

Submitted by: Chairman of the Assembly
the Request of the Mayor

Prepared by: Department of
Development Services

For reading: December 10, 2002

CLERK'S OFFICE

APPROVED

Date: 1-14-03

ANCHORAGE, ALASKA

AO NO. 2002-177

AN ORDINANCE AMENDING ANCHORAGE MUNICIPAL CODE CHAPTER
15.65. TO DEVELOP COMPREHENSIVE AND SPECIFIC REGULATIONS FOR
ADVANCED ON-SITE WASTEWATER TREATMENT SYSTEMS AND
STANDARDS.

THE ANCHORAGE ASSEMBLY ORDAINS

Section 1. Anchorage Municipal Code Chapter 15.65. is hereby amended by adding
a new heading before section 15.65.005 to read as follows:

PART I. WASTEWATER DISPOSAL

Section 2. Anchorage Municipal Code Chapter 15.65. is hereby amended by adding
new sections to read as follows:

PART II. ADVANCED WASTEWATER TREATMENT SYSTEMS

15.65.200 Definitions.

Advanced Wastewater Treatment Systems (AWWTS) means all wastewater
disposal systems, designs or types, that use advanced technology to provide a
higher quality effluent than a conventional septic system as defined in 15.65.040
through 15.65.100.

CBOD₅ means Five Day Carbonaceous Biochemical Oxygen Demand

TN means Total Nitrogen

TP means Total Phosphorus

TSS means Total Suspended Solids

15.65.210 Regulation of AWWTS.

- 2 A. Refer to 15.65.005 for the general authority of the Municipality.
- 3
- 4
- 5 B The Municipality may reject, revoke, suspend or otherwise limit or restrict
- 6 a license, certificate or permit granted under this section if the Municipality
- 7 finds it to be in the best interest of the health, safety and welfare of the
- 8 citizens of the Municipality.
- 9
- 10 C. All design changes to AWWTS must be approved by the Municipality.
- 11
- 12 D. The Municipality may require specific AWWTS in areas it deems
- 13 necessary for the protection of groundwater resources and public health.
- 14

15 **15.65.220 AWWTS Selection and Acceptance Procedures.**

16

- 17 A AWWTS shall be regulated by their performance. The categories for
- 18 system performance are defined in 15.65.310, 15.65.320 and 15.65.330.
- 19
- 20 B The administration with the advice of the On-Site Systems Technical
- 21 Review Board shall determine:
- 22
- 23 1 *Selection of proposed systems:* The designs (types) of systems
- 24 selected for testing under this program.
- 25
- 26 2. *Number of designs (types) of systems to be tested:* The number of
- 27 different designs (types) of systems selected for testing during any
- 28 one annual period. This number may vary depending on staffing
- 29 levels within the department, complexities of systems, numbers of
- 30 individual systems tested and other variables.
- 31
- 32 3. *Number of systems of each design (type) to be tested:* Testing shall
- 33 occur on a predetermined number of systems of each design (type)
- 34 proposed and shall range from 2 to 5 individual systems. This
- 35 number may be based on the complexity of the system, the number
- 36 and locations of any other systems currently operating, the projected
- 37 reliability of the system and other considerations.
- 38
- 39 4. *Acceptance procedures:* Following the annual testing period, the
- 40 design (type) shall either be approved for standard construction
- 41 permitting and installation within the Municipality under one of the
- 42 categories defined in 15.65.310, 15.65.320 and 15.65.330, or the
- 43 system shall be rejected for use with the Municipality. Acceptance
- 44 or rejection shall be based on sampling results, general performance

and reliability of the system and other considerations deemed important by the department. A system passing all testing requirements for category I, II or III defined in 15.65.310, 15.65.320 and 15.65.330 and functioning adequately for the entire annual testing period shall be accepted for general use in the Municipality.

