department
Concur:	Lance Wilber, Director, OMB
Concur:	Robert E. Harris, CFO
Concur:	William D. Falsey, Municipal Attorney
Concur:	Michael K. Abbott, Municipal Manager
Respectfully submitted:	Ethan A. Berkowitz, Mayor

MUNICIPALITY OF ANCHORAGE

Attachment A

Chapter 15.65 - Current Code

Chapter 15.65 - WASTEWATER DISPOSAL

PART I. - WASTEWATER DISPOSAL

15.65.005 - Intent and scope of chapter.

A. *Intent.* On-site wastewater disposal systems provide an important, economically efficient, and relatively clean and healthful method of wastewater disposal in areas of the municipality not served by an integrated sewage collection and disposal system. The intent of this chapter is to maintain the public health and environmental quality through the regulation of on-site wastewater disposal.

B. *Scope.* This chapter provides:

1. Minimum standards governing the design, installation and operation of individual on-site wastewater disposal systems and authority to the municipality to administer and enforce these standards and regulations;
2. Prohibitions against wastewater discharges other than through approved means;
3. Authority to the municipality to create and empower limited local on-site sewer districts;
4. Authority to the municipality to require connection to public sewers and the conditions under which such connection must occur; and
5. Minimum standards for new subdivisions that are to be served by on-site wastewater disposal systems.

(AO No. 86-21; AO No. 90-48(S-1))

15.65.010 - Definitions.

The following words, terms and phrases, when used in this chapter, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Absorption area means that area in a subsurface disposal field used to absorb treated effluent.

Absorption bed means a shallow excavation, usually rectangular, wider than five feet, containing gravel and perforated distribution pipes, that receives septic tank effluent and allows it to seep into the surrounding porous soil.

Alternative system means a particular design or type of on-site wastewater disposal system or component of a system based upon improvements or development in technology of sewage disposal and not otherwise provided for in this chapter.

Certificate of health authority approval means a written confirmation signed by an engineer and the department certifying that the on-site sewer or water system serving a single-family dwelling is functional and complies with all state and local regulations and codes. In the event of inconsistency among these regulations and codes, the most restrictive shall apply.

Cesspool means a subsurface pit which receives untreated wastewater.

1 *Deep absorption trench* means a 12- to 36-inch-wide ditch which contains at least
2 four feet of gravel below the horizontal perforated distribution pipe. It receives treated
3 effluent and allows the effluent to seep into the surrounding porous soil.

4 *Earth privy* means a device for the disposal of human excreta in a pit in the earth.

5 *Engineer* means a professional civil engineer registered pursuant to AS 8.08.

6 *Gravel* means rock measuring 0.5 to 2.5 inches in diameter with no more than three
7 percent of the material passing a number 200 sieve screen (0.074 millimeter diameter
8 openings).

9 *Groundwater* means subsurface water permanently or seasonally occupying the zone
10 of saturation.

11 *Hazardous substance* means those substances which because of quantity or
12 concentration of physical, chemical or infectious characteristics may pose a substantial
13 threat to human health or the environment when improperly treated, stored, transported
14 or disposed. Hazardous substances include those wastes defined as hazardous under
15 federal, state and local law.

16 *Holding tank* means a watertight covered receptacle designed and built to receive
17 and store domestic wastewater for disposal at another location.

18 *Impermeable barrier* means material with a percolation rate greater than 120 minutes
19 per inch.

20 *Insulation* means two inches or more of high-density direct burial polystyrene
21 insulation or other material of comparable insulating value approved by the department.

22 *Lift station* means a tank or chamber accompanied by a pump and related controls
23 used to retain effluent and periodically discharge it.

24 *Limited wastewater service district* means a group of properties associated for the
25 purpose of disposing of wastewater by a common means as described in section
26 15.65.170.

27 *Malfunction and malfunctioning system* mean an on-site wastewater disposal system
28 which is not functioning in compliance with the requirements of this chapter or the design
29 of the system. Malfunctions include but are not limited to the following:

- 30 1. Absorption systems and disposal systems which allow untreated effluent to seep
31 or flow to the surface of the ground or into waters of the state;
- 32 2. Systems which fail to operate in accordance with their designated operation; and
- 33 3. Systems discharging effluent which does not comply with the applicable effluent
34 discharge standards.

35 *Mound system* means a soil absorption system that is elevated above the natural soil
36 surface utilizing suitable fill material, horizontal perforated distribution pipes, and
37 standpipes.

38 *On-site wastewater disposal system* means any wastewater storage, treatment or
39 disposal system serving a single-family dwelling that is not connected to any other system
40 or dwelling. Types of on-site wastewater disposal systems are systems with septic tanks
41 and subsurface disposal fields, alternative systems and holding tanks.

42 *Owner* means the person responsible for control of the property on which an on-site
43 wastewater disposal systems exists or for which one is proposed.

44 *Percolation rate* means the rate at which water flows or trickles through porous soils,
45 as determined by a percolation test.

1 *Percolation test* means a falling-head percolation test as described on page 41 of the
2 U.S. Environmental Protection Agency's design manual entitled, "On-Site Wastewater
3 Treatment and Disposal Systems," 1980 edition, and taken at the depth of a proposed
4 absorption system or similar component of an on-site wastewater disposal system. The
5 test determines the rate at which water is absorbed in the soil.

6 *Public sewer* means a sewer that is operated by a public utility as defined in AS
7 42.05.701, as amended.

8 *Pumper* means a person holding a permit issued by the department to pump on-site
9 wastewater disposal tanks.

10 *Repair* means to restore or replace a component of an on-site wastewater disposal
11 system, but does not include an enlargement of any component of the system.

12 *Replacement disposal site* means an area suitable for an on-site subsurface disposal
13 field which is identified and set aside for that purpose.

14 *Seepage pit* means a covered porous walled pit through which treated effluent may
15 seep into surrounding porous soil.

16 *Septic tank* means a watertight covered receptacle designed and built to receive
17 domestic wastewater, separate floating and settling solids from the liquid, anaerobically
18 digest organic matter, store digested solids through a period of detention, and allow
19 clarified liquids to discharge for final disposal.

20 *Shallow absorption trench* means a trench five feet or less in width which contains
21 not less than six inches and not more than four feet of gravel below the horizontal
22 distribution pipe.

23 *Subsurface disposal field* means an absorption bed, deep or shallow absorption
24 trench, seepage pit or mound system.

25 *Subsurface drain* means any subsurface drainage structure which intercepts or
26 diverts underground water flows.

27 *Surface water* means any persistent natural or manmade source of water which is
28 not directly attributable to a single rainfall or snowmelt event. Surface water includes all
29 lakes, springs, creeks, streams, intermittent or seasonal flows, natural or artificial bodies
30 of water and waters of the state as defined in AS 5.25.100(5).

31 *Vault privy* means an earth privy in which the pit is lined with an impervious material
32 and in which provision is made for the removal of excreta.

33 *Wastewater* means water contaminated by human excreta, food wastes, washwater
34 and other liquid wastes commonly discharged into water-carried sewage disposal
35 systems, and such diluting water as may have entered the waste disposal system.
36 Wastewater does not mean liquids containing hazardous wastes as defined by federal,
37 state or municipal law.

38 *Water-carried sewage disposal system* means a wastewater disposal system through
39 which wastes are conveyed with the aid of water.

40 *Water table* means the level of saturated soil where the hydraulic pressure is zero.
41 This is the depth at which the free water level stabilizes in an open hole that just
42 penetrates the water table.

43 *Watershed* means the area which has been zoned under municipal regulations.
44 (AO No. 86-21; AO No. 90-48(S-1); AO No. 93-89; AO No. 98-124, § 3, 8-18-98)
45

15.65.015 - On-site wastewater system technical review board.

Editor's note— Section 15.65.015 has been recodified as section 4.50.065 by AO No. 96-152, § 3, effective December 17, 1996; expires Dec. 17, 1999. Section 4.50.065 was then renumbered as section 4.40.150.

15.65.020 - Wastewater discharge restrictions.

- A. No person may cause or permit any wastewater to be discharged or disposed of except into an on-site wastewater disposal system conforming to the standards of this chapter and 18 AAC 72 or into a public sewer in a manner conforming to this chapter and to the tariff and laws governing the utility operating the public sewer.
- B. A lot or parcel serving a single-family dwelling and served by a well or public water supply must have an on-site wastewater disposal system conforming to this chapter, or a public sewer.
- C. A person may not cause or permit any wastewater to be discharged or disposed of on the surface of the ground or in such a manner that it may gain access to surface water or groundwater except in accordance with provisions of this chapter or the regulations of the state department of environmental conservation.
- D. A person may not cause or permit the construction, installation or operation of an excavation that receives wastewater and permits the liquids to seep through the bottom or the sides into the surrounding porous soil except as specifically provided for in this chapter.

(AO No. 86-21; AO No. 90-48(S-1))

15.65.025 - Restrictions on discharges into wastewater disposal systems.

- A. A person may not cause or permit any machinery cooling water, footing water, surface water or roof drainage water, or hazardous substance to be discharged into any on-site wastewater disposal system.
- B. A person may not cause or permit any object or substance to be placed in any on-site wastewater disposal system which might hinder the operation of the on-site wastewater disposal system.

(AO No. 86-21; AO No. 90-48(S-1))

15.65.030 - On-site wastewater disposal permits.

