

Appendix B

WATER OPERATOR CERTIFICATION SUMMARY Chapter 9400

In accordance with Minnesota Statutes, Section 115.71 to 115.77; a person may not operate a water supply system or wastewater treatment facility unless the system or facility maintains at least one person that:

- (1) is certified in a class equal to or higher than the class of the system; and
- (2) has full and active responsibility for the operation of a portion of, or all of, a system and is on-site or is able to be contacted as needed to initiate any appropriate action in a timely manner.

DEFINITIONS

1. **Contact Hour.** “Contact Hour” means 50-60 minutes of lecture, demonstration, workshop, or continuing education or training, excluding coffee breaks, registration, meals, and social activities.
2. **Department.** “Department” means the Minnesota Department of Health.
3. **Direct Responsibility.** “Direct Responsibility” means the water or wastewater operator having full and active responsibility for the operation of a portion of, or all of, a system, facility, or wastewater collection system.
4. **Facility.** “Facility” means wastewater treatment facility as defined in Minnesota Statutes, section 115.71.
5. **Management.** “Management” means persons who direct or supervise the operation of a system or facility. Management also refers to shift operators who make operational decisions or operate systems or facilities without supervision from a supervisor.
6. **Operation.** “Operation” means the routine performance of duties at a system or facility to achieve results that meet existing state laws and rules pertaining to water and wastewater.
7. **System.** “System” means a water supply system as defined in Minnesota Statutes, section 115.71.
8. **Point-of-entry treatment device.** “Point-of-entry treatment device” means a treatment device applied to the drinking water entering a house or building for the purpose of reducing contaminants in the drinking water distributed throughout the house or building.
9. **Point-of-use treatment device.** “Point-of-use treatment device” means a treatment device applied to a single tap used for the purpose of reducing contaminants in drinking water at that one tap.

CERTIFICATION

- A. A water operator certificate to operate a community public water supply system must be issued by the commissioner of health.
- B. A wastewater operator certificate to operate a wastewater treatment facility must be issued by the commissioner of the pollution control agency.
- C. A city manager, superintendent of public works, or other administrative official is not eligible to be certified as an operator unless that person’s duties include the operation of the system or facility.

CLASSIFICATION OF SYSTEMS

Basis. The classification of all systems must be based on the degree of hazard to the public health, together with the type and capacity of the system and the population affected.

Operator availability. All systems must have a certified water supply system operator as specified in Minnesota Statutes, section 115.71, subdivision 10, and 115.73. This person, or an operator certified at the same level or above, must be available on site or be able to be contacted as needed to initiate an appropriate action in a timely manner.

Rating values. The classification of a system is based on the following rating values:

	<u>POINTS</u>
A. <u>Water Supply Source</u>	
1. Groundwater	5
2. Surface Water	15
B. <u>Treatment Processes</u>	
1. <u>Groundwater Source</u>	
a. aeration	2
b. chemical precipitation (Softening including filtration)	16
c. filtration other than after softening process	10
d. ion exchange	5
e. chlorination	5
f. chemical oxidation	2
g. stabilization	2
h. air stripping	5
i. carbon contactors	5
j. fluoridation	5
k. ammonia addition	5
l. taste and odor control	2
m. ozonation	8
n. membrane filtration	10
o. chlorine dioxide	8
p. unlisted new technologies (based on relative complexity)	3-10
2. <u>Surface Water Source</u>	
a. ozonation	8
b. coagulation	10
c. sedimentation	5
d. filtration	10
e. chlorination	5
f. ion exchange	5
g. chemical oxidation	2
h. carbon contactors	5
i. stabilization	2
j. membrane filtration	10
k. fluoridation	5
l. ammonia addition	5
m. taste and odor control	2
n. chlorine dioxide	8
o. unlisted new technologies (based on relative complexity)	3-10

- D. Distribution Storage Capacity
 - 1. 0 to 5,000 gallons 1
 - 2. 5,001 to 50,000 gallons 2
 - 3. 50,001 to 500,000 gallons 3
 - 4. 500,001 to 5 MG (million gallons) 4
 - 5. Over 5 MG 5

- E. Number of Wells
 - 1. 1 to 3 2
 - 2. 4 to 7 4
 - 3. 8 to 15 6
 - 4. Over 15 8