- C. A system selected for the testing program that does not meet the requirements for a category II or category III, defined in 15.65.320 and 15.65.330, may be accepted as an AWWTS for installation as a category I system, defined in 15.65.310, 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 12 consecutive months.

15.65.230 Appeal of Rejection or Category Classification.

- A. Following the annual testing period, the system representative may request a hearing on the rejection or category classification of the AWWTS system. The hearing shall be conducted pursuant to chapter 3.60 of this Code. Justification for the rejection or classification shall be determined by the department and must be in writing.
- B. Any decision to reject, revoke, suspend or otherwise limit or restrict a license, certificate or permit granted under this section shall be effective immediately and is final.

15.65.240 General Requirements for All Sampling Procedures.

- A. Qualified disinterested individuals must conduct all sampling. The department shall maintain a list of qualifications required of those individuals who will conduct the sampling.
- B. A sampling schedule shall be submitted to the department for approval prior to the start of the annual sampling period. Deviations from this proposed schedule shall receive prior 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.

- 2 D. All samples shall be delivered to a laboratory certified by the State of
3 Alaska for each parameter tested. A copy of the results of all samples shall
4 be mailed directly to the department by the laboratory.
- 5 E. A portion of the annual sampling program may be conducted a second time
6 with the prior approval of the department. Approval shall be granted based
7 on valid reasons for discarding the first sample results. The justification for
8 re-sampling shall be determined by the department.
- 9 F. All sampling shall be approved by the department and accomplished
10 according to accepted industry standards and procedures.

11
12
13 **15.65.250 Specific Requirements for All Sampling Procedures**

- 14
15 A. All systems selected for testing as an AWWTS shall undergo a one-year
16 minimum sampling program. The sampling regimen shall meet the
17 following requirements:

18
19 1. CBOD₅ and TSS. The arithmetic mean of the CBOD₅ and TSS
20 values for the effluent samples collected (whether grab or composite technique is
21 used) during a sampling period shall meet requirements in 15.65.310, 15.65.320
22 and 15.65.330.

23
24 a. *Year Long Sampling:* A minimum of 12 consecutive monthly
25 samples shall be collected approximately 30 days apart. One
26 sample result from subsection 15.65.250.A.1.b, Month Long
27 Sampling, may be used as one of the 12 monthly samples
28 required by this paragraph.

29
30 b. *Month Long Sampling:* A minimum of 4 consecutive weekly
31 samples shall be collected approximately seven days apart.
32 One sample result from subsection 15.65.250.A.1.c, Week
33 Long Sampling, may be used as one of the four monthly
34 samples required by this paragraph.

35
36 c. *Week Long Sampling:* A minimum of seven daily samples
37 shall be collected on a separate day of seven consecutive
38 days.

39
40 2. Fecal Coliform The geometric mean of the fecal coliform values
41 collected during a sampling period shall meet the requirements in 15.65.310,
42 15.65.320 and 15.65.330.
43

- a. *Year Long Sampling:* A minimum of 12 consecutive monthly samples shall be collected approximately 30 days apart. One sample result from 15.65.250.A.2.b Month Long Sampling, may be used as one of the 12 monthly samples required by this paragraph.
- b. *Month Long Sampling:* A minimum of 4 consecutive weekly samples shall be 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.

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:

	CBOD ₅	300 mg/l
2.	TSS	250 mg/l.
3.	TN	60-80 mg/l
4.	TP	15 mg/l.
5	Fecal Coliform	1.5x10 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.

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.

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

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

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.

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 Rate (min/in)	Category I Trench	Category I Bed	Category II System	Category III 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% 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 1 minute per inch.

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.

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 manufacturer's AWWTS approval if the manufacturer 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.