- A. *Required.* A person may not install or modify an on-site wastewater disposal system, earth privy or vault privy without a permit from the department, except for simple repairs such as piping or moving parts repairs. A separate permit is required for each installation or modification.
- B. *Submittal of application.* All permit applications must be prepared by and bear the original signature of the applicant or an authorized representative. Such applications must be submitted to the department on forms provided by the department.
- C. *Contents of application for repair or replacement of tanks.* An application for a permit for repair or replacement of tanks such as septic tanks, holding tanks or lift stations must include:
 - 1. The legal description of the property on which the system is located;
 - 2. A description of the proposed repairs; and

3. For proposed repairs involving replacement of the tank, distances from the old tank to all features listed in section 15.65.050.A that are within 200 feet of the on-site wastewater disposal system.
- D. *Contents of application for installation or modification of subsurface disposal field.* An application for a permit for repairs or modification of an existing on-site wastewater system that would involve expansion or construction of a subsurface disposal field, or an application for a permit for a new system, must include:
 1. A site plan, bearing the original signature and stamp of an engineer, drawn to standard engineering scale but not smaller than one to 100. The site plan shall show:
 - a. The location of the on-site well and all components of the on-site wastewater disposal system, including but not limited to all piping and manholes, septic tank or holding tank, lift station, cleanouts, standpipes, the subsurface disposal fields, including all attendant piping, and the replacement subsurface disposal field;
 - b. Measured dimensions of the on-site wastewater disposal field and distribution piping;
 - c. Measured distances to all wastewater disposal systems, wells, surface water or drainage courses, roads, property lines and structures within 200 feet of the location of any existing or proposed on-site wastewater disposal systems;
 - d. The locations of all soils, percolation or water table tests; and
 - e. A description of the topography, areas of excessive slope, and extent of slopes and surface drainage patterns within 100 feet of any part of the system or portion of the lot intended for use for on-site wastewater disposal;
 2. A design of the on-site wastewater disposal system bearing the original signature and stamp of an engineer;
 3. The results of soils, percolation and water table tests conducted in accordance with this chapter. For new systems, these tests must be conducted and reported for both the original and replacement subsurface disposal fields; and
 4. A narrative description of probable impacts to adjacent properties. The comments must include but are not limited to consideration of:
 - a. Wells;
 - b. Wastewater systems;
 - c. Reserved space or surface, and subsurface; and
 - d. Drainage.
- E. *Records.* The department shall maintain indexed records of all engineering data submitted for permits and inspection reports and make this data available to the public. These data will provide historical information to aid in the design and approval of future systems.
- F. *Issuance.* The department shall determine, after review of the application and test results as well as available historic data, whether the proposed system complies with this chapter. The permit may be denied if provisions of this chapter or of accepted engineering and construction practices are not met.
- G. *Authority to grant exceptions to requirements.* The department may approve an on-site wastewater disposal system that does not conform to this chapter if the

department finds, after consideration of relevant test results, engineering data, publications and other materials, that the system will function as effectively as a system that conforms to this chapter. The applicant shall be responsible for furnishing proof that the system will function as effectively as a system provided for in this chapter.

- H. *Inspections; authority to require additional information.* The department may conduct site inspections or require submission of additional information prior to the issuance of permits or health authority certificates. Information may include but is not limited to soil and percolation test results and topographic maps.
- I. *Nonliability of department.* Issuance of a permit does not constitute assumption by the department or its employees of liability for the failure of any on-site wastewater disposal system.
- J. *Expiration of permit.* A permit for an on-site wastewater disposal system shall expire one year from the date of issuance, but may be renewed for one additional year at no additional fee.

(AO No. 86-21; AO No. 90-48(S-1); AO No. 99-66(S), § 2, 5-11-99)

15.65.033 - Certificates of health authority approval.

- A. Prior to the transfer by gift, deed or contract of any ownership or use interest in a privately owned, on-site wastewater disposal system, the transferror shall obtain a certificate of health authority approval, as defined in section 15.65.010, from the department.
 - 1. The requirements of subsection A. of this section do not apply to transfers between spouses.
- B. Upon request and subject to the provisions of this section, the department may issue or deny the issuance of a certificate of health authority approval for any dwelling or site which is served by a privately owned wastewater disposal system.
- C. Where an on-site wastewater disposal system does not conform to state and/or municipal laws, but no health material hazard is posed by postponing correction of the wastewater disposal system's defects, the department may issue a certificate of conditional health authority approval to extend the period of time for corrective action until weather conditions allow. This certificate of conditional health authority approval may be issued with conditions necessary to ensure that the public health and safety are not endangered.
- D. The department shall issue a certificate of health authority approval if the department finds that information provided by an engineer demonstrates that the system for which the certificate is sought conforms to all applicable provisions of this Code, regulations promulgated thereunder and applicable state statutes and regulations in effect at the time of original installation or at the time of any subsequent modification and does not presently create a health hazard.
- E. The department may require that a request for a certificate of health authority approval be on forms provided by the department.
- F. All test procedures used to collect the information necessary to meet the requirements of this section shall be approved by the department.

(AO No. 98-124, § 2, 8-18-98)

15.65.035 - Permits for manufacturers, installers, excavators and pumpers.

- A. A person may not engage in the business of manufacturing, installing, excavating, inspecting, maintaining, pumping or cleaning on-site wastewater disposal systems or in the transportation or disposal of the contents of on-site wastewater disposal systems without first obtaining a permit from the department. An application for a permit under this section must be submitted to the department on a form provided by the department. The department may require attendance at seminars, written or oral competency examinations, and verification of knowledge and experience before issuing a permit.
- B. A person responsible for designing, approving or inspecting construction of an on-site wastewater disposal system must be an engineer. The department may conduct or sponsor continuing education seminars for engineers and shall maintain a list, available to the public, of engineers who have successfully completed such a course within the previous two years.
- C. Pumpers shall report to the department by noon of the next business day the presence of dye in any pumped effluent.
(AO No. 86-21; AO No. 90-48(S-1))

15.65.040 - Use of on-site disposal systems.

- A. A person may not construct, install or use an on-site wastewater disposal system except in accordance with the provisions of this chapter or other ordinances, regulations or statutes in effect at the time of system construction. Except as this subsection provides otherwise, an on-site wastewater disposal system must conform to the standards in this chapter, 18 AAC 72, and applicable portions of the Uniform Plumbing Code, as amended. In the event of inconsistency among these regulations and standards, the more restrictive shall apply. All solid pipe used in an on-site wastewater disposal system shall be cast iron, ductile iron, high-density polyethylene, PVC rated by the American Society of Testing and Materials (ASTM) and labeled D3034, or an approved equal pipe.
- B. An on-site wastewater disposal system must have a design and actual operational capacity sufficient to dispose of 150 gallons of wastewater per day per bedroom.
- C. A lot with an on-site wastewater disposal system must have an original subsurface disposal field and one replacement site.
- D. The location of a well, on-site wastewater disposal system or subsurface drain, either separately or in combination with each other and other wells, on-site wastewater disposal systems or subsurface drains in the vicinity, shall not have the effect of prohibiting future residential use of an adjacent lot or parcel. The department may require an agreement and necessary easements with the owner of the affected property for the sharing of a well or other resolution of the problem. The agreement shall be recorded.
(AO No. 86-21; AO No. 90-48(S-1))

15.65.045 - On-site wastewater disposal system operating permits.(Repealed)
(AO No. 93-89; AO No. 93-162, § 1, 8-15-93)

15.65.050 - Septic tanks.

- A. A septic tank must be located no less than:
1. Five feet from any property line or building foundation;
 2. Ten feet from any water main or water service line;
 3. One hundred feet from any surface water; and
 4. The separation distances required by 18 AAC 72 from water supply wells.
- B. A septic tank must have a minimum working capacity, comprised of the volume of the septic tank below the bottom of the tank's discharge outlet, of 1,000 gallons plus 250 gallons for each bedroom over three.
- C. A septic tank installed after May 20, 1986, shall have a four-inch or larger diameter standpipe with an airtight cap providing effective access to each compartment, and a cleanout installed one to four feet from the building foundation, and in the line between the tank and the distribution system there shall be two adjacent cleanouts. The cleanouts shall be located on undisturbed soil not more than ten feet from the tank. The first cleanout in the line shall be to clean the line toward the distribution system and the second cleanout will be oriented to allow cleaning toward the septic tank.
- D. All septic tanks must be fitted at the inlet and outlet with watertight couplings approved by the department.
- E. Septic tank manholes must be equipped with gaskets so as to minimize infiltration of water.
- F. If a septic tank is not buried or is buried at a depth of four feet or less, the tank must be insulated.
- G. A septic tank must be installed only in an area that will continue to be readily accessible to a pump truck. The point of access for the pump truck must be no more than 100 feet from the septic tank. The ground surface at the point of access for the pump truck must not be more than 11 feet higher than the bottom of the septic tank.
- (AO No. 86-21; AO No. 90-48(S-1))

15.65.060 - Subsurface disposal fields.

- A. *Location.* The location of an original or replacement subsurface disposal field must be in accordance with the following standards:
1. A subsurface disposal field may not be located less than:
 - a. One hundred feet from the mean annual flood level of any surface water, major drainage course or source of domestic water supply;
 - b. Fifty feet uphill from any manmade or any natural break in the natural slope of the terrain where the slope changes to 25 percent or greater unless the top of the drainfield is lower in elevation than the toe of the slope;
 - c. Fifty feet upgradient or 20 feet downgradient from any portion of a subsurface drain;
 - d. Two times the depth of gravel below the level of the horizontal perforated pipe or ten feet, whichever is greater, from any existing or abandoned subsurface disposal field;
 - e. Ten feet from any property line;

- 1 f. Ten feet from any building or structure foundation;
- 2 g. Ten feet from any water main or water service line; or
- 3 h. Five feet from any septic tank.
- 4 A subsurface disposal field shall be located in compliance with the separation
- 5 distances required by 18 AAC 72.
- 6 2. A subsurface disposal field may not be located:
- 7 a. On a slope greater than 25 percent unless the department finds that the
- 8 system will function effectively and in compliance with this chapter. The
- 9 department shall base its decision upon the report of an engineer, or on
- 10 relevant test results, publications, engineering data or similar materials;
- 11 b. Where the water table during any season of the year will be within four feet
- 12 of the bottom of the absorption area;
- 13 c. Where there is bedrock or any other impermeable barrier or where fractured
- 14 or weathered bedrock occurs within six feet of the bottom of the absorption
- 15 area; or
- 16 d. Where surface water may pond over the disposal field.
- 17 3. Areas reserved for the original and replacement disposal sites may not have
- 18 driveways, parking areas or structures over them, except that connecting pipes
- 19 may be constructed under driveways and parking areas provided the pipes are
- 20 protected from freezing.
- 21 B. *Soil, percolation and groundwater testing.* Soil, percolation and groundwater testing
- 22 as may be required by this chapter shall conform to the following:
- 23 1. Soil, percolation and groundwater table tests must be conducted in accordance
- 24 with procedures specified in this chapter. The results of such tests must bear the
- 25 original signature and stamp of an engineer and be submitted on a form provided
- 26 by the department.
- 27 2. Soil and percolation tests must be taken in each soil strata that will be used as
- 28 absorption area by the subsurface disposal field. If more than one soil stratum is
- 29 used for the absorption of wastewater, the area-weighted average rating of the
- 30 soils in the strata proposed for use for absorption must be determined or the
- 31 absorption areas may be designed on the basis of the least permeable strata
- 32 proposed for use for absorption.
- 33 3. A percolation test shall be applicable to the design of a subsurface disposal field
- 34 for a radius of no more than 30 feet around the test site. The engineer shall obtain
- 35 sufficient percolation tests to ensure the required subsurface disposal area exists.
- 36 4. A test to determine the depth of the groundwater shall be made no closer than
- 37 five feet and no more than 30 feet from the proposed or existing subsurface
- 38 disposal field. The elevation of the bottom of the test hole shall be at least six feet
- 39 below the bottom of the proposed or existing subsurface disposal field. A
- 40 perforated plastic pipe or similar device shall be installed and the test hole
- 41 backfilled and mounded to slope away from the pipe so as to prevent entry of
- 42 surface water. The water level in the pipe will be measured at least seven days
- 43 after installation to determine the water table depth below the surface. The
- 44 department may require that the water level be tested for its response to the
- 45 sudden addition or withdrawal of water.

