



# Water and wastewater operators' certification guidelines

2023

# Water and Wastewater Operators' Certification Guidelines

Effective January 1, 2005

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Additional copies of this document, or any comments, questions or suggestions regarding the content of this document may be directed to:

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## Foreword

Municipal governments and the Government of Alberta invest millions of dollars annually in water and wastewater facilities comprising of infrastructure worth billions of dollars. To help ensure proper operation and maintenance of these facilities and to protect the health of its citizens and the environment, the EPA Water and Wastewater Operator Certification Program (Certification Program) was developed.

A forerunner to the current Certification Program was established in 1969 in conjunction with the Western Canada Water and Sewage Conference (now Western Canada Water). In 1974, a committee of the Federation of Associations on the Canadian Environment (subsequently the Canadian Water and Wastewater Association) in conjunction with the Association of Boards of Certification (now Water Professionals International), an international organization of certifying authorities headquartered in Ankeny, Iowa, was established to consider compatible certification programs throughout all provinces. This committee endorsed the standardization and recognition of the certification program across North America.

In 1975, Alberta began its first Voluntary Certification Program. In February 1982, the Clean Water (Municipal Plants) Regulations were amended to require that the day-to-day operation of all municipal water and wastewater facilities be supervised by a certified operator.

In 1993, Alberta's *Environmental Protection and Enhancement Act* (EPEA) replaced the existing environmental legislation including the *Clean Water Act*. The Regulations under EPEA requires that the operation of waterworks systems, which includes water treatment plants, water distribution systems, wastewater treatment plants and wastewater collection systems, be supervised by one or more persons certified in accordance with the approval or registration and outlined in the Water and Wastewater Operators' Certification Guidelines (Guidelines). These guidelines offer municipal officials and facility managers' information necessary to determine certification requirements, as well as provide to operators the necessary details on applying, obtaining, or renewing certification.

Based on recommendations from the Certification Advisory Committee, significant changes to the program were implemented effective January 1, 2005. These changes included the introduction of Mandatory Entry Level Training, CEU requirement for certification renewal, and the extension of the renewal period.

The Certification Program is for all operators; however, certification is not always required for non-charge operators. The approval, registration or code issued by EPA will include a facility classification that specifies the requirements for certified operators.

The benefits Alberta Certification Program are:

- Assurance of a safe and adequate water supply;
- Protection of the aquatic environment;
- Optimum use of public funds and resources dedicated to water and wastewater facilities;
- Best use of existing technologies; and
- Recognition of water and wastewater facility operators and their important role in their communities.

The Guidelines outline the Certificate of Qualification requirements for operators of waterworks and wastewater systems as per the *Environmental Protection and Enhancement Act*.

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## Program Authorization

The Alberta *Environmental Protection and Enhancement Act* (EPEA) requires that specified water and wastewater facilities in the Province of Alberta have certified operators to supervise and/or carry out day-to-day operation. Each facility requiring certified operators will have documentation in the form of an approval, registration, or code which specifies the number of certified operators and level of certification.

## Facilities Requiring Certified Operators

EPEA and its regulations dictate the activities and facilities requiring approvals or registration under the Act, and therefore, which facilities require **CERTIFIED** Operators.

For the purposes of the EPA Certification Program, these facilities have been broken into two categories, Municipal and Public. The following is a summary only. Detailed definitions can be found in the appropriate parts of the legislation Appendix V of the Guidelines.

**Municipal Facilities** – Facilities serving residential hamlets, summer villages, villages, towns, cities and municipal developments that include:

- Water Treatment Plants (WT);
- Wastewater Treatment Plants or Wastewater Lagoons (WWT);
- Water Distribution Systems (WD);
- Wastewater Collection Systems (WWC).