- F. Population Affected
 - 1. 0 to 1,000 persons 2
 - 2. 1,001 to 5,000 persons 5
 - 3. 5,001 to 10,000 persons 11
 - 4. 10,001 to 20,000 persons 20
 - 5. 20,001 to 50,000 persons 32
 - 6. 50,001 to 100,000 persons 47
 - 7. 100,001 persons and over 70

Accumulated value. The accumulated point values for systems are as follows:

<u>Class of Water Supply Systems</u>	<u>Accumulated Point Value</u>
a. Class A	76 or more
b. Class B	56 to 75
c. Class C	31 to 55
d. Class D	30 or less points; and
e. Class E	regardless of point values, any system comprised of a groundwater source with no treatment other than point-of-entry or point-of-use treatment devices not used for compliance with the federal Safe Drinking Water Act, United States Code, title 42, sections 300f to 300j-26 (1996 and subsequently amended), serving a maximum of 500 persons.

QUALIFICATIONS FOR CERTIFICATION OF WATER SUPPLY SYSTEM OPERATORS

In order to be certified, an applicant must

1. have full and active responsibility for the operation of a portion or, or all of, a system;
2. meet the qualifications as specified below; and
3. pass an examination.

A Class A applicant must

- A. have been certified as a Class B operator for at least two years, and
- B. have
 1. a high school diploma or equivalent with at least eight years experience in the operation, including at least two years as part of the management, of a Class A or B system; or
 2. a bachelor's degree from an accredited institution in chemical, civil, environmental, mechanical, or sanitary engineering or in a physical or biological

science, and submit satisfactory evidence of at least four years experience in the operation, including at least two years as a part of the management, of a Class A or B system.

A Class B Certificate applicant must

- A. have been certified as a Class C operator for at least one year; and
- B. have
 - 1. a high school graduate or equivalent with at least six years of experience in the operation of a Class A, B, or C system; or
 - 2. a bachelor's degree from an accredited institution in chemical, civil, environmental, mechanical, or sanitary engineering or in a physical or biological science, and submit satisfactory evidence of at least two years experience in the operation of a Class A, B, or C system.

A Class C applicant must

- A. have a high school graduate with at least three years of experience in the operation of a Class A, B, C or D system; or
- B. have a bachelor's degree from an accredited institution in chemical, civil, environmental, mechanical, or sanitary engineering or in a physical or biological science, and submit satisfactory evidence of at least one year experience in the operation of a Class A, B, C, or D system.

A Class D applicant must

- A. have a high school graduate or equivalent; and
- B. have
 - 1. at least one year of experience in the operation of a Class A, B, C, or D system;
 - 2. or satisfactorily completed a post-secondary program of courses in water technology at an accredited institution.

A Class E applicant must

- A. have a high school diploma or equivalent; and
- B. have
 - 1. at least three months experience in the operation of a Class A, B, C, D, or E system or facility, or in a related field; or
 - 2. satisfactorily completed a postsecondary program of courses in water or wastewater technology approved by the respective agency or department at an accredited institution.

Substitutions for Qualifications

When a person applies for a certificate to operate a water supply system, at least 50% of the experience required for the class of certificate requested must have been obtained in a system. The other 50% may be obtained in a facility, but not in a Type S facility. The classification of the Type S or system operated must not be more than 1 class below the class of certificate requested. A person who applies for a Class A, B, or C certificate may substitute education for experience according to the formula below.

- A. Except as noted in item B, the experience required will be reduced by one month for the successful completion of 40 contact hours of correspondence courses or other courses relating to water supply or wastewater treatment from an accredited institution in chemical, civil, environmental, mechanical or sanitary engineering, or in the physical or biological sciences.
- B. In no event shall such education be substituted for experience so as to reduce the experience to less than one year.

One year of experience in the operation of a system or facility may be considered as equivalent to one year of high school. Experience that is substituted for education cannot also be used to satisfy the experience requirements.

APPLICATION FOR EXAMINATION

1. **Form and time.** Application for examination must be made in writing to the commissioner of health for certification to operate a system or to the commissioner of the pollution control agency for certification to operate a facility on a prescribed form issued by the department or agency administering the examination. The application for examination must be submitted at least 15 days before the date on which the examination will be given.
2. **Proof of attendance.** The applicant may be required to submit a copy of the school or college diploma, equivalency certificate, or other proof of school or college attendance or graduation if the applicant is substituting educational experience for operating experience.
3. **Examination fee.** A nonrefundable examination fee must accompany the application.
4. **Application for examination.** An applicant who applies for examination but fails to satisfy all the conditions prescribed in parts 9400.0100 to 9400.1500 may reapply for examination as described in subparts 1 to 3 when all conditions are satisfied.

