

**TITLE 18. ENVIRONMENTAL QUALITY**

**CHAPTER 5. DEPARTMENT OF ENVIRONMENTAL QUALITY**

**ENVIRONMENTAL REVIEWS AND CERTIFICATION**

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**ARTICLE 1. CLASSIFICATION OF TREATMENT PLANTS**

**AND CERTIFICATION OF OPERATORS**

**R18-5-101. Definitions**

The terms in this Article have the following meanings:

"Certified operator" or "operator" means an individual who holds a current certificate issued by the Department in the field of water or wastewater treatment, water distribution, or wastewater collection, and is responsible for the daily on-site operation or the remote operation from a central location of all or a part

of a facility.

"Collection system" means a pipeline or conduit, a pumping station, a force main, or any other device, or appurtenance used to collect and conduct wastewater to a central point for treatment and disposal.

"Department" means the Department of Environmental Quality or its designated representative.

"Director" means the Director of the Department of Environmental Quality or the Director's designated representative.

"Direct responsible charge" means day-to-day decision-making responsibility for a facility or a major portion of a facility.

"Distribution system" means a pipeline, appurtenance, or device of a public water system that conducts water from a water source or treatment plant to consumers for domestic or potable use.

"Facility" means a water treatment plant, wastewater treatment plant, distribution system, or collection system.

"Industrial waste" means the liquid, gaseous, or solid waste produced at an industrial operation.

"On-site operator" means an operator who visits a facility at least daily to ensure that it is operating properly.

"On-site representative" means a person located at a facility who monitors the daily operation at the facility and maintains contact with the remote operator regarding the facility.

"Operator" has the same meaning as certified operator, defined in this Section.

"PDH" means professional development hour.

"Population equivalent" means the population that would contribute an equal amount of biochemical oxygen demand (BOD) computed on the basis of 0.17 pounds of five-day, 20-degree centigrade BOD per capita per day.

"Professional development hour" means one hour of participation in an organized educational activity related to engineering, biological or chemical sciences, a closely related technical or scientific discipline, or operations management.

"Public water system" has the same meaning prescribed in A.R.S. § 49-352.

"Qualifying experience" means experience, skill, or knowledge obtained through prior employment that is applicable to the technical or operational control of all or part of a facility.

"Qualifying discipline" means engineering, biology, chemistry, or a closely related technical or scientific discipline.

"Qualifying experience" means operational experience, related experience, and supervisory experience.

"Remote operator" means an operator who is not an on-site operator.

"Validated examination" means an examination that is approved by the Department after being reviewed to ensure that the examination is based on the class and grade of a system or facility.

"Wastewater" means sewage, industrial waste, and all other waterborne waste that may pollute any lands or waters of the state.

"Wastewater treatment plant" means a process, device, or structure used to treat or stabilize wastewater or industrial waste and dispose of the effluent.

"Water treatment plant" means a process, device, or structure used to improve the physical, chemical, or biological quality of the water of in a public water system.

**R18-5-102. Applicability**

- A. The rules in this Article apply to owners and operators of facilities in Arizona.
- B. The following facilities are exempt from the requirements of this Article:
  - 1. A public water system that meets the nonapplicability criteria in R18-4-102.
  - 2. A septic tank or collection system that discharges to a septic tank.
  - 3. A collection system that serves 2,500 or fewer persons and discharges into a facility that is operated by a certified operator.
  - 4. A collection system that serves a nonresident population and discharges into a collection system operated by a certified operator.
  - 5. An irrigation system, an industrial water facility, or a similar facility in which water is not used for domestic or drinking purposes.
  - 6. An irrigation or industrial wastewater facility used to treat, recycle, or impound industrial or agricultural wastes within the boundaries of the industrial or agricultural property.
  - 7. An industrial waste pretreatment facility in which treated wastewater is released to a collection system or wastewater treatment plant that is regulated by this Article.
  - 8. A facility for treating industrial wastes that are not treatable by biological means.
  - 9. A facility used to impound surface water before the water is conducted to a water treatment plant.
  - 10. A wastewater treatment device that serves a home.