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.
- B. *Application.* Application for an AWWTS Maintenance and Repair Covenant to Run with the Land shall be made to the department. The application shall include a signed copy of the AWWTS Maintenance and Repair Covenant to Run with the Land, a copy of the standard specification guidebook for AWWTS, a proposed schedule of all preventive maintenance and repair, and an engineer's estimate of the cost of each required maintenance and repair item. The Municipality may require a showing of the applicant's financial responsibility.
- C. *Contents.* The AWWTS Maintenance and Repair Covenant to Run with the Land shall include but need not be limited to the following provisions:
- A written schedule of proposed routine maintenance and repair to be performed on the system at intervals which will be approved by the department and will be based on the type of AWWTS contemplated by the applicant.
 2. A binding list of fines or penalties that would be applied to the owner of the AWWTS if the maintenance and repair provisions of the AWWTS covenant to run with the land are not performed as scheduled.
 3. The consent of the homeowner that only maintenance personnel certified by the Municipality will inspect and make any necessary repairs to the systems.
 4. The consent of the homeowner allowing the Municipality reasonable access to test and inspect the system with 24 hours notice.

5. The consent of the homeowner that any sale or transfer of title of the property will not occur without a Certificate of On-Site Approval and a new AWWTS Maintenance and Repair Covenant to Run with the Land signed by the new owner of the property.

6. The AWWTS Maintenance and Repair Covenant to Run with the Land shall specifically adopt by reference the relevant provisions of the standard specification guidebook for AWWTS and this chapter.

D. The department shall create and maintain a standard specification guidebook for AWWTS. The standard specification guidebook for AWWTS shall include but need not be limited to the following:

Specific maintenance intervals for the various approved AWWTS.

2. Specific information on the various types of AWWTS designed to assist the public in the selection of an AWWTS and educate the public about the necessary maintenance and repair and upkeep of AWWTS.

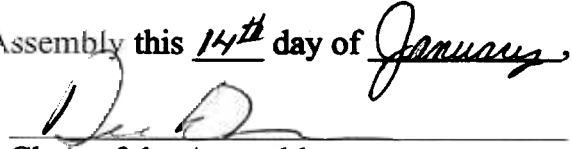
3. Health consequences for failure to perform routine maintenance according to the required schedule.

4. Financial consequences for failure to perform routine maintenance according to the required schedule.

5. Specific fines and penalties applied after specific number of days elapsed without maintenance and repair being performed.

Section 3. This ordinance shall become effective on the 31st day after its passage and approval by the Assembly.

PASSED AND APPROVED by the Anchorage Assembly this 14th day of January, 2003.


Chair of the Assembly

ATTEST:


Municipal Clerk

Acting

MUNICIPALITY OF ANCHORAGE
Summary of Economic Effects -- General Government

AO Number: 2002- 177

Title: An ordinance amending Anchorage Municipal Code Chapter 15.65 to develop comprehensive and specific regulations for advanced on-site wastewater

Sponsor:

Preparing Agency:

Others Impacted:

CHANGES IN EXPENDITURES AND REVENUES:		(In Thousands of Dollars)			
	FY02	FY03	FY04	FY05	FY06
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	0	0	0	0	0

PUBLIC SECTOR ECONOMIC EFFECTS:

This amendment will allow testing of all advanced technology wastewater systems to be done in a standard format. It will also expedite the testing and acceptance period for these systems by standardizing the procedure.

PRIVATE SECTOR ECONOMIC EFFECTS:

This amendment will allow advanced on-site wastewater treatment systems to be tested, evaluated and accepted by the MOA in an easily defined standard procedure. It will allow for new technologies to be utilized quicker and easier. These new technologies will allow some properties that are now considered non-developable with on-site systems to be developed. It will also make it easier for homeowners on expensive holding tanks to install a new technology system, thus eliminating both the expense and health risk of a holding tank.