5. When initial groundwater monitoring identifies the depth of groundwater table at six feet or less, or when available historic data indicates the highest seasonal groundwater level may be within four feet or less below the bottom of the proposed subsurface disposal system, the department may require monitoring of water levels at least once a month for not more than 12 consecutive months. The department must approve a specific monitoring program.
 6. If the proposed subsurface disposal field will be located in an area that has been filled, the engineer shall determine the suitability of the fill for its intended use.
- C. *Soil and area requirements.* Soil and area requirements for subsurface disposal fields must meet or exceed the following standards:
1. A subsurface disposal field may not be installed unless a percolation test of the soil to be used for the absorption area demonstrates the percolation rate is 60 minutes per inch or faster.
 2. A subsurface disposal field may not be installed in an accepting soil stratum having a percolation rate faster than one minute per inch without installing a filtration layer in accordance with subsection D of this section.
 3. The size of an absorption area must be based on the percolation rate of one gallon per day per square foot for the filtration layer or the percolation rate of accepting soil, whichever requires the greater area.
 4. Minimum absorption areas may not be less than as determined in accordance with the formula provided for each type of subsurface disposal field using the wastewater application rates provided in Table 1.

TABLE 1. WASTEWATER APPLICATION RATES FOR SUBSURFACE DISPOSAL FIELDS

Percolation Rate (minutes/inch)	Pit and Shallow or Deep Trench Application Rate (gpd/square foot)	Mound System Bed Application Rate (gpd/square foot)
0—1	Not suitable	Not suitable
1—5	1.2	0.8
6—15	0.8	0.5
16—30	0.6	0.4
31—60	0.45	0.3
Greater than 60	Not suitable	Not suitable
Filter layer	1.0	0.7

gpd = gallons per day

- D. *Filter materials.* Filter materials must meet the following standards:
1. Filter material must be of naturally occurring material;
 2. Filter material must be within the following size limits:

- 1 a. The maximum diameter of the smallest ten percent by weight (effective grain
2 size) of the particles shall be between 0.25 (number 40 sieve) and 1.0
3 millimeters (number 18 sieve);
- 4 b. The ratio of the maximum diameter of the smallest 60 percent by weight of
5 the filter particles to the maximum diameter of the smallest ten percent by
6 weight (uniformity coefficient) shall be less than 4.0;
- 7 c. Not more than five percent by weight of the particles shall be finer than 0.074
8 millimeters (number 200 sieve);
- 9 3. A filtration layer may not be less than two feet thick; and
- 10 4. If an engineer elects to submit an alternate design of a filtering layer, the
11 department must be satisfied that it will function in compliance with the intent of
12 this section and will meet all other requirements of this chapter.
- 13 E. *General construction standards.* Construction of subsurface disposal fields must be
14 accomplished in accordance with the following standards:
 - 15 1. Single segments of subsurface disposal fields must not exceed 100 feet in length.
 - 16 2. From October 15 to April 15, a subsurface soil absorption system under
17 construction during freezing weather must be either:
 - 18 a. Opened and closed on the same day; or
 - 19 b. Covered, sealed and heated to prevent freezing.
 - 20 3. All horizontally laid perforated pipe in a subsurface disposal field and the bottom
21 of the excavation must be level.
 - 22 4. The surface of the native soils in subsurface disposal fields must be scarified
23 before backfilling to establish a porous infiltrative surface.
 - 24 5. After perforated pipe is laid over the six-inch minimum gravel bed in subsurface
25 fields, an additional six-inch layer of gravel must be installed to provide a
26 minimum of two inches of gravel over the perforated pipe.
 - 27 6. A permeable nontoxic silt barrier must be installed between the final gravel layer
28 and the native soil backfill. Insulation may be used for this purpose as long as it
29 is installed to prevent the intrusion of silt or sand into the gravel layer below the
30 insulation.
 - 31 7. A subsurface disposal field must be backfilled to a depth of a least 24 inches over
32 the final layer and silt barrier.
 - 33 8. If the backfilled depth over the final gravel layer is less than 36 inches, insulation
34 must be placed over the top of the final gravel layer.
 - 35 9. Insulation must be placed over any wastewater line or pipe over which a
36 driveway, parking or vehicle storage area may be constructed.
 - 37 10. The horizontal separation between subsurface disposal fields or segments of
38 subsurface disposal field must be at least twice the depth of the gravel below the
39 level of the horizontal perforated pipe, but not less than ten feet.
 - 40 11. The finished grade over a subsurface disposal field must be mounded to prevent
41 the formation of a depression after the backfill soil has settled.
 - 42 12. A subsurface disposal field must have cleanouts. The cleanouts shall be
43 connected to the underground piping system in such a manner that cleaning can
44 be performed and the disposal field thawed. The cleanouts must be at least four
45 inches in diameter for gravity systems and located near each end of the field.

13. A subsurface disposal field must have vertical monitoring pipes installed. At least one monitor pipe with a minimum diameter of four inches shall be installed in each disposal field or section of disposal field if the field is not continuous. Monitor pipe is to be perforated to allow liquid level measurement to the bottom of the trench excavation. Nonperforated monitor pipe shall extend from the distribution pipe invert to above ground level.
14. Perforated pipe used in gravity subsurface disposal fields must be four inches in diameter and must meet specifications.

F. *Seepage pit and deep absorption trench types.*

1. The absorption area required for a seepage pit or deep absorption trench is equal to the number of bedrooms multiplied by 150 gallons per day per bedroom and divided by the trench application rate derived from table 1 in subsection C.4 of this section.
2. In calculating the absorption area for deep absorption trenches or seepage pits, only the porous soil strata intended for absorption of wastewater on the side wall of the trench or pit below the lateral distribution pipe may be considered as absorption area.
3. Deep absorption trenches need not be straight, but must run parallel to the contour lines of the slope.
4. A seepage pit may not be used in soils with a percolation slower than 30 minutes per inch.

G. *Shallow absorption trench type.*

1. A standard shallow absorption trench is one in which gravel material extends two inches above and six inches below the perforated distribution pipe and is 12 inches wide.
2. The absorption area required for a standard shallow absorption trench is equal to the number of bedrooms multiplied by 150 gallons per day per bedroom and divided by the trench application rate in gallons per day per square foot derived from table 1 in subsection C.4 of this section.
3. In calculating the absorption area for shallow trenches, only the porous soil strata intended for absorption of wastewater on the bottom and side wall below the lateral distribution pipe may be considered as absorption area. The soil layer used for the absorption area must be a minimum of 24 inches thick below the bottom of the gravel.
4. The required length of trench, for trenches of greater depth of gravel or of greater width than a standard shallow trench, shall be determined by multiplying the length of standard trench required by the appropriate factor derived from the following formula:
$$\text{Factor} = W + 2 / W + 1 + 2D$$
where W is the width of the trench in feet and D is the depth of gravel in feet below the distribution pipe.
5. A shallow absorption trench need not be straight but must parallel the contour lines of the ground surface.

H. *Absorption beds.*

1. The absorption area required for an absorption bed must be computed by multiplying the number of bedrooms by 150 gallons per day per bedroom and dividing by the bed application rate in gallons per day per square foot derived from table 1 of subsection C.4 of this section. In calculating the absorption area required for an absorption bed, only the bottom area of the absorption bed may be considered as absorption area. The soil layer used for the absorption area must be a minimum of 24 inches thick below the bottom of the gravel.
2. The bed bottom must be within two inches of level.
3. An absorption bed may not be installed on a ground surface slope greater than ten percent.
4. The width of an absorption bed must not exceed 15 feet without approval from the department.
5. The perforated distribution pipes used in an absorption bed must be no more than six feet apart. The distance between the outermost perforated distribution pipes and the sidewall of the absorption bed must be no more than three feet.
- I. *Mound systems.* Mound systems must be designed by an engineer and constructed to meet or exceed the following standards:
 1. Any peat or organic matter must be removed from the elevated mound site;
 2. Sufficient filtering material as described in subsection D of this section must be placed on top of the accepting stratum of native soil to create a combined total separation from the water table or impermeable strata which equals or exceeds those standards set out in subsection A of this section. The unsaturated accepting stratum must be a minimum of 24 inches thick;
 3. The absorption area required for a mound system must be computed in the same way as for an absorption bed, except that the percolation rate used for calculating the absorption area needed for an elevated mound system must be the percolation rate of the accepting stratum of natural soil or the percolation rate of the filtering sand, whichever requires the larger area;
 4. The side slope of the top layer of the mound system exclusive of topsoil must not be steeper than 33 percent;
 5. A mound system must function so as to ensure that all treated effluent is contained within the mound area and absorbed into the intended accepting soil stratum;
 6. The upper six inches of a mound system must consist of top soil; and
 7. The mound must be vegetated sufficiently to prevent erosion.

(AO No. 86-21; AO No. 90-48(S-1))

15.65.070 - Holding tanks.

- A. A person may not install a holding tank, unless:
 1. Public sewer will be available within one year and the use of the holding tank is terminated within 60 days of the date public sewer is available in accordance with section 15.65.110; or
 2. An engineer certifies it is necessary as a remedial measure where an existing on-site wastewater disposal system malfunctions and cannot be repaired, rejuvenated or replaced to bring the system in compliance with this chapter.

1 A holding tank may be used as a temporary, seasonal measure to allow for repairs of the
2 existing system.

3 B. A holding tank shall be located no less than:

4 1. Five feet from any property line or building foundation;

5 2. Ten feet from any water main or water service line;

6 3. One hundred feet from surface water; and

7 4. The separation distances required by 18 AAC 72 from water supply wells.

8 C. The capacity of a holding tank may not be less than 2,000 gallons and must be
9 increased by 500 gallons for each bedroom over three.

10 D. A holding tank must be installed in an area that is readily accessible to a pump truck
11 at all times and where overflow during operation or spillage during pumping will not
12 create a health hazard. The access site for the pump truck must not be more than
13 100 feet from the holding tank. The elevation of the site must not be more than 11
14 feet higher than the bottom of the holding tank.

15 E. A holding tank must be secured against flotation under high water table conditions.

16 F. A holding tank installed after September 25, 1990, must have a six-inch diameter
17 standpipe with an airtight cap to provide pumping access. The standpipe must extend
18 at least 12 inches above the surface of the ground.