**R18-5-103. Certification Committee**

- A. Upon the effective date of this rule, the Director shall establish a certification committee to make recommendations and to provide the Department with technical advice and assistance related to this Article when requested.
- B. The certification committee shall consist of 11 members as follows:
  - 1. One employee of the Department;
  - 2. One currently employed wastewater treatment plant operator with Grade 4 certification;
  - 3. One currently employed water treatment plant operator with Grade 4 certification;
  - 4. One currently employed wastewater collection system operator with Grade 4 certification;
  - 5. One currently employed water distribution system operator with Grade 4 certification;
  - 6. One faculty member teaching sanitary sciences at an Arizona university or community college;
  - 7. One professional engineer, registered and residing in Arizona, engaged in consulting in the field of sanitary engineering;
  - 8. One elected or appointed municipal official;
  - 9. One representative of an investor-owned water or wastewater facility;
  - 10. One representative of a small public water system; and
  - 11. One currently employed remote operator representative.
- C. The Director shall appoint each certification committee member.

- D. The certification committee shall meet at least twice a year. At the first meeting of each calendar year, the certification committee shall select, from its membership, a chairperson and other officers as necessary. The Department's certification committee member is the executive secretary, who is responsible for keeping records of all meetings.
- E. The term of a certification committee member is three years.
- F. A meeting quorum consists of the chairperson or the chairperson's designated representative, the executive secretary or the executive secretary's designated representative, and three other members of the committee.
- G. In the event of a vacancy caused by death, resignation, or removal for cause, the Director shall appoint a successor for the unexpired term.
- H. A certification committee member may be reappointed, but a member shall not serve more than three consecutive terms.

**R18-5-104. General Requirements**

- A. A facility owner shall ensure that at all times:
  - 1. Only a certified operator can make a decision about process control or system integrity regarding water quality or water quantity that affects public health; however, an administrator who is not a certified operator can make a planning decision regarding water quality or water quantity as long as the decision is not a direct operational process control or system integrity decision that affects public health.
  - 2. The operator in direct responsible charge of the facility is certified for the class of facility at which the operator works, and at or above the grade of the facility for which the operator works;
  - 3. An operator who is in direct responsible charge of more than one facility is certified at or above the grade of the facility with the highest grade;
  - 4. An operator who replaces the operator in direct responsible charge does not begin operation of the facility before being certified for the applicable class and grade of the facility;
  - 5. In the absence of the operator in direct responsible charge, the operator in charge of the facility is certified for the applicable class of facility and at a grade no lower than one grade below the grade of the facility; and
  - 6. The names of all current operators are on file with the Department.
- B. If the owner of a facility replaces an operator in direct responsible charge with another operator, the facility owner shall notify the Department in writing within ten days of the replacement.
- C. The operator shall notify the Department in writing within ten days of the date the operator either ceases operation of a facility or commences operation of another facility.
- D. A facility owner shall ensure that an operator holding certification in a particular class and grade only operates a facility of the same class and the same or lower grade for which the operator is certified.
- E. A facility owner shall ensure that a Grade 3 or Grade 4 facility has an on-site operator. An operator holding certification in a particular class and grade may operate one or more Grade 1 or Grade 2 facilities as a remote operator if the facility owner ensures that the following requirements are met:
  - 1. The remote operator is certified at or above the class and grade of each facility operated by the remote operator.
  - 2. There is an on-site representative on the premises of each Grade 1 or Grade 2 facility, except for a Grade 1 water distribution system that serves fewer than 100 people, which is not required to have an on-site representative if the conditions of (E)(8) are met. The on-site representative is not required to be an operator if the facility has a remote operator who is certified at or above the grade of the facility.