**Public Facilities** – These are non-municipal facilities that do not serve residential developments but do provide treatment for potable water or treat domestic wastewater, as required by an approval or registration under EPEA. They include:

- Industrial facilities, (only those with potable water, domestic wastewater treatment or wastewater collection systems requiring certified operators stipulated by their *Code of Practice*);
- Provincial Parks;
- Recreation developments and,
- Institutions/Government facilities.

**Exclusions** – Specifically excluded are:

- Hamlets and municipal development water systems that do not require treatment for health-effect parameters (e.g. high quality groundwater source)
- Systems with less than 15 service connections
- Systems with less than 3 km of distribution system
- Public facilities that have a water distribution system or a wastewater collection system
- Also excluded are wastewater systems that are regulated under the *Safety Code Act*.
- Operators working in a public wastewater collection system (no wastewater treatment), are eligible for Level I Wastewater Collection only.

## Certification for Non-EPEA Regulatory Facilities



First Nations Facilities, Federal Department of National Defense facilities, Federal Parks' facilities, and industrial wastewater treatment facilities may be eligible for equivalent certification even though they are not directly regulated by EPA.

Where a system is not directly regulated by EPA, a regulatory agency other than EPA (Alberta Health Services for example) may request that operators participate in the certification program for non-approved or non-registered facilities. In the case of industrial wastewater facilities, the owner of the facility can request classification of their facility in discussion with their EPA approval coordinator.

Operators are eligible to participate in the operator certification program if they operate a classified First Nations Facilities, Federal Department of National Defense facilities, Federal Parks' facilities, and industrial wastewater treatment facilities.

Documenting and classifying equivalent facilities will be completed as capacity allows by EPA staff or an EPA approved contractor. A maximum of five (5) operators are eligible to be certified from an industrial wastewater treatment facility and will be granted a "P" certification.

## Facility Classifications

EPA classifies all water and wastewater facilities based on staff recommendations and review by the Alberta Environment Water and Wastewater Operator Certification Advisory Committee. The owner or authorized representative may also request a review of a facility classification.

The classification of Wastewater Collection (WWC) and Water Distribution (WD) systems is based upon the population served by the

facilities while the classification of Water Treatment (WT) and Wastewater Treatment (WWT) facilities is based upon a range of points determined by the degree of difficulty in operating the treatment facility. The Alberta facility classification system is similar to many models used across Canada and the United States.

**Facility classifications available** are: Small Systems, Class I, Class II, Class III, and Class IV.

**Table 1 – Facility Classification System**

| Facility                      | Based Upon        | I   | II          | III           | IV             |
|-------------------------------|-------------------|---|-------------|---------------|----------------|
| Water Treatment (WT)*         | Range of Points   | Based on degree of difficulty to operate the facility |             |               |                |
| Water Distribution (WD)**     | Population Served | 1500 or fewer   | 1501–15,000 | 15,001–50,000 | 50,001 or more |
| Wastewater Collection (WWC)** | Population Served | 1500 or fewer   | 1501–15,000 | 15,001–50,000 | 50,001 or more |
| Wastewater Treatment (WWT)    | Range of Points   | Based on degree of difficulty to operate the facility |             |               |                |

**\* NOTES on Water Treatment Classification:**

- Groundwater systems providing virus disinfection or other additional treatment are considered a water treatment plant. A supply with only preventative chlorination is not considered a water treatment plant.
- Systems drawing on a GUDI source are **Minimum** of Class I (i.e. Small Systems does not apply to GUIDI)
- Systems drawing on a Surface Water source are a **Minimum** of Class II (i.e. Small Systems and Level I do not apply to Surface Water facilities).

**\*\*** Simple “in-line” treatment (such as booster pumping, preventive chlorination or odor control) is considered an integral part of the distribution or collection system.