19 G. A holding tank must have a watertight manhole to provide access to the interior of the
20 tank. The manhole must be at least 20 inches in diameter.

21 H. If a holding tank is not buried or is buried at a depth of four feet or less, the tank and
22 standpipe must be insulated.

23 I. A holding tank must be equipped with an approved high water level alarm which
24 registers both visually and audibly inside the dwelling. The alarm must be positioned
25 to allow at least 150 gallons per bedroom of additional storage but not less than 300
26 gallons after the alarm has been activated.

27 J. A holding tank must conform to the corrosion prevention standards for septic tanks
28 under the Uniform Plumbing Code, as amended.

29 K. The department may also ensure that the holding tank is designed and constructed
30 so as to perform adequately and maintained and operated appropriately by requiring
31 pumping contracts, operating plans, financial arrangements and other reasonable
32 conditions.

33 (AO No. 86-21; AO No. 90-48(S-1))

34
35 15.65.072 - Drainfields (shallow trench)(Repealed)

36 (AO No. 86-21; AO No. 90-48(S-1))

37
38 15.65.075 - Absorption beds.(Repealed)

39 (AO No. 86-21; AO No. 90-48(S-1))

40
41 15.65.077 - Elevated mound system.(Repealed)

42 (AO No. 86-21; AO No. 90-48(S-1))

43
44 15.65.080 - Lift stations.

- 1 A. When a lift station is required, the system must be designed by an engineer and have
2 the approval of the department. A design bearing the original signature and stamp of
3 an engineer must be submitted to the department for approval before a permit will be
4 issued. The design must meet the standards contained in this chapter.
- 5 B. A lift station must have an approved high water alarm which registers both visually
6 and audibly inside the dwelling. The alarm system must be on a separate electrical
7 circuit from the pump controls. The alarm must be triggered when there is less than
8 150 gallons of capacity remaining in the tank.
- 9 C. A lift station must be accessible at all times.
- 10 D. A lift station must be insulated and protected from freezing.
- 11 E. Lift stations made of steel shall be internally and externally protected against
12 corrosion.
- 13 F. A lift station must be located no less than:
14 1. Five feet from any property line or building foundation;
15 2. Ten feet from any water main or service line;
16 3. One hundred feet from any surface water or major drainage; and
17 4. The separation distances required by 18 AAC 72 from water supply wells.

18 (AO No. 90-48(S-1))
19

20 15.65.090 - Earth privies.

- 21 A. Earth privies must be constructed in accordance with the latest edition of the
22 Sanitarian's Handbook, or in a similar manner approved by the department.
- 23 B. An earth privy may not be used where running water is available to operate a water-
24 carried wastewater disposal system, except for short periods of time as approved in
25 writing by the department and where the purposes of this chapter are not significantly
26 affected.
- 27 C. An earth privy may not be constructed, installed or operated:
28 1. In low, wet areas, or where the groundwater during any season of the year will
29 be within four feet of the bottom of the privy;
30 2. Where there is bedrock, fractured bedrock or any impermeable barrier within six
31 feet of the bottom of the privy; or
32 3. Where there is inadequate surface drainage away from the privy.
- 33 D. An earth privy must be located no less than:
34 1. Ten feet from any water main or service line;
35 2. Thirty feet from any property line;
36 3. Twenty feet from any building or structure foundation;
37 4. Ten feet from any abandoned privy or subsurface disposal field;
38 5. Fifty feet uphill from any manmade or natural break in the natural slope of the
39 terrain where the slope changes by 25 percent or greater;
40 6. One hundred feet uphill or 30 feet downhill from a curtain drain;
41 7. One hundred feet from any surface water or any source of domestic water supply;
42 and
43 8. The separation distances required by 18 AAC 72 from water supply wells or
44 systems.

1 E. Abandoned earth privies must be backfilled to 12 inches above the original ground
2 level.

3 F. An earth privy may not be used in a watershed for a public water supply.
4 (AO No. 86-21; AO No. 90-48(S-1))
5

6 15.65.095 - Lift stations.(Repealed)
7 (AO No. 86-21; AO No. 90-48(S-1))
8

9 15.65.100 - Vault privies.

10 A. Vault privies must be constructed in accordance with the latest edition of the
11 Sanitarian's Handbook or in a similar manner approved by the department.

12 B. A concrete vault privy or other similar facility approved by the department may be
13 used instead of an earth privy for the disposal of human excreta in watersheds for
14 public water supplies when running water is not available.

15 C. The vault of the facility must be constructed of reinforced concrete, metal or other
16 watertight corrosion resistant material approved by the department. The vault must
17 be maintained in a sanitary condition, and the vault contents must be removed from
18 the watershed and disposed of by burial or another method approved by the
19 department.

20 D. A vault privy shall be located no less than:

21 1. Five feet from any property line or building foundation;

22 2. Ten feet from any water main or service line;

23 3. One hundred feet from surface water or any source of domestic water supply;
24 and

25 4. The separation distances required by 18 AAC 72 from water supply wells or
26 systems.

27 (AO No. 86-21; AO No. 90-48(S-1))
28

29 15.65.105 - Vault privies.(Repealed)
30 (AO No. 86-21; AO No. 90-48(S-1))
31

32 15.65.110 - Connection to public sewer system.

33 The following are requirements for connection to the public sanitary sewer system:

34 1. When this section prohibits the operation of an on-site wastewater disposal
35 system that system must be removed or abandoned, and rendered harmless, at
36 the owner's expense.

37 2. Any lot which is served by on-site wastewater disposal system and for which there
38 is not a second replacement disposal site and to which public sewer is available
39 must connect to the public sewer at such time as the on-site wastewater disposal
40 system fails or requires upgrading. Simple repairs of broken pipes, moving parts,
41 or accidental puncture of the tank may be accomplished in accordance with
42 original design standards.

43 3. A public sewer system is available to a lot or parcel when:

44 a. A public sewer line extends the full frontage of at least one side of the lot or
45 parcel; or

- b. The lot or parcel abuts a cul-de-sac in which a sewer line extends past the center of the bulb of the cul-de-sac.
4. Lots which contain less than 40,000 square feet within lot lines may not construct an on-site wastewater disposal system if the public sewer system has been approved or installed in accordance with title 19. An approved system means a system which will be under construction within one calendar year from the application for an on-site wastewater disposal system.
5. A person may not operate a holding tank for more than 60 days after a public sewer is available.
6. A property where public sewer was not extended by title 19 (with the vote and approval of the property owners), will not be assessed for sewers unless the property owner completes a sewer connect permit application. Upon issuance of the sewer connect permit, the property will be assessed through a permission to enter (PTE) or levy upon connection (LUC) procedure.

(AO No. 86-21; AO No. 90-48(S-1))

Cross reference— Building regulations, ch. 23.05; sewer service, ch. 26.50.

15.65.120 - Nonconforming on-site disposal systems.

- A. Except as provided in this section, any on-site wastewater disposal system installed pursuant to a construction permit before September 25, 1990, must operate in compliance with the installation and design standards for that system which were in effect when the permit for the installation of the system was issued.
- B. Repair of broken pipes, moving parts or perforations of a tank may be accomplished in accordance with original or current design standards.
- C. If a component of an on-site wastewater disposal system malfunctions and is replaced, its replacement must be in compliance with this chapter.
- D. Cesspools may not be installed or operated.

(AO No. 86-21; AO No. 90-48(S-1))

15.65.130 - Alternative on-site disposal systems.

- A. The department shall encourage development of alternative methods of on-site wastewater disposal. Once a year the department shall solicit designs for alternative systems. The department shall submit all proposals to the on-site wastewater technical review board for consideration prior to issuance of a provisional permit and shall provide a reasonable period for public review and comment on any proposal.
- B. The department may issue provisional permits allowing the installation and operation of alternative systems which meet or exceed the treatment standards of this chapter and 18 AAC 72. Permits shall be for a period of one year, during which time testing and evaluation of the particular system shall be conducted.
- C. Proposed proprietary equipment must be approved by the National Sanitation Foundation and the test and evaluation results must be made available to the department.
- D. Anyone proposing to install an alternative system shall submit to the department a description of the system and an effluent testing and reporting program. Tests may

- 1 include but are not limited to tests for fecal coliform, suspended solids, biological
2 oxygen demand, pH, dissolved oxygen and nitrate nitrogen.
- 3 E. The department may require that the person installing the alternative system provide
4 a detailed description of maintenance, operation and abandonment procedures which
5 ensure the alternative system will operate in compliance with applicable laws and
6 regulations.
- 7 F. As a condition of issuing a permit for an alternative system, the department may
8 require that a bond payable to the municipality be provided in an amount sufficient to
9 pay the cost of repair or conversion of the on-site wastewater disposal system so that
10 it complies with this chapter.
- 11 G. The department may enter into a contract with the installer through which appropriate
12 responsibilities for installation, maintenance, testing, reporting and system
13 abandonment are established and compliance with laws and regulation are ensured.
- 14 H. The department may fund all or any part of a nonproprietary alternative on-site
15 wastewater treatment system program.
- 16 I. After the period of the provisional permit, the department shall evaluate the contract
17 and the performance and practicability of the system.
- 18 J. The department shall propose changes in regulations or ordinances to enable use of
19 the system as a conventional system upon demonstration to the satisfaction of the
20 department of the effectiveness and practicality of the alternative system.

21 (AO No. 86-21; AO No. 90-48(S-1))

22
23 15.65.135 - Inspections of on-site wastewater disposal system installation.(Repealed)
24 (AO No. 86-21; AO No. 90-48(S-1))

25
26 15.65.140 - Separation distance waivers for on-site disposal systems.

- 27 A. When authorized by the state department of environmental conservation, the
28 department may issue waivers of the separation distances required between on-site
29 wastewater disposal systems and those areas specified in 18 AAC 72 by using criteria
30 established by the state department of environmental conservation.
- 31 B. The department may issue waivers of the separation distances between on-site
32 wastewater disposal systems and those areas described in this chapter, if the
33 issuance of such waivers will not adversely affect achievement of the objectives of
34 this chapter and will not be in conflict with state law. A written application for a waiver
35 from the separation distances contained in this chapter must be submitted by an
36 engineer and must contain, but need not be limited to:
- 37 1. A description of the separation distances from which the waiver is requested and
38 the reasons why the separations cannot be maintained;
 - 39 2. Information on soil, topography, lot size, anticipated wastewater flow and other
40 technical information relevant to the request;
 - 41 3. Any measures which are proposed to mitigate adverse effects associated with
42 the waiver;
 - 43 4. A statement by the engineer identifying all positive and negative impacts
44 associated with granting the waiver request; and

1 5. A list including addresses and telephone numbers of all adjoining property
2 owners.