3. The remote operator instructs the on-site representative in proper operation and maintenance of each facility, providing written instructions, and ensuring that adequate records are kept.
4. The remote operator provides the on-site representative with a telephone number at which the remote operator can be reached at all times. If the remote operator is not available for any reason, the remote operator shall provide the on-site representative with the name and telephone number of a qualified substitute operator.
5. The remote operator resides no more than 200 miles by ground travel from any facility that the remote operator serves.
6. The remote operator operates each facility in compliance with applicable state and federal laws.
7. The remote operator inspects a facility as often as necessary to assure proper operation and maintenance, but in no case less than:
  - a. Monthly for a Grade 1 or Grade 2 water treatment plant or distribution system that produces and distributes groundwater;
  - b. Monthly for a Grade 1 wastewater treatment plant;
  - c. Twice a month for a collection system that serves fewer than 2,500 people; and
  - d. Weekly for a Grade 2 wastewater treatment plant or collection system that serves fewer than 1,000 people.
8. For a Grade 1 water distribution system that does not have an on-site representative and serves fewer than 100 people, the following conditions are met:
  - a. The name and telephone number at which the remote operator can be reached is posted at the facility, enclosed with water bills, or otherwise made readily available to water users. If the remote operator is not available for any reason, the remote operator shall post at the facility the name and telephone number of a substitute operator of the applicable facility class and grade.
  - b. The remote operator or substitute operator resides no more than 200 miles by ground travel from the facility; and
  - c. The remote operator inspects the facility weekly.

**R18-5-105. Certification**

- A. The Department shall issue an operator certificate to an applicant if the applicant:
  1. Meets the experience and education requirements in R18-5-112 for the applicable class and grade, and
  2. Passes a written, validated examination for the applicable class and grade.
- B. To apply for operator certification, an applicant shall submit or arrange to have submitted to the Department the following information, as applicable, in a format acceptable to the Department:
  1. The applicant's full name, social security number, and operator number;
  2. The applicant's current mailing address, home and work telephone numbers, fax number, and e-mail address;
  3. The applicant's place of employment, including the facility identification number;
  4. The class and grade of the facility where the applicant is employed;
  5. Proof of successful completion of the examination for the applicable class and grade; and

6. Documentation of the applicant's experience and education required under R18-5-112.

**R18-5-106. Examinations**

- A. The Department shall provide for examinations for certification of operators. The Department may contract with third party examiners for administration of examinations, based on its assessment of the quality of the examination services. The Department shall ensure that a list of approved examiners is available upon request.
- B. The Department shall validate all examinations before administration. Each examination shall include topics such as treatment technologies, system maintenance, regulatory protocols, safety, mathematics, and general system management.
- C. The examiner shall grade the examination and make the results available to the applicant and the Department within seven days of the date of the examination.
- D. An applicant shall not be admitted to an examination without a valid picture I.D.
- E. An individual shall make a score of 70 percent on the examination in order to attain a passing grade.

**R18-5-107. Certificate Renewal**

- A. If the Department renews a certificate, the certificate is renewed for three years, unless the operator requests a shorter renewal period in writing.
- B. To renew a certificate, an operator shall maintain documentation and provide it to the Department upon request to verify completion of at least 30 PDHs accumulated during a certification period. The operator shall provide documentation of PDHs that is in a format acceptable to the Department. At least 10 of the PDHs shall directly relate to the specific job functions of the operator. If an operator holds multiple certificates, the required PDHs may be applied to all certificates if the PDHs are acquired within that certification period. The operator's supervisor or the entity that provides the education or training shall verify completion of each PDH in writing.
- C. As an alternative to the requirements of subsection (B), an operator may renew a certificate by taking and passing an examination for the applicable class and grade.

**R18-5-108. Certificate Expiration**

- A. A certificate expires on the expiration date printed on the certificate. An operator may reinstate an expired certificate for the same class and grade without examination if the operator files the documentation required in R18-5-107(B) with the Department within 90 days of the certificate expiration date.
- B. If an expired certificate is not renewed within 90 days of the certificate expiration date, the Department shall not reinstate the certificate. To be recertified, the operator shall reapply and be reexamined as a new applicant.

**R18-5-109. Denial and Revocation**

- A. The Department shall act under A.R.S. Title 41, Chapter 6, Article 10 and 18 A.A.C. 1, Article 2 to deny or revoke a certificate.
- B. If it is determining whether to revoke a certificate, the Department shall consider whether the operator:
  1. Operates a facility in a manner that violates federal or state law;
  2. Negligently supervises the operation of the facility;

3. Fails to comply with Department orders or consent decrees;
  4. Obtains a certificate by fraud, deceit, or misrepresentation;
  5. Knowingly prepares a false or fraudulent report or record regarding the operation or management of the facility; or
  6. Endangers the public health, safety or welfare.
- C. In order to be recertified, a person whose certificate is revoked shall reapply and be reexamined as a new applicant. A person whose certificate is revoked is not eligible for admission to a certification examination for 12 months from the effective date of the revocation.