EPA may adjust the classification of a facility if justified. A **Class I** facility may have a Small Water or Small Wastewater operator requirement (not Level I) if it is a:

- high quality ground water (HQGW),
- wastewater stabilization pond facilities with no discharge or seasonal discharge,
- approved ‘municipal’ or privately owned ‘public’ facility **serving a population of less than 500.**

Small Water systems may include water distribution systems or Class I water treatment plants such as iron and manganese removal facilities, water softening facilities using ion-exchange, ultraviolet treatment (UV) for virus inactivation, or filtration/ chlorination facilities. **Surface water treatment facilities or Groundwater under the influence (GUIDI) are specifically excluded from small system category.**



## Certification Requirements and Responsibilities

### Facility Owners

It is the legal responsibility of the owner or manager for each facility to be aware of the requirements for certified operators and to ensure that the requirements are met.

The approval, registration or code of practice issued by EPA will designate the minimum number and level of certification for key operations personnel. It is important that facility owners or managers

develop an internal program ensuring the availability of substitute or replacement personnel when necessary.

It is also important for each facility to have a contingency plan so that certified operator requirements are met in cases of planned absences (e.g., vacation), unplanned absences (e.g. illness), or change in staffing (e.g. retirement).

### Facility Staffing Requirements - Certified Operators

The disciplines in each facility may be abbreviated as follows:

- Water Treatment (WT)
- Water Distribution (WD)
- Wastewater Treatment (WWT), and
- Wastewater Collection (WWC)



Table 2 – Certified Operator Staffing Requirements

| WT/WD/WWT /WWC Facility | Certified Operator in charge | Attending Operator (s)   |
|-------------------------|------------------------------|--|
| <b>Class I</b>          | <b>Level I or higher *</b>   | As per the Waterworks System Attendance Section below  |
| <b>Class II</b>         | <b>Level II or higher</b>    | As per the Waterworks System Attendance Section below  |
| <b>Class III</b>        | <b>Level III or higher</b>   | <p><i>Population 1,501 – 15,000</i><br/>- <b>Level I or higher</b></p> <p><i>Population 15,001 – 50,000</i><br/>- <b>Level II or higher</b></p> <p><i>Population exceeding 50,000</i><br/>- <b>Level II or higher</b><br/>- <b>One operator at Level I or higher</b><br/>- <b>must have one certified at each shift</b></p>  |
| <b>Class IV</b>         | <b>Level IV</b>              | <p><b>WT/WWT</b></p> <p><i>Population up to 200,000</i><br/>- <b>Two Level III or IV</b><br/>- <b>must have one certified at Level II or higher at each shift</b></p> <p><i>Population &gt; 200,000</i><br/>- <b>One Level IV</b><br/>- <b>One Level III or IV</b><br/>- <b>must have at minimum one Level II or higher at each shift</b></p> <p><b>WD/WWC only</b></p> <p><i>Population &gt; 50,001</i><br/>- <b>Two Level III or IV</b><br/>- <b>must have one certified at Level II or higher at each shift</b></p> |

\*The exception is when the approval, registration or applicable code of practice states that an operator with a Small Systems certificate is acceptable.

## Waterworks Systems Attendance

The following section provides operator attendance requirements for all Environment and Protected Areas regulated waterworks. A waterworks system must meet all the applicable requirements outlined within the definition section to be considered as a waterworks system with remote monitoring or remote process control. Otherwise, they will be considered a waterworks system without remote monitoring or remote process control.

If the approval or registration holder is unable to retain an operator at the required frequencies, the approval or registration holder must install remote monitoring and/or remote process control capabilities.

Any request to Environment and Protected Areas for a proposed deviation from these requirements must be accompanied by a detailed plan containing sufficient compelling information so that the Director who signs the corresponding approval or registration is satisfied that the quality of the operation of the waterworks system will not be compromised.

The approval or registration holder must prepare a schedule and procedures for calibration, verification and maintenance of all remote monitoring equipment and alarms to ensure the accuracy of monitoring data and the ability to notify the certified operator in the event of an emergency. AWWA Standard C670 and US EPA Method 334 provide examples of equipment verification and calibration.