EXAMINATIONS

Preparation. The respective commissioner shall prepare the examinations to be used in determining the knowledge, ability, and skills of operators.

Examination. Separate examinations must be prepared for each designated system and facility class to cover basic differences in the duties and responsibilities of operators, types of water and wastewater treatment, variations in water and wastewater characteristics, water distribution systems, and wastewater collection systems. The examination must test the applicant's knowledge in any one or more of the following areas, as they relate to either water or wastewater treatment: basic science, mathematics, operating procedures, treatment processes, equipment, equipment maintenance, management, and state law and rules relating to water and wastewater. The applicant is prohibited from using any resource materials during an examination.

Passing. A grade of 70 percent is considered a passing grade.

Results; review. The respective commissioner shall notify the applicant of the exam results. Examinations will not be returned to the applicant, but upon request within 60 days' notification of the results, the applicant may be allowed to review the examination.

Reexamination. An applicant who fails to pass the examination may not retake the same examination for a period of three months.

Certificate fee. The applicant must submit the certification fee within 90 days after written notification of positive results of the examination. If an applicant fails to submit the certification fee within 90 days, the applicant must apply for reexamination as in part 9400.0900.

ISSUANCE OF CERTIFICATES

Certificates shall be issued by the commissioner of health for water operators certificates, or the commissioner of the pollution control agency for wastewater operator certificates, when all the conditions prescribed in parts 9400.0100 to 9400.1500 have been satisfied.

RENEWAL OF CERTIFICATES

Water operator certificate renewal: When a person applies to renew a water operator certificate, at least 50 percent of the contact hours required for renewal must be from water-related courses approved by the commissioner of the department. The other 50 percent may be from wastewater or other related courses approved by the commissioner of the department, provided that the course or portion of the course has been approved by the commissioner of health.

A certificate in any given classification must be renewed within 30 days of its expiration date. A renewal certificate will be issued upon receipt of the application, renewal fee and evidence of the fact that the operator has, during the preceding three years, obtained credit for the number of hours specified in the following schedule:

Class A,	32 contact hours;
Class B,	24 contact hours;
Class C,	16 contact hours;
Class D,	8 contact hour;
Class E,	4 contact hours.

FEES

Fees for certification shall be as follows: (as of July 1995)

- Application for examination (non-refundable)	\$32.00
- Issuance of certificate	\$23.00
- Re-examination resulting from failure to pass an examination	\$32.00
- Renewal of certificate	\$23.00
- Replacement certificate	\$10.00
- Reinstatement or reciprocity certificate	\$40.00

The following is some information about the exam that may make you a little less apprehensive. Use your common sense when studying for the exam. We do not write the exams to try and fail people. We try to make them as fair and practical as possible.

If a person is familiar with how the exam is conducted he/she will be more comfortable with the exam process and thus more likely to pass the exam. This list will help familiarize you with the certification exam.

1. All exams are 50 questions. Each question is worth two points. A score of 70 or above is passing.
2. All questions are multiple choice except for math problems. The number of math problems on a specific exam are as follows:

Class D	7
Class C	7
Class B	9
Class A	11

You will receive partial credit on the math problems, so make sure you show all of your work. It could mean the difference between passing and not passing.

3. You will be given two hours to complete the exam. This has proven to be plenty of time for people to complete the exam.
4. The exam is a closed-book exam. All equations and conversions needed in the math will be given at the front of the exam booklet. No need to memorize those equations!
5. The percentage of people passing a given exam is very good. Taken over a four year period, they range as follows:

Class D	86 – 93%
Class C	72 – 78%
Class B	63 – 83%
Class A	60 – 89%

SUBJECTS COVERED ON THE WATERWORKS OPERATOR CERTIFICATION EXAM

Test areas covered on each exam are indicated by an “X” under the exam level column. The approximate number of math questions for each level is indicated.