**R18-5-110. Reciprocity**

The Department shall issue a certificate to an applicant who holds a valid certificate from another jurisdiction, if the applicant:

1. Passes a written, validated examination in Arizona or in another jurisdiction that administers an examination that is substantially equivalent to the examination in Arizona and validated by the Department, and
2. Submits written evidence of the experience and education required under R18-5-112.

**R18-5-111. Repealed**

**R18-5-112. Experience and Education**

- A. The Department shall consider the following criteria to determine whether an applicant has the experience and education required for certification in a specific class and grade:
1. Years of experience at a lower grade;
  2. Qualifying experience in the same or a related field; and
  3. Education in a qualifying discipline.
- B. An applicant shall provide written evidence of education in a qualifying discipline. The applicant shall provide transcripts if the Department determines that the transcripts are necessary to verify completion of the education requirements.
- C. An applicant shall provide written evidence of qualifying experience in the applicable facility class.
- D. An applicant shall meet the following requirements for admission to a certification examination:
1. For Grade 1, high school graduation or the equivalent.
  2. For Grade 2, at least:
    - a. High school graduation or the equivalent and one year of qualifying experience as a Grade 1 operator or the equivalent of a Grade 1 operator in another jurisdiction;
    - b. Two years of post-secondary education in a qualifying discipline and one year of qualifying experience, including six months as a Grade 1 operator or the equivalent of a Grade 1 operator in another jurisdiction; or
    - c. A bachelor's degree in a qualifying discipline and six months of qualifying experience.
  3. For Grade 3, at least:

- a. High school graduation or the equivalent and two years of qualifying experience, including one year as a Grade 2 operator or the equivalent of a Grade 2 operator in another jurisdiction;
  - b. Two years of post-secondary education in a qualifying discipline, and 18 months of qualifying experience as a Grade 2 operator or the equivalent of a Grade 2 operator in another jurisdiction; or
  - c. A bachelor's degree in a qualifying discipline and one year of qualifying experience.
4. For Grade 4, at least:
- a. High school graduation or the equivalent and three years of qualifying experience, including one year as a Grade 3 operator or the equivalent of a Grade 3 operator in another jurisdiction;
  - b. Two years of post-secondary education in a qualifying discipline and 30 months of qualifying experience, including one year as a Grade 3 operator or the equivalent of a Grade 3 operator in another jurisdiction; or
  - c. A bachelor's degree in a qualifying discipline, and two years of qualifying experience.

**R18-5-113. Classes of Facilities**

- A. The Department shall classify a facility in one of four classes:
  - 1. Water treatment plant,
  - 2. Water distribution system,
  - 3. Wastewater treatment plant, or
  - 4. Wastewater collection system.
- B. The Department shall classify a facility as one of four grades, Grades 1–4. The grade corresponds with the level of system complexity, with Grade 1 being the most simple and Grade 4 being the most complex.
- C. For a multi-facility system, the Department shall grade each facility according to complexity and the total population or population equivalent served.

**R18-5-114. Grades of Wastewater Treatment Plants and Collection Systems**

The Department shall grade a wastewater treatment plant or collection system according to population equivalent served, degree of hazard to public health, class of facility, and degree of treatment, as follows:

- 1. Grade 1 includes:
  - a. A stabilization pond that serves 2,000 or fewer persons;
  - b. A wastewater treatment plant not designated as Grade 2, 3, or 4; or
  - c. A collection system that serves 2,500 or fewer persons.
- 2. Grade 2 includes:
  - a. A stabilization pond that is designed to serve more than 2,000 persons;
  - b. An aerated lagoon;
  - c. A facility that employs biological treatment based upon the activated sludge principle, or trickling filters and is designed to serve 5,000 or fewer persons,



except as provided in subsection (3)(c); or

- d. A collection system that serves between 2,501 to 10,000 persons.
3. Grade 3 includes:
- a. A facility that employs biological treatment based upon the activated sludge principle and is designed to serve 5,001 to 20,000 persons;
  - b. A facility that employs trickling filtration designed to serve 5,001 to 25,000 persons;
  - c. A variation of biological treatment based on the activated sludge principle that requires specialized knowledge, including contact stabilization, and is designed to serve 20,000 or fewer persons; or
  - d. A collection system that serves 10,001 to 25,000 persons.
4. Grade 4 includes:
- a. A facility that employs biological treatment based upon the activated sludge principle and is designed to serve more than 20,000 persons;
  - b. A facility that employs trickling filtration and is designed to serve a population equivalent more than 25,000 persons; or
  - c. A collection system that serves more than 25,000 persons.