The approval or registration holder must prepare a staffing plan that includes all the operators who are responsible for the operation of the waterworks system that is being remotely monitored. The approval or registration holder must update their Operations Program, Emergency Response Plan, and Drinking Water Safety Plan to describe how the waterworks system will be operated and remotely monitored.

The Certified Operator in Charge (Supervising Operator) must be located within a two hour response time of the waterworks system. For more than a two hour response time, the Approval/Registration holder must submit an alternative plan outlining the rationale for extending this response time to Environment and Protected Areas. This alternate plan must be satisfactory to the Director.

### **Certified Operator in Charge (Supervising Operator) and Attending Operator**

- Approval and Registration Holders should aim to have all operators certified to at least the level of the waterworks system.
- The Certified Operator(s) in Charge (Supervising Operator) shall have a certification equal or higher to the classification of the system and provide direct oversight of the waterworks system.
- The Attending Operator shall be certified to a minimum level of Small Systems Operator, with the exception of the following:
  - Class IV and III systems should refer to their approval or registration for specifics on number of certified operator(s) required as it will be site-specific.
  - If the system is classified as Small Systems, the attending operator(s) may be uncertified.
- Attending operators are encouraged to achieve higher levels of certification in accordance with the operator certification guidelines.

- When a Certified Operator in Charge (Supervising Operator) is providing direction to attending operators at multiple waterworks systems, sufficient time shall be dedicated to each system. The following factors should be considered when deciding on how many systems to provide direction to:
  - complexity of the operations of the facilities,
  - the feasibility of travel times and schedules for the Certified Operator in Charge (Supervising Operator) and Attending Operator(s),
  - the knowledge and certification level of the attending operator(s), and
  - the time required to do the operations and maintenance necessary for the system to meet the approval or registration requirements.

### **Cover Off due to Vacation and Illness**

During the course of a year, there are commonly short periods of time where a Certified Operator in Charge (Supervising operator) is unavailable (such as annual holidays, or major illness). During these times the registration/approval holder must arrange an alternate (i.e. back-up) Certified Operator in Charge (Supervising Operator) who is available to ensure that the quality of treated water is not compromised.

### **Attendance Requirements for Waterworks Systems WITHOUT Remote Monitoring/Process Control**

Distribution Only Waterworks Systems (that have a COP Registration) WITHOUT remote monitoring or remote process control (i.e. No water treatment is ongoing and where the treated water source is from another regulated waterworks system)

- Alarms, if any, must be set to alert the certified operator and any others as required to ensure that the quality of the operation of the waterworks will not be compromised.
- The Certified Operator (Supervising Operator) in charge must be certified to the level of the waterworks system.
- The minimum frequency of site visits by the Certified Operator in Charge (Supervising Operator) shall be as follows:
  - if the system is serving more than 500 population, or has more than 3 kilometers of water distribution system, five days per week visitation is required. If a statutory holiday falls on a weekday within that week, the site visit is not required on that day, and the frequency may be reduced by one day for each statutory holiday; or,
  - if the system is serving less than 500 population and less than 3 kilometers of water distribution system, three times per week visitation is required, with no more than two days between visits.

High Quality Groundwater Systems WITHOUT remote monitoring or remote process control.

- Alarms, if any, must be set to alert the Certified Operator in Charge (Supervising Operator), and any others as required to ensure that the quality of the operation of the waterworks system will not be compromised.
- The certified operator in charge must be certified to the level of the waterworks system.
- The minimum frequency of site visits of the waterworks system by the Certified Operator in Charge (Supervising Operator) shall be five days per week. If a statutory holiday falls on a weekday within that week, the site visit is not required on that day, and the frequency may be reduced by one day for each statutory holiday.

Approved Waterworks Systems WITHOUT remote monitoring or remote process control.