3 C. The department must notify all adjacent property owners at least seven days prior to
4 issuing a waiver unless the applicant submits notarized letters of nonobjection from
5 the owners of adjacent property.

6 D. The department must review each waiver request and must issue a written decision.
7 A denial of a waiver request must include reasons for the denial. A record of the
8 request, review and analysis procedure, and approval or denial shall be maintained
9 by the department for public inspection.

10 (AO No. 90-48(S-1))

11
12 15.65.145 - Subdivision standards.(Repealed)

13 (AO No. 86-21; AO No. 90-48(S-1))

14
15 15.65.150 - Inspections of on-site disposal system installations.

16 A. An on-site wastewater disposal system may not be backfilled, completed or used until
17 the department or an engineer has inspected and approved the installation in
18 accordance with this section. The department must be notified at least two hours prior
19 to any inspections.

20 B. Inspection reports for replacement or modification of system components may
21 encompass only those feature appropriate to the specific component.

22 C. There must be a minimum of two inspections during installation of an on-site
23 wastewater disposal system, except holding tanks.

24 1. The first inspection must be conducted after the excavation of ditches, pits,
25 trenches or beds and before any gravel is placed in the ditches, pits, trenches or
26 beds. A septic tank may be set in place, but may not be backfilled before this
27 inspection.

28 2. The second inspection must be conducted after the placement of the filter
29 material, gravel, distribution lines, standpipes, cleanouts, silt barriers and
30 insulation, but before the placement of any other backfill.

31 D. A holding tank installation must be inspected after the tank has been set in place and
32 all piping and controls have been installed, but before the placement of any backfill.

33 E. Within 30 working days from the date of the final inspection of an on-site wastewater
34 disposal system, an inspection report, including but not limited to the information
35 described in subsection F of this section, shall be submitted to the department by the
36 owner or his agent. The report must bear the seal of an engineer and be on a form
37 and to standards prescribed by the department.

38 F. The final inspection report shall include:

39 1. An as-built plan to an appropriate scale on an 8½- by 11-inch sheet showing the
40 location of all system components. The as-built plan shall also show all features
41 described in sections 15.65.040 and 15.65.050 and 18 AAC 72.

42 2. A profile of the on-site system which provides the relative elevation of the
43 following with respect to an actual or assumed elevation mark:

44 a. Invert elevations of tank inlets and outlets;

45 b. The invert elevation of the beginning and end of all distribution pipes;

- c. The elevation of the ground surface, the monitoring well bottom and the water table at all monitoring wells; and
- d. A description of the location of the elevation mark.
3. From at least one tank standpipe and at least one drainfield standpipe, accurate distances to at least two points readily locatable under winter conditions.
4. A soils log of the pit or trench walls and bed of the subsurface disposal field if the soils differ from conditions upon which the permit was based.
5. Justifications for all departures from permit conditions.
6. Copies of all agreements required by section 15.65.040.D.

(AO No. 86-21; AO No. 90-48(S-1))

15.65.160 - Maintenance requirements for on-site disposal systems.

- A. The property owner shall be responsible for maintenance of the on-site wastewater system so as to comply with the intent of this chapter and for the abatement of any nuisance or health hazard arising from its malfunction.
- B. Septic tank maintenance shall meet or exceed the following requirements:
 1. A septic tank must be inspected to determine the need for pumping and cleaning at least once each year unless it has been pumped within the preceding two-year time period;
 2. Inspection shall be by an engineer or by a person holding a permit to perform that work under section 15.65.035;
 3. The septic tank shall be pumped and cleaned within seven days of the inspection if two inches or more of floating scum, or 24 inches or more of sludge, is present in the second compartment of the septic tank;
 4. Pumping and cleaning shall be accomplished by a person holding a permit to perform that work issued under section 15.65.035; and
 5. The owner or his agent shall furnish to the department within ten days a completed form prescribed by the department which certifies the results of the inspection or of the pumping and cleaning.

(AO No. 90-48(S-1))

15.65.170 - Limited wastewater assessment-service districts.

- A. *Establishment.* A limited wastewater assessment-service district may be established by ordinance for the following capital and service functions that will be charged for or financed by assessment, taxes or private corporation financing. This is for lots platted before May 20, 1986, and not intended for development of subdivisions.
 1. Such district may be established for the purpose of treating and disposing of wastewater for dwellings and facilities that are unable to utilize individual on-site wastewater disposal systems. The design, construction and operation of a wastewater disposal system serving less than five dwellings and delivering septic tank effluent via gravity or pressure lines to a community disposal field or to a public sewer will be allowed. The charges for the capital improvements and services are to be allocated in accordance with title 19.
 2. Supervision of the assessment-service districts shall be by a board of supervisors appointed or elected, as determined at the election at which the creation of the

- assessment-service district is approved by the property owners residing within the proposed boundaries. The development of preliminary information required for balloting of the assessment-service district and all costs associated will be paid for in advance by the district. This would include preliminary engineering, characterization of soil conditions, seasonal groundwater fluctuations and other potential environmental constraints; also, ongoing service charges for operations, maintenance, debt service and reserves required after the project is operational.
 3. Districts shall utilize procedures outlined in title 19 for capital improvements and title 27 for providing services.
- B. *Assistance by municipality.* In support of the furnishing of such functions, the board of supervisors may request the assistance of the municipality with the following duties:
1. Contract with licensed septic tank service persons for the performance of responsibilities under subsection A.1 of this section.
 2. Acquire lands and rights-of-way in accordance with chapter 25.20 under subsection A of this section.
 3. Enter in accordance with title 7 into contracts for the design and supervision of construction, and the construction of facilities under subsection A.2 of this section.
- C. *Fees.* The disposal of pumped effluents or connection to the public sewer system will be in accordance with municipal wastewater utility tariff.
- D. *Standards and procedure for approval.* It shall be demonstrated to the satisfaction of the assembly prior to the placing on the ballot of a proposition for the formation of an assessment service district that:
1. Under subsection A.1 of this section, the public health, safety and welfare would be enhanced.
 2. Under subsection A.2 of this section that:
 - a. Neither individual on-site wastewater systems, nor connection to an existing public sewer, is feasible for one or more particular lots or tracts.
 - b. The proposed work and the estimated construction costs are feasible for the district proposed to be incorporated within the assessment-service district.
- After approval under these standards, the department shall conduct not less than two public meetings with adequate notice to property owners that may be affected. If approved by the property owners, there will be a public hearing before the assembly.
- E. *Financing.* The provision of services will be paid by mill levy within such an assessment-service district.
1. The mill levy each year shall be adequate to support operation, maintenance, debt service, and a reserve for repairs and replacements.
 2. All accounting, money management, assessment collection and assigned rate of collections shall be provided by the municipality.
 3. The municipality is to be reimbursed for services rendered.
 4. It is not the intent for limited wastewater assessment-service districts to be designed, managed, operated or funded by the municipal wastewater utility. Financing of the project will be borne by the district.

(AO No. 90-48(S-1))

15.65.180 - Subdivision standards for lots to be served by on-site disposal systems.

A lot in a proposed subdivision that is to be served by an on-site wastewater disposal system must conform to the following standards:

- A. The minimum area of any lot must be 40,000 square feet within lot lines. The department may require a larger lot area where necessary to meet the requirements of this section.
- B. Each lot in a proposed subdivision must contain minimum reserved space suitable for the original and two replacement on-site wastewater disposal systems. The minimum reserved area may be determined by either of the following two methods:
 1. Total reserved area requirements may be determined from the table 2 without consideration of subsurface disposal fields or the number of bedrooms allowed on the plot.

TABLE 2

Percolation Rate (minutes/inch)	Total Reserved Area (square feet)
1—5	10,000
5—12	12,000
12—24	14,000
24—60	16,000

2. The lot must contain sufficient area to provide for structures, and a well or other water source, and sufficient area for an original on-site wastewater disposal system and two replacement subsurface disposal fields designed in accordance with the standards and procedures of sections 15.65.040, 15.65.050 and 15.65.060. The plat must designate the maximum number of bedrooms allowed on each lot. The area to be used for wastewater disposal system and replacement subsurface disposal fields must be designated on the plat for each lot as being unavailable for use for driveways, parking areas or structures.
- C. A holding tank shall not be considered as either the original or replacement site for on-site wastewater disposal.
- D. This section does not apply to subdivisions that received preliminary plat approval before May 20, 1986.
- E. Proposed subdivisions containing on-site wastewater disposal systems which are permitted under section 15.65.030 may be approved without conforming to this section if the density of existing and proposed housing in the subdivision as currently zoned, the number of bedrooms in the existing structures in the subdivision and the number of lots in the subdivision are not increased and:

- 1 1. The lot sizes do not decrease except for reasons described under subsection
- 2 E.2. of this section; or
- 3 2. Upon application for a variance to the department of health and human
- 4 services, the subdivision owner(s) demonstrate that:
- 5 a. Lot sizes must be decreased in order to resolve a surveying error,
- 6 provided the decrease in lot size of any one lot does not exceed 15
- 7 percent of the lot size prior to the decrease; and
- 8 b. Strict application of this section would be impractical and unreasonable
- 9 or not in the best interests of the public health, safety or welfare; and
- 10 c. The granting of a variance would not be detrimental to the public welfare
- 11 or injurious to other property; and
- 12 d. The variance will not nullify the intent and purpose of this chapter; and
- 13 e. Undue hardship would result from strict compliance with the
- 14 requirements of this section.

15 (AO No. 90-48(S-1); AO No. 96-15, § 1, 3-5-96)

16 **Cross reference**— Subdivision standards, generally, ch. 21.75; subdivision standards,

17 improvements, ch. 21.85; building regulations, ch. 23.05.

18 15.65.190 - Reserved.

20 PART II. - ADVANCED WASTEWATER TREATMENT SYSTEMS

21 15.65.200 - Definitions.

22 *Advanced wastewater treatment systems (AWWTS)* means all wastewater disposal

23 systems, designs or types, that use advanced technology to provide a higher quality

24 effluent than a conventional septic system as defined in 15.65.040 through 15.65.100.

25 *CBOD₅* means five day carbonaceous biochemical oxygen demand.

26 *TN* means total nitrogen.

27 *TP* means total phosphorus.

28 *TSS* means total suspended solids.

29 (AO No. 2002-177, § 2, 2-14-03)

31 15.65.210 - Regulation of AWWTS.

- 32 A. Refer to 15.65.005 for the general authority of the municipality.
- 33 B. The municipality may reject, revoke, suspend or otherwise limit or restrict a license,
- 34 certificate or permit granted under this section if the municipality finds it to be in the
- 35 best interest of the health, safety and welfare of the citizens of the municipality.
- 36 C. All design changes to AWWTS must be approved by the municipality.
- 37 D. The municipality may require specific AWWTS in areas it deems necessary for the
- 38 protection of groundwater resources and public health.

39 (AO No. 2002-177, § 2, 2-14-03)

41 15.65.220 - AWWTS selection and acceptance procedures.

- 42 A. AWWTS shall be regulated by their performance. The categories for system
- 43 performance are defined in 15.65.310, 15.65.320 and 15.65.330.
- 44 B. The administration with the advice of the On-Site Systems Technical Review Board
- 45 shall determine:

- 1 1. *Selection of proposed systems:* The designs (types) of systems selected for
2 testing under this program.
- 3 2. *Number of designs (types) of systems to be tested:* The number of different
4 designs (types) of systems selected for testing during any one annual period.
5 This number may vary depending on staffing levels within the department,
6 complexities of systems, numbers of individual systems tested and other
7 variables.
- 8 3. *Number of systems of each design (type) to be tested:* Testing shall occur on a
9 predetermined number of systems of each design (type) proposed and shall
10 range from two to five individual systems. This number may be based on the
11 complexity of the system, the number and locations of any other systems
12 currently operating, the projected reliability of the system and other
13 considerations.
- 14 4. *Acceptance procedures:* Following the annual testing period, the design (type)
15 shall either be approved for standard construction permitting and installation
16 within the municipality under one of the categories defined in 15.65.310,
17 15.65.320 and 15.65.330, or the system shall be rejected for use with the
18 municipality. Acceptance or rejection shall be based on sampling results, general
19 performance and reliability of the system and other considerations deemed
20 important by the department. A system passing all testing requirements for
21 category I, II or III defined in 15.65.310, 15.65.320 and 15.65.330 and functioning
22 adequately for the entire annual testing period shall be accepted for general use
23 in the municipality.
- 24 C. A system selected for the testing program that does not meet the requirements for a
25 category II or category III, defined in 15.65.320 and 15.65.330, may be accepted as
26 an AWWTS for installation as a category I system, defined in 15.65.310, if it meets
27 those requirements. Maintenance and repair requirements shall be identical to those
28 specified when the system was accepted for testing under this chapter.
- 29 D. The sampling period to determine acceptance or rejection and regulatory category
30 shall occur over a period of 12 consecutive months.
- 31 (AO No. 2002-177, § 2, 2-14-03)
- 32
- 33 15.65.230 - Appeal of rejection or category classification.
- 34 A. Following the annual testing period, the system representative may request a hearing
35 on the rejection or category classification of the AWWTS system. The hearing shall
36 be conducted pursuant to chapter 3.60 of this Code. Justification for the rejection or
37 classification shall be determined by the department and must be in writing.
- 38 B. Any decision to reject, revoke, suspend or otherwise limit or restrict a license,
39 certificate or permit granted under this section shall be effective immediately and is
40 final.
- 41 (AO No. 2002-177, § 2, 2-14-03)
- 42
- 43 15.65.240 - General requirements for all sampling procedures.

- 1 A. Qualified disinterested individuals must conduct all sampling. The department shall
- 2 maintain a list of qualifications required of those individuals who will conduct the
- 3 sampling.
- 4 B. A sampling schedule shall be submitted to the department for approval prior to the
- 5 start of the annual sampling period. Deviations from this proposed schedule shall
- 6 receive prior approval from the department. Any required system start-up time shall
- 7 be included in this schedule.
- 8 C. The department reserves the right to collect random samples at its discretion.
- 9 D. All samples shall be delivered to a laboratory certified by the State of Alaska for each
- 10 parameter tested. A copy of the results of all samples shall be mailed directly to the
- 11 department by the laboratory.
- 12 E. A portion of the annual sampling program may be conducted a second time with the
- 13 prior approval of the department. Approval shall be granted based on valid reasons
- 14 for discarding the first sample results. The justification for re-sampling shall be
- 15 determined by the department.
- 16 F. All sampling shall be approved by the department and accomplished according to
- 17 accepted industry standards and procedures.

18 (AO No. 2002-177, § 2, 2-14-03)

19
20 15.65.250 - Specific requirements for all sampling procedures.

- 21 A. All systems selected for testing as an AWWTS shall undergo a one-year minimum
- 22 sampling program. The sampling regimen shall meet the following requirements:
- 23 1. *CBOD₅ and TSS*. The arithmetic mean of the CBOD₅ and TSS values for the
- 24 effluent samples collected (whether grab or composite technique is used) during
- 25 a sampling period shall meet requirements in 15.65.310, 15.65.320 and
- 26 15.65.330.
- 27 a. *Year long sampling*: A minimum of 12 consecutive monthly samples shall be
- 28 collected approximately 30 days apart. One sample result from subsection
- 29 15.65.250.A.1.b, Month Long Sampling, may be used as one of the 12
- 30 monthly samples required by this paragraph.
- 31 b. *Month long sampling*: A minimum of 4 consecutive weekly samples shall be
- 32 collected approximately seven days apart. One sample result from
- 33 subsection 15.65.250.A.1.c, Week Long Sampling, may be used as one of
- 34 the four monthly samples required by this paragraph.
- 35 c. *Week long sampling*: A minimum of seven daily samples shall be collected
- 36 on a separate day of seven consecutive days.
- 37 2. *Fecal coliform*. The geometric mean of the fecal coliform values collected during
- 38 a sampling period shall meet the requirements in 15.65.310, 15.65.320 and
- 39 15.65.330.
- 40 a. *Year long sampling*: A minimum of 12 consecutive monthly samples shall be
- 41 collected approximately 30 days apart. One sample result from
- 42 15.65.250.A.2.b Month Long Sampling, may be used as one of the 12
- 43 monthly samples required by this paragraph.
- 44 b. *Month long sampling*: A minimum of 4 consecutive weekly samples shall be
- 45 collected approximately seven days apart. One sample result from

15.65.250.A.2.c Week Long Sampling, may be used as one of the four monthly samples required by this paragraph.
c. *Week long sampling*: A minimum of seven daily samples shall be collected on a separate day of seven consecutive days.
(AO No. 2002-177, § 2, 2-14-03)

15.65.260—15.65.290 - Reserved.

PART III. - ADVANCED WASTEWATER TREATMENT STANDARDS

15.65.300 - Baseline system standards.

- A. A passive dual compartment septic tank, with or without a lift station, and subsurface soil absorption field which meet the requirements of 15.65.050 and 15.65.060 should have anticipated effluent concentrations from the treatment (septic) tank with the following characteristics:
1. CBOD₅ 300 mg/l.
 2. TSS 250 mg/l.
 3. TN 60—80 mg/l.
 4. TP 15 mg/l.
 5. Fecal Coliform— 1.5×10^6 col./100 ml.
- B. A Baseline System that does not incorporate any advanced treatment technology or moving parts (except a lift station) shall not require an AWWTS maintenance and repair contract and is not considered advanced technology.

(AO No. 2002-177, § 2, 2-14-03)

15.65.310 - Category I, Wastewater Treatment Standards.

- A. A Category I system design (type) using advanced treatment technology is a system comprised of a tank or tanks, filters, air pumps (or other devices), which fails to meet the requirements of a Category II system.
- B. An advanced treatment system which undergoes the annual sampling regimen and fails to meet the requirements of Category II, may be installed as a Category I system. Maintenance and repair requirements shall be identical to those specified when the system was accepted for testing under this chapter.

(AO No. 2002-177, § 2, 2-14-03)

15.65.320 - Category II, Wastewater Treatment Standards

- A. A Category II system design (type) using advanced treatment technology, comprised of a tank or tanks, filters, air pumps (or other devices), shall produce an effluent, prior to discharging to the disposal field, with the following characteristics:

Parameter	Year Long Sampling	Month Long Sampling	Week Long Sampling
CBOD ₅ and TSS	30 mg/l	40 mg/l	45 mg/l

Fecal Coliform	50,000 col/100 ml	75,000 col/100 ml	100,000 col/100 ml
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(AO No. 2002-177, § 2, 2-14-03)

15.65.330 - Category III, Wastewater Treatment Standards.

A Category III system design (type) using advanced treatment technology, comprised of a tank or tanks, filters, air pumps (or other devices), shall produce an effluent, prior to discharging to the disposal field, with the following characteristics:

Parameter	Year Long Sampling	Month Long Sampling	Week Long Sampling
CBOD ₅ and TSS	10 mg/l	20 mg/l	30 mg/l
Fecal Coliform	10,000 col/100 ml	20,000 col/100 ml	30,000 col/100 ml

(AO No. 2002-177, § 2, 2-14-03)

15.65.340 - Nitrogen reducing systems.

A. All category I, II and III systems, defined in 15.65.310, 15.65.320 and 15.65.330, may be additionally classified as Nitrogen Reducing Systems if their effluent meets the following nitrogen characteristics:

1. *Year long sampling:* The arithmetic mean of the TN values for the effluent samples collected (whether grab or composite technique is used) during an annual period shall not exceed 20 mg/l. A minimum of 12 monthly samples shall be collected approximately 30 days apart.
2. *Month long sampling:* The arithmetic mean of the TN values for a minimum of four effluent samples, each collected (whether grab or composite technique is used) on a separate day approximately seven days apart during a period of 30 consecutive days (monthly) shall not exceed 30 mg/l.
3. *Week long sampling:* The arithmetic mean of the TN values for a minimum of seven effluent samples, each collected (whether grab or composite technique is used) on a separate day of seven consecutive days shall not exceed 40 mg/l.

B. The Municipality shall have the authority to require nitrogen-reducing systems in areas it deems necessary for the protection of groundwater resources and public health.

(AO No. 2002-177, § 2, 2-14-03)

15.65.350 - General design requirements.

A. Components of wastewater treatment systems being evaluated as AWWTS and those systems approved as AWWTS shall meet all requirements set forth in this chapter, the Uniform Plumbing Code (latest adopted revision), and The Standards and Specifications for Component Parts and Materials used in Construction of On-Site Wastewater Disposal Systems, issued by the department.