**R18-5-115. Grades of Water Treatment Plants and Distribution Systems**

- A. Grading of water treatment plants. The Department shall grade a water treatment plant according to the sum of the points it assigns for each plant characteristic.
  - 1. The Department shall assign points for the purpose of grading a water treatment plant as follows:

<b>Plant Characteristics</b>	<b>Points</b>
Population	1 per 5,000
Maximum Design Capacity	1 per Millions of Gallons per Day up to 10
Groundwater Source	3
Surface or Groundwater Under the Direct Influence of Surface Water Source	5
Carbon Dioxide	2
pH Adjustment	3
Packed Tower Aeration	6
Air Stripping	6
Stability or Corrosion Control	3
Taste and Odor	8
Iron/Manganese Removal	8
Ion Exchange Softening	10

<b>Plant Characteristics</b>	<b>Points</b>
Chemical Precipitation Softening	15
Coagulant Addition	6
Flocculation	4
Sedimentation	4
Upflow Clarification	2
Fluoridation	5
Activated Alumina	6
Blending	5
Residual Waste Stream	5
Control Systems Technology	2
Biologically Active Filter	20
Granular Media Filter	15
Pressure Filter	15
Gravity Sand Filter	10
Membrane Filtration	15
Chlorine Gas	6
Hypochlorite Liquid	2
Hypochlorite Solid	2
Chloramine	9
Chlorine Dioxide	9
Ozone	12
Ultraviolet	3

2. The Department shall assign a grade by the total number of points assigned to the facility, as follows:

<b>Grade</b>	<b>Point Range</b>
Grade 1	1 to 25
Grade 2	26 to 50
Grade 3	51 to 70
Grade 4	More than 70

- B. Grading of water distribution systems. The Department shall grade a distribution system according to the

sum of the points it assigns for each system characteristic.

1. The Department shall assign points for the purpose of grading a distribution system as follows:

<b>System Characteristics</b>	<b>Points</b>
Population	1 per 5,000
Maximum Design Capacity	1 per Millions of Gallons per Day up to 10
Pressure Zones	5
Booster Stations	5
Storage Tanks	3
Blending	5
Fire Protection Systems	5
Cathodic Protection	3
Control System Technologies	2
Chlorine Gas	6
Hypochlorite Liquid	2
Hypochlorite Solid	2
Chloramine	9
Chlorine Dioxide	9

2. No points are added for Grade 1 small systems that:

- a. Only distribute groundwater;
- b. Serve fewer than 501 persons;
- c. Have no disinfection or disinfect by chlorine gas or hypochlorite only; and
- d. Do not store water or store water only in storage tanks.

3. The Department shall assign a grade by the total number of points assigned to the facility, as follows:

<b>Grade</b>	<b>Point Range</b>
Grade 1	0
Grade 2	1 to 20
Grade 3	21 to 35
Grade 4	More than 35

**R18-5-116. Initial Grading and Regrading of Facilities**

- A. The Department shall act under A.R.S. Title 41, Chapter 6, Article 10 and 18 A.A.C. 1, Article 2 when initially grading or when regrading a facility.
- B. If it is determining the initial grade of a facility or whether to regrade a facility, the Department shall consider the facility characteristics in R18-5-114 and R18-5-115, and whether:
  - 1. The facility has special design features or characteristics that make it unusually difficult to operate;
  - 2. The water or wastewater is unusually difficult to treat;
  - 3. The facility uses effluent; or
  - 4. The facility poses a potential risk to public health, safety or welfare.
- C. The owner of a facility that is regraded under this Article shall ensure that the facility is operated by an operator, in compliance with this Article, no later than one year from the effective date of the facility regrading.