- Alarms, if any, must be set to alert the certified operator and any others as required to ensure that the quality of the operation of the waterworks system will not be compromised.
- The Certified Operator in Charge (Supervising Operator) must be certified to the level of the waterworks system.
- The minimum frequency of site visits of the waterworks system by the Certified Operator in Charge (Supervising Operator) shall be five days per week. If a statutory holiday falls on a weekday within that week, the site visit is not required on that day, and the frequency may be reduced by one day for each statutory holiday.
- The attending operator must visit the waterworks system on the remaining days of the week.

**Attendance Requirements for Waterworks Systems WITH Remote Monitoring/Process Control**

Water Distribution Only Waterworks Systems WITH remote monitoring or remote process control (i.e. No water treatment is ongoing and where the treated water source is from another regulated waterworks system)

- Treated water must be continuously monitored to demonstrate compliance with all registration requirements.
- Alarms must be set to alert the Certified Operator in Charge (Supervising Operator) and any others as required to ensure that the quality of the operation of the waterworks systems will not be compromised.
- The Certified Operator in Charge (Supervising Operator) must be certified to the level of the waterworks system.
- The Certified Operator in Charge (Supervising Operator) must visit the waterworks a minimum of at least one time per week on a day when the attending operator is physically present. Between visits, the Certified Operator in Charge (Supervising Operator) shall stay informed of the operation of the waterworks, as required to ensure proper operation of the waterworks system.
- The attending operator must visit the waterworks system a minimum of at least three days per week, with no more than two days between visits.

High Quality Groundwater Systems WITH remote monitoring or remote process control.

- Treated water must be continuously monitored to demonstrate compliance with all registration requirements.
- Water production at the treatment facility must automatically shut down if monitoring indicates the registration requirements are not being met. The system can continue to distribute treated water.
- Alarms must be set to alert the certified operator *and any others as required* to ensure that the quality of the operation of the waterworks system would not be compromised.
- The Certified Operator in Charge (Supervising Operator) must be certified to the level of the

waterworks system.

- The Certified Operator in Charge (Supervising Operator) must visit the waterworks system a minimum of at least one time per week on a day when the attending operator is physically present. Between visits, the Certified Operator in Charge (Supervising Operator), shall stay informed of the operation of the waterworks system, as required to ensure proper operation of the waterworks system.
- The attending operator must visit the waterworks system a minimum of at least three days per week, with no more than two days between visits.

**Note:** Even though an operator may not be present at the waterworks systems, chlorine contact time (CT) ratios must be calculated a minimum of 5 days per week.

Approved Waterworks Systems WITH remote monitoring or remote process control.

- Treated water must be continuously monitored to demonstrate a capability to comply with all approval requirements.
- Water production at the treatment facility must automatically shut down if the monitoring indicates the approval requirements are not being met. The system can continue to distribute treated water.
- Alarms must be set to alert the Certified Operator in Charge (Supervising Operator) and any others as required to ensure that the quality of the operation of the waterworks system will not be compromised.
- The Certified Operator in Charge (Supervising Operator) must be certified to the level of the waterworks system.
- The Certified Operator in Charge (Supervising Operator) must visit the waterworks a minimum of at least once per week on a day when the attending operator is physically present. Between site visits, the Certified Operator in Charge (Supervising Operator) shall stay informed of the operation of the waterworks, as required to ensure proper operation of the waterworks system.
- The attending operator must visit the waterworks system on each day that the system is producing treated water. On days when the treatment plant is not producing water and the system is distributing water from a treated water reservoir, the Water Distribution Only sections of this document applies.

**Note:** For Waterworks Systems with High Quality Groundwater sources that require an approval to operate because of a MAC exceedance (e.g. fluoride or arsenic), the High Quality Groundwater sections of this document apply.

**Note:** Approved systems with treatment trains that do not require ongoing operational modifications may be eligible for a deviation.

# Program Guidelines


## Responsibility of Operators

It is the responsibility of certified operators to know the terms and conditions in the approval or registration for their facility. It is also their responsibility to understand the certification requirements for operators of their facilities as indicated by the approval, registration, code, or by the Certification Guidelines.