- B. Alarms or warning devices. Any system component utilizing a mechanical device shall be provided with an automatic visual or audible means of notifying the user of the system of a mechanical device failure.
1. Any alarm that is electrically powered is to be on a separate circuit from the circuit supplying power to the mechanical device.
 2. An alarm indicating the failure of a pump shall remain audible or visible until manually turned off.
 3. Where duplex-pumping equipment is employed to provide continuous component operation in the event that one pump fails, the pumps shall be installed in such a manner so as to provide the continuous operation automatically.
 4. The control panel and electrical panel shall be outside or in a location visible and accessible to the system maintainer and municipality personnel.
- C. Accessibility. The design of a system shall include provisions to provide access to all components that require maintenance and repair or observation.
- D. Anchoring system components. A treatment tank or holding component to be installed in an area subject to saturated conditions shall be installed so as to prevent flotation.
- E. Frost protection. All system components shall be designed for protection from freezing temperatures that could detrimentally affect component operation.
- F. Disposal field sizing. Wastewater disposal fields shall be sized according to the requirements of the following table:

EFFLUENT APPLICATION RATES

Soil Percolation	Category I	Category I	Category II	Category III
Rate (min./in.)	Trench	Bed	System	System
1—5	1.2 gal./day/ft ²	0.8 gal./day/ft ²	4 gal./day/ft ²	6 gal./day/ft ²
6—15	0.8 gal./day/ft ²	0.5 gal./day/ft ²	3 gal./day/ft ²	5 gal./day/ft ²
16—30	0.6 gal./day/ft ²	0.4 gal./day/ft ²	2 gal./day/ft ²	4 gal./day/ft ²
31—60	0.45 gal./day/ft ²	0.3 gal./day/ft ²	1 gal./day/ft ²	2 gal./day/ft ²
60—120	N/A	N/A	0.5 gal./day/ft ²	0.5 gal./day/ft ²

- G. The above application rates for Category II and Category III systems are valid for systems using a discharge pump or timed dosage only. Category II and Category III systems using gravity feed without timed dosage shall be allowed 50 percent of the above application rates.
- H. All categories must use a sand filter layer in gravel soils that have a percolation rate of less than one minute per inch.
- I. System rating. All AWWTS evaluated by the performance standards of this section shall have a category rating assigned by the department. The rating shall be determined by the sampling results, and the category limitations.
- J. The discharge of domestic wastewater to the ground surface is prohibited, including wastewater treated by any advanced treatment technology.
- (AO No. 2002-177, § 2, 2-14-03)

15.65.360 - Maintenance and repair.

- A. *General.* Due to the potential for degrading surface water and ground water quality or jeopardizing the public health, or both, routine maintenance and repair of AWWTS is required.
- B. *Advanced wastewater treatment systems maintenance and repair covenant to run with the land.* Pursuant to 15.65.370, and in order to assure maintenance and repair is performed in a timely manner, an AWWTS Maintenance and Repair Covenant to Run with the Land between the system owner and the municipality is required. A system designated as an advanced treatment system, whether category I, II or III, defined in 15.65.310, 15.65.320 and 15.65.330, shall meet this requirement.
- C. *Existing systems.* All existing advanced treatment systems installed prior to the passage of this ordinance shall be required to meet all maintenance and repair requirements required by this section. Existing maintenance and repair agreements on advanced treatment systems shall be replaced with an AWWTS Maintenance and Repair Covenant to Run with the Land between the system owner and the municipality.
- D. *Qualifications to perform maintenance and repair.* Individuals who perform maintenance and repair on advanced treatment systems must be certified by the system manufacturer as adequately trained and familiar with the treatment processes and maintenance and repair procedures for these specific systems.
- E. *Certification approval.* The municipality shall have the right to accept or reject a manufacturer's certification process for maintenance and repair personnel referenced in 15.65.350D. This certification process shall be approved by the municipality prior to the acceptance of a specific system design (type) for the annual testing program.
- F. *Revocation of AWWTS approval.* The municipality may revoke a manufacture's AWWTS approval if the manufacture fails to adequately maintain a sufficient certification process for maintenance and repair personnel pursuant to 15.65.350D and E.
- G. *Certificates.* The manufacturer shall issue a certificate to each individual trained to maintain AWWTS. This certificate shall be issued only after the individual has completed approved training by the manufacturer (or approved designee) for each type of advanced treatment system to be maintained. The certificate shall specifically list each type of AWWTS for which the holder has been trained and certified. A copy of this certificate shall be provided to the municipality. The municipality shall maintain a listing of all approved maintenance and repair personnel.

(AO No. 2002-177, § 2, 2-14-03)

15.65.370 - Covenant to run with the land required; application; contents.

- A. *Covenant to run with the land is required.* Before a permit, license or Certificate of On-Site Systems Approval can be issued for an AWWTS; a covenant to run with the land must be signed between the municipal manager or his designee and the system owner. The applicant shall enter into an AWWTS Maintenance and Repair Covenant to Run with the Land with the municipality in accordance with this chapter.

- 1 B. *Application.* Application for an AWWTS maintenance and repair covenant to run with
2 the land shall be made to the department. The application shall include a signed copy
3 of the AWWTS Maintenance and Repair Covenant to Run with the Land, a copy of
4 the standard specification guidebook for AWWTS, a proposed schedule of all
5 preventive maintenance and repair, and an engineer's estimate of the cost of each
6 required maintenance and repair item. The Municipality may require a showing of the
7 applicant's financial responsibility.
- 8 C. *Contents.* The AWWTS maintenance and repair covenant to run with the land shall
9 include but need not be limited to the following provisions:
- 10 1. A written schedule of proposed routine maintenance and repair to be performed
11 on the system at intervals which will be approved by the department and will be
12 based on the type of AWWTS contemplated by the applicant.
- 13 2. A binding list of fines or penalties that would be applied to the owner of the
14 AWWTS if the maintenance and repair provisions of the AWWTS covenant to run
15 with the land are not performed as scheduled.
- 16 3. The consent of the homeowner that only maintenance personnel certified by the
17 municipality will inspect and make any necessary repairs to the systems.
- 18 4. The consent of the homeowner allowing the municipality reasonable access to
19 test and inspect the system with 24 hours notice.
- 20 5. The consent of the homeowner that any sale or transfer of title of the property will
21 not occur without a Certificate of On-Site Approval and a new AWWTS
22 Maintenance and Repair Covenant to Run with the Land signed by the new owner
23 of the property.
- 24 6. The AWWTS Maintenance and Repair Covenant to Run with the Land shall
25 specifically adopt by reference the relevant provisions of the standard
26 specification guidebook for AWWTS and this chapter.
- 27 D. The department shall create and maintain a standard specification guidebook for
28 AWWTS. The standard specification guidebook for AWWTS shall include but need
29 not be limited to the following:
- 30 1. Specific maintenance intervals for the various approved AWWTS.
- 31 2. Specific information on the various types of AWWTS designed to assist the public
32 in the selection of an AWWTS and educate the public about the necessary
33 maintenance and repair and upkeep of AWWTS.
- 34 3. Health consequences for failure to perform routine maintenance according to the
35 required schedule.
- 36 4. Financial consequences for failure to perform routine maintenance according to
37 the required schedule.
- 38 5. Specific fines and penalties applied after specific number of days elapsed without
39 maintenance and repair being performed.

40 (AO No. 2002-177, § 2, 2-14-03)

MUNICIPALITY OF ANCHORAGE

Attachment B

Chapter 15.65 Summary of Significant Changes

Chapter sections reorganized: Chapter sections have been reorganized and renumbered to be more logical and chronologically consistent with the permitting/construction/approval process.

Amendments to Board duties (4.40.150): The powers and duties of the Board currently include providing guidance for the design, maintenance and regulation of onsite wastewater disposal systems to maintain public health and environmental quality, as covered under chapter 15.65. A primary intent of this code is protection of the aquifers that supply drinking water to Anchorage residents. AMC chapter 15.55 Water Wells regulates private water wells, which pose a risk to aquifers by creating a potential conduit for surface and subsurface water to contaminate the aquifer. Currently no board has clear oversight over AMC chapter 15.55. It should be noted that previous Assembly members have assumed the Board possesses this oversight. This ordinance adds oversight of AMC chapter 15.55 to the Board's duties. Additionally, this ordinance:

1. Deletes Board oversight of AMC chapter 21.67 Water Pollution Control because the Watershed and Natural Resources Advisory Commission currently possesses this authority under AMC chapter 4.90;
2. Modifies the composition of the Board by revising the requirement for a health professional position. The Board has not been able to fill this position; and
3. Remove Board duties.
 - a. **List of Engineers (4.40.150B.6.):** The department maintains a list of engineers who have completed an approved continuing education course. Engineers often complete this process in person at the MOA Permit Center, so making them go through the Board would make this process overly complicated.
 - b. **Annual Report (4.40.150B.10.):** Historically, the annual report has not been done and has not been requested by the Assembly. The slow evolution of on-site wastewater systems and the effect of their use on the environment does not warrant an annual report. The department recommends deleting this duty.

Continuing education for engineers (15.65.025A.): The requirement has been revised so that attendance at a department approved course is required every three years instead of two, to be consistent with certified installer requirements. There will be a small cost and time savings to the engineers and a small income loss to the MOA.

Current as-built survey or plot plan (15.65.050D.1. and 15.65.070F.):

Currently, this chapter requires a current as-built survey to be submitted whenever there is a title transfer of a property, which is often not simultaneous with system upgrades. The proposed chapter requires a survey or plot plan to be submitted with a permit application and an updated as-built survey to be submitted with the inspection report. This will shift the cost of getting a survey from the time of title transfer to the time of system permitting/installation.

Permit renewal fee (15.65.050H.2.): Currently, the first on-site systems permit renewal is free. The proposed chapter charges a renewal fee for each renewal, including the first. The purpose of the renewal fee is to cover staff time processing the renewal and confirming whether or not conditions have changed at the site since the initial permit submittal/review.

Waiver reduction: An attempt was made to reduce waiver requests by codifying acceptable exceptions that engineers can utilize. This will decrease the permit cost for many homeowners. This will be a loss of income for the MOA, but the reduced waiver paperwork will save the department time.

Inspections of on-site disposal system installations (15.65.070B.): The number of code-required inspections the engineer or their authorized representative (i.e. an engineer-in-training or technician) has to make for system installation has increased from two to four. One inspection was added prior to start of construction for the engineer, or authorized representative, to meet with the installer to discuss design requirements and to verify nothing has changed at the site that would affect the design. This will help avoid misinterpretation of the design which could result in delays in construction and/or a change order. Another inspection was added after the system has been backfilled to confirm adequate depth of cover over the tank and field and locations of all standpipes. This inspection was likely already being done in order for the engineer to accurately document the system to complete the inspection report and record drawings. The homeowner will have to pay for some additional engineering time, but it will offer more assurance that the system was installed as designed and permitted.

Wastewater disposal field to steep slope separation distance

(15.65.210B.1.d. and e. and 15.65.210B.4.): The current chapter requires all wastewater disposal fields to be a minimum of fifty feet uphill from a twenty-five percent (4 horizontal to 1 vertical) or steeper slope or a waiver request that demonstrates seepage of effluent is very unlikely. Language was added to the

chapter allowing wastewater disposal fields to be closer to or installed on a slope twenty-five percent or steeper, as long as specified conditions are met. The revision will continue to protect the public health and the environment, while allowing vacant properties with steep slopes to be developed and properties with septic systems requiring replacement to potentially be repaired at less expense.