Prepared by:	<u>James Cross</u>	Telephone: <u>343-7906</u>
Validated by OMB:	<u></u>	Date: <u></u>
Approved by:	<u></u> (Director, Preparing Agency)	Date: <u></u>
Concurred by:	<u></u> (Director, Impacted Agency)	Date: <u></u>
Approved by:	<u></u> (Municipal Manager)	Date: <u></u>

MUNICIPALITY OF ANCHORAGE

ASSEMBLY MEMORANDUM

No. AM 1009-2002

Meeting Date: December 10, 2002

1 From: Mayor

2
3 Subject: AO 2002-177 ; Amending Anchorage Municipal Code Chapter 15.65 to
4 Develop Comprehensive and Specific regulations for Advanced On-Site
5 Wastewater Treatment Systems.
6

7 Anchorage Municipal Code Chapter 15.65.130 states that the MOA shall “encourage
8 development of alternative methods of on-site wastewater disposal systems”. This code
9 addendum creates comprehensive and specific regulations for testing and installing all
10 advanced wastewater treatment systems, and categorizes systems according to their
11 effluent quality. Testing and approval methods for these systems are standardized, and
12 this addendum allows all systems to be tested and evaluated equally.
13

14 This code addendum has been reviewed and approved by the On-Site Wastewater
15 Systems Technical Review Board.
16

17 Prepared by: Joe Murdy, Director, Department of Development Services
18

19 Concur : Craig E. Campbell, Executive Director, Office of Planning,
20 Development and Public Works
21

22 Concur: Harry J. Kieling, Jr., Municipal Manager
23

24 Respectfully submitted: George P. Wuerch, Mayor

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 User Profile

- Portal Design
- Subscriptions for cabanh
- Workflow In Queue for cabanh

Content Manager

New Check In

Ordinance



- Checked Out Content
- Content Checked Out By User
- Work In Progress
- Active Workflows

Work Flow History Report

AO 2002-177

Workflow History

Workflow Name	Action Date	Action	User	Security Group	Content ID
AllOrdinanceWorkflow	11/4/02 3:43 PM	Checkin	gonzalezv	Public	000349
Dev_Svs_SubWorkflow	11/6/02 8:33 AM	Approve	murdyjw	Public	000349
AllOrdinanceWorkflow	11/6/02 9:44 AM	Reject	campbellce	Public	000349
AllOrdinanceWorkflow	11/6/02 10:13 AM	Checkin	gonzalezv	Public	000349
AllOrdinanceWorkflow	11/7/02 1:30 PM	Checkin	gonzalezv	Public	000349
Dev_Svs_SubWorkflow	11/13/02 9:18 AM	Approve	murdyjw	Public	000349
AllOrdinanceWorkflow	11/13/02 9:25 AM	Reject	campbellce	Public	000349
AllOrdinanceWorkflow	11/13/02 10:04 AM	Checkin	gonzalezv	Public	000349
Dev_Svs_SubWorkflow	11/13/02 10:22 AM	Approve	murdyjw	Public	000349
PDPW_SubWorkflow	11/13/02 10:45 AM	Approve	campbellce	Public	000349
HHS_SubWorkflow	11/13/02 12:48 PM	Approve	jonesjl	Public	000349
AllOrdinanceWorkflow	11/19/02 11:43 AM	Reject	frascacl	Public	000349
AllOrdinanceWorkflow	11/19/02 2:38 PM	Checkin	gonzalezv	Public	000349
Dev_Svs_SubWorkflow	11/20/02 8:23 AM	Approve	murdyjw	Public	000349
PDPW_SubWorkflow	11/20/02 10:29 AM	Approve	campbellce	Public	000349
HHS_SubWorkflow	11/21/02 12:54 PM	Approve	jonesjl	Public	000349
OMB_SubWorkflow	11/21/02 4:48 PM	Approve	frascacl	Public	000349
Legal_SubWorkflow	11/21/02	Approve			

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A U M
F U L L
T I M E

	5:27 PM					
MuniManager_SubWorkflow	11/25/02 2:28 PM	Approve	kielinghj	Public	000349	(
MuniMgrCoord_SubWorkflow	11/25/02 2:56 PM	Approve	bealejl	Public	000349	(

INTRODUCTION