Certified operators are responsible to establish or understand contingency plans for each facility to ensure that the approval or registration requirements regarding certified operators, are met at all times. This is important during normal operation or in the cases of planned absences (e.g. vacation), unplanned absences (e.g. illness), or change of staff (e.g. retirement).

Alberta Water and Wastewater Operators are expected to act honestly, competently and with integrity, with a view to ensuring the safety of human health and the protection of the environment.

## Sample: Facility Approval

  
**APPROVAL**  
PROVINCE OF ALBERTA  
ENVIRONMENTAL PROTECTION AND ENHANCEMENT ACT  
S.A. 1992, c.E-13.3 and as amended from time to time.

|                       |                                |
|-----------------------|--------------------------------|
| APPROVAL NO .....     | 8800-01-00                     |
| APPLICATION NO .....  | 001-8800                       |
| EFFECTIVE DATE .....  | February , 1998                |
| EXPIRY DATE .....     | February 1, 2008               |
| APPROVAL HOLDER ..... | Cao<br>Village of No Mans Land |

Pursuant to Part 2, Division 2 of the Environmental Protection and Enhancement Act, S.A. 1992, c.E-13.3, as amended from time to time, approval is granted to the approval holder subject to the attached terms and conditions for the following activity:

Operation of a Class I water treatment plant and a Class I water distribution system for the Village of No Mans Land.

|                            |                 |
|----------------------------|-----------------|
| Date Signed .....          | February , 1998 |
| Director's Signature ..... |                 |

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**TERMS, CONDITIONS AND REQUIREMENTS ATTACHED TO APPROVAL**

**PART 4: OPERATIONS**

**SECTION 4.1: WATERWORKS SYSTEM**

4.1.1 The waterworks system shall consist of:

- (a) a treated groundwater supply from 3 wells;
- (b) a water treatment plant with treatment capabilities for:
  - (i) draft aeration,
  - (ii) pretreatment oxidations,
  - (iii) iron removal by manganese greensand filtration, and
  - (iv) disinfection
- (c) two (2) treated water reservoirs with a total volume of approximately 350 m<sup>3</sup>;
- (d) water distribution system within the municipal boundary.

**SECTION 4.2: CERTIFIED OPERATOR**

4.2.1 The day to day operation of the water treatment plant and the water distribution system shall be directly supervised by a certified operator who holds a certificate valid for that system.



# Certification

## Types of Certificates Available

1. Small System Certificate
2. Municipal Certificate
3. Public Certificate
4. Conditional Certificate

### Small Water and Wastewater System Certificates

This certificate is issued to an operator who meets the training, experience and examination requirements for a small water system or small wastewater system certificate.

Small system certificates are valid for Class I facilities that serve a population of less than 500. Surface water treatment facilities (or Groundwater under the influence) are specifically excluded from the Small Systems category.

### Municipal Certificates

This certificate is issued when an operator meets the complete education, training, municipal experience and examination requirements of the Certification Program. Municipal certificates are valid for Municipal facilities as defined on page 5.

### Public Certificates

This certificate is issued to a person who meets the education, training and examination requirements of the Certification Program and has operating experience only in a public facility as defined as defined on page 5. This certificate will have a “P” designation in the certificate number.

The Public Certificate is **not valid** for Municipal facilities. It may be upgraded, upon application, to a Municipal Certificate after a minimum of 6 months of approved current\* municipal facility operating experience.

Operators operating Public Facilities **are restricted** to Water Treatment and/or Wastewater Treatment Certification. They are not eligible for Water Distribution or Wastewater Collection Certification. Except, if working in a wastewater collection system only (no treatment), then operators are eligible for Level I Wastewater Collection.

### Conditional Certificates

Conditional Certification of an operator may be considered, at the discretion of the Department, when there is **no other alternative** for the facility owner to meet the requirements of the approval or registration. The certificate is issued only to the operator(s) designated by the owner as responsible for the facilities required by the approval or registration and is