Soil evaluation test holes (15.65.210C.): An exception has been added to the proposed chapter to allow use of existing documentation to demonstrate consistent soils in the area surrounding a lot in lieu of providing new test holes near a proposed disposal field. In areas that have very consistent soils, this revision will save the homeowner the cost of the test hole(s), including the installer cost of mobilization/demobilization.

Engineered Receiving Soil (ERS) (15.65.210D.3.c.): A section has been added to the chapter allowing wastewater disposal fields to be located above engineered fill, designed in accordance with the section, in order to meet separations to shallow bedrock, impermeable soils, and/or groundwater. The proposed section will allow some previously undevelopable property to be developed while continuing to protect the public health and the environment.

Monitoring tubes (15.65.210E.6.): A monitoring tube is a four-inch diameter plastic pipe that is installed vertically in the disposal field (from the bottom of the sewer rock to slightly above finished grade), used to monitor the effluent level in the disposal field. The proposed chapter increases the number of required monitoring tubes in order to identify the boundaries of the field when there is not a required cleanout that would serve this purpose. This applies to trenches that are not straight and pressurized systems that have a lift/pump station that pumps the effluent to a disposal field that is at a higher elevation than the tank outlet (less than a quarter of our permits). This will slightly increase the cost of a field install/replacement, but will eliminate costly exploratory digging when the field needs repair or replacement.

Topsoil (15.65.210E.10.): The proposed chapter decreases the required topsoil over a disposal field from six inches to four inches, which offers better stability and still provides adequate cover to promote vegetation. The four-inch requirement is consistent with what the Municipality requires on public works projects. This revision will save the homeowner material costs and will require less work for the installer.

Lift Station and Pump Vault Maintenance (15.65.235B.4.): The proposed chapter adds the requirement that lift stations and pump vaults be inspected and serviced at least every two years. This will only be verified at the time of title transfer, through the Certificate of On-site System Approval. The cost of the regular inspections and service will offset the costly replacement of a system that is not maintained.

Advanced Wastewater Treatment Systems (AWWTS) reduced separation requirements (15.65.355H. & I.): Reduced horizontal and vertical separation requirements are proposed for AWWTS's because of the higher quality effluent leaving the system. This could open up more land for development that the greater separations previously made cost prohibitive.

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MUNICIPALITY OF ANCHORAGE

Attachment C

Hillside District Plan Policy 13-L Recommendations for On-site Wastewater Code

Note: Plain text below is taken directly from Hillside District Plan Policy 13-L, with the exception that section numbers for the proposed code have been provided in parenthesis to facilitate cross referencing between the current and proposed codes. Italicized and underlined text is the determination and explanation provided by the department for each recommendation.

* * * * *

Policy 13-L

Revise the existing Wastewater Disposal section of the Anchorage Municipal Code to improve the construction and operation of on-site wastewater systems.

Background

Chapter 15.65 of the Anchorage Municipal Code, Wastewater Disposal, was reviewed in detail and compared to existing on-site water and wastewater system regulations in other states and countries. This plan recommends the following be considered when reviewing code changes to Title 15:

- 15.65.010 Definitions (15.65.010)
 - Modify Earth Privy to read, "Earth Privy means a device for the disposal of human excreta in an unlined pit in the earth."
Incorporated.
 - Modify insulation to read, "Insulation means two inches or more of high-density, direct-burial, closed-cell foam insulation or direct-bury approved equivalent non-degradable material of comparable insulation value, approved by the On-site Water and Wastewater Program."
Incorporated using a combination of the code definition and the "Standards and Specifications for Component Parts and Materials Used in Construction of On-site Wastewater Disposal Systems" (15.65.065).
 - Add a definition to read, "Treated Effluent (Wastewater) means effluent discharged from a watertight covered receptacle that

separates raw wastewater solids (floatables and settlables) and allows clarified effluent to exit."

Not incorporated in proposed chapter 15.65: not considered necessary.

• 15.65.050 Septic Tanks (15.65.205)

- 15.65.050C. – Revise the requirement for a four-inch standpipe from each compartment of a septic tank to require a minimum 24-inch diameter watertight riser to the finished grade above the tank for the first compartment. Risers shall be insulated with a minimum of four (4) inches of spray urethane to at least two (2) feet below ground level and have insulated locking (securable) lids. This facilitates ease of pumping and inspection for tank integrity during a COSA or drainfield upgrade (or any) inspection.

Not incorporated in proposed chapter 15.65: the department agrees with this recommendation and the justifications provided, but the added cost to the homeowner may be considered unacceptable. The estimated additional cost to add a manway riser to the first compartment of the septic tank would range from \$400 to \$720 for material plus \$250 to \$500 additional labor cost. If the Assembly agrees with this recommendation, subsection 15.65.205F.1. of the proposed code would be modified to include the requirement for a minimum twenty-four inch diameter manway riser, in lieu of a standpipe, serving the first compartment of the tank.

- Add a new subsection that disallows Cold Tar Pitch (TNEMEC) coating on steel septic tanks. A method to accomplish this may be to revise the requirements for septic tanks from two compartments to a single compartment, and add a S.T.I.P. coating that has a much greater resistance to corrosion and installation damage. An outlet filter would be required for any single-compartment septic tank.
Not incorporated in proposed chapter 15.65: the department agrees with this recommendation, but the added cost to the homeowner may be considered unacceptable. Although tanks can last longer under ideal conditions, experience has shown and the consensus within the industry is that the average life of a steel tank is fifteen to twenty years. EPA literature gives steel tanks less than ten years operational life due to corrosion, whereas fiberglass, plastic and concrete tanks are given an average life of fifty years. Requiring a steel tank to have a better corrosion resistant coating would raise the cost of a 1,000 gallon steel tank from \$1,565 to \$3,565. In comparison, a 1,000 gallon fiberglass tank has been quoted at \$2,500, a plastic tank at \$1,400, and a concrete tank at \$3,500. If the Assembly agrees with this recommendation, subsection 15.65.205H. would need to be added to the proposed code to read as follows: Septic tanks shall be constructed from durable, corrosion resistant

materials including concrete, fiberglass or plastic. Septic tanks constructed from steel shall be coated on both the interior and exterior with a polyurethane lining (ChemThane 4200 or approved equivalent).

• 15.65.060 Subsurface disposal fields (15.65.210)

- 15.65.060A.1.d. and f. – Change ten (10) feet to six (6) feet for wide drainfields and beds.

Incorporated for the field to field separation (15.65.210B.1.g), but the field to foundation separation was kept at ten feet (15.65.210B.1.i).

This is consistent with ADEC requirements and EPA recommendations.

- 15.65.060E.9. – Specify the width of insulation over the crown of pipe to be a minimum of 24 inches, centered over the pipe crown.

Not incorporated in proposed chapter 15.65: the current code requirement for pipe insulation appears to be working as intended with no known documented cases of pipes freezing due to the insulation not being centered over the pipe.

- 15.65.060E.11. – Add the following wording to the end of the subsection, "... and graded at minimum two percent (2%) slope to promote the run-off of precipitation and/or snow melt. All areas disturbed during the installation of the on-site wastewater system shall be reseeded with a seed mix approved by the department."
Not incorporated in proposed chapter 15.65: the current code requirement to add extra backfill to account for soil settlement over a drainfield and the requirement for seeding/vegetation on above-ground mounded systems appear to be adequate. The recommended revisions could potentially increase the installed cost of a septic system to the homeowner with what appears to be little benefit.

- 15.65.060H.5. – Change the maximum separation distance between perforated distribution laterals in a bed to three (3) feet.

Not incorporated in proposed chapter 15.65: current code allows distribution laterals in a bed to be three to six feet apart, which appears to be working with no known documented cases of bed type drainfields failing for this reason. This separation range is consistent with ADEC and EPA design guidelines and UPC requirements.

- 15.65.060J. – Add a new subsection titled "Drainfield Design Criteria" with the following subsections:
Incorporated.

- 15.65.060J.1. – All drainfields shall be designed to be dosed by either a siphon, pump or no more than 20 lineal feet of drainfield without an inlet from the septic tank.
Not incorporated in proposed chapter 15.65: current code allows a maximum drainfield segment length of 100 feet and requires that segments greater than 50 feet be entered at the midpoint. ADEC, EPA and UPC also allow a maximum 100 foot drainfield length. There is no documentation to suggest that long, gravity-fed drainfields fail sooner. Incorporating this recommendation would add cost and complexity to the system by introducing mechanical parts that could fail and fittings and flow-splitter valves that could clog.

- 15.65.080 Lift Stations (15.65.220)

- 15.65.080B. – Change the wording in the last sentence to read, “The alarm must be activated when the effluent level in the tank reaches a point where 150 gallons of capacity remains.”
Incorporated: recommended verbiage revised to achieve the same goal (15.65.220G).

- 15.65.170 Limited wastewater assessment-service districts

- Consider revising this section (in cooperation with planning and zoning changes and Title 21) to allow neighborhood wastewater systems where AWWU sewer service is not permitted by the Maximum Perimeter of Public Sewerage.
Not incorporated in proposed chapter 15.65: section was deleted because the State of Alaska has jurisdiction over these systems.

- 15.65.350 General Design Requirements (15.65.355)

- 15.65.350.B.4 – Add the following wording to the end of the sentence, “... and in a direct line of sight to the pump chamber manhole riser.”
Not incorporated in proposed chapter 15.65: existing verbiage considered acceptable and less restrictive (15.65.355B.4.).

- 15.65.360 Maintenance and repair (15.65.360)

- 15.65.360F. – Correct the spelling of “manufacturer’s.”
Incorporated.

Hillside District Plan Policy 13-L Conclusion: These changes could add approximately \$2,000 to the cost of installing a typical system, but the benefits should far outweigh the added costs. The trade-off for extending drainfield life lies in higher initial system capital costs and lower annual monitoring costs. While these improvements seem less glamorous than initial costs would suppose, they can more than pay for the higher installation costs over the life of the system.

Department Conclusion: We assume that the \$2,000 added cost stated above would include all the changes recommended by Policy 13-L. As reflected in our responses, the department agrees with incorporating the recommendations regarding septic tanks, but not with the recommendations regarding drainfields. Drainfields installed under current requirements are not known to negatively impact public health or environmental quality, as explained under each recommendation above. The tank changes would increase the initial system cost by a varying amount, depending on the tank material that is used. However the changes should more than double the life expectancy of the tank thus saving substantial money in the long term while better protecting the aquifer. We anticipate that as the local market adjusts to tanks constructed from corrosion resistant materials, tank prices will come down.

* * * * *