<u>Test Area</u>	<u>Exam Level</u>			
	A	B	C	D
<u>MATH</u>	11	9	7	7
<u>RULES AND STANDARDS</u>				
Health Department Construction Standards	X	X	X	X
Safe Drinking Water Act	X	X	X	X
<u>SOURCES</u>				
Water Source	X	X	X	X
Wells and Pumps	X	X	X	X
<u>TREATMENT</u>				
Disinfection	X	X	X	X
Fluoridation	X	X	X	X
Aeration	X	X	X	
Coagulation	X	X		
Sedimentation	X	X		
Filtration	X	X	X	
<u>TREATMENT</u>				
Chemical Precipitation Softening	X	X		
Zeolite Softening	X	X	X	
Taste and Odor Control	X	X	X	X
<u>DISTRIBUTION</u>				
Pipes	X	X	X	X
Valves	X	X	X	X

Hydrants	X	X	X	X
Storage	X	X	X	X
Plumbing and Cross-Connections	X	X	X	X
<u>WATER CHARACTERISTICS</u>				
General Properties of Water	X	X	X	X
Chemistry	X	X	X	X
Bacteriology	X	X	X	X
Corrosion	X	X	X	X
<u>GENERAL</u>				
Operation and Maintenance	X	X	X	X
Safety	X	X	X	X

REINSTATEMENT AND RECERTIFICATION

Application. A person whose certificate has expired may apply to the commissioner of health, for reinstatement of a water operator certificate, or to the commissioner of the pollution control agency for reinstatement of a wastewater operator certificate. An applicant's certificate may only be reinstated to the class of the certificate which had expired. Before a certificate will be issued, such person must submit the following: the application for reinstatement; the nonrefundable fee for a reinstatement certificate; and evidence of the fact that the person has complied with the continuing education requirements imposed in part 9400.1200, subpart 1, during the entire time since the expired certificate was last used or renewed.

Denial. A person who is denied reinstatement who wants to be recertified must follow the procedures for a new applicant specified in parts 9400.0900 and 9400.1000. The nonrefundable reinstatement fee shall be considered the fee for application of examination.

Time. A person may apply for reinstatement up to one year after expiration of the previous certificate. If more than one year has elapsed from the expiration of the certificate, a person must apply for the certificate as specified in parts 9400.0900 and 9400.1000.

Reinstatement after suspension. The commissioner of health of the commissioner of the pollution control agency respectively will reinstate a suspended certificate if the individual whose certificate has been suspended fulfills the terms of the suspension order and meets all applicable requirements of the rules for obtaining a certificate.

Revocation. An individual whose certificate has been revoked according to Minnesota Statutes, section 144.99, subdivisions 8 to 10, may not apply for certification before the expiration date of the revocation order or for at least one year following the written notice of revocation.

RECIPROCITY

According to Minnesota Statutes, section 115.76, when a person who has a certificate in another state applies for certification as a water or wastewater operator, a determination will be made by the respective commissioner as to whether the applicant is eligible for certification and for what class of facility or system. The certification requirements of the other state must not be in conflict with Minnesota Statutes, section 115.71 to 115.77, and must be of a standard not lower than those in this chapter.

A. If the certification requirements of the other state are not in conflict with Minnesota Statutes, section 115.71 to 115.77, and are of a standard not lower than those in this chapter, the applicant must be granted a certificate.

B. If the certification requirements of the other state are in conflict with Minnesota Statutes, section 115.71 to 115.77, and are of a standard lower than those in this chapter, the applicant

must be notified in writing by the respective commissioner of those areas which were not equivalent and what, additionally, the applicant must do to meet the standards in this chapter.

C. The nonrefundable reciprocity fee shall be considered the fee for application of examination if the applicant is denied a certificate through reciprocity.

CONDITIONAL CERTIFICATE

Conditions and renewal. The operator of a system or facility which is reclassified to a higher class pursuant to part 9400.0600 may be issued a conditional certificate in the higher class. A conditional certificate must be issued upon application, without examination, and shall be effective for three years from the date of issue. A conditional certificate must be renewed as specified in part 9400.1200. A conditional certificate must specify that the operator named therein is certified to operate only the system or facility for which the conditional certificate is issued.

Certification limits. No conditional certificate will be granted if reclassification was the result of an alteration to the system or facility.

Nontransient noncommunity systems.

A. An operator who has exercised direct responsibility for a nontransient noncommunity water system before October 1, 2001, is eligible to receive a conditional certificate for that system. The application for the conditional certificate must be submitted by the owner of the nontransient noncommunity system at which the operator exercises direct responsibility.

B. An application for a conditional certificate under item A must be submitted by the owner of a nontransient noncommunity water system before October 1, 2003.

C. A person assuming direct responsibility for a nontransient noncommunity system on or after October 1, 2001, is not eligible for a conditional certificate and must apply for a certificate according to part 9400.0700.

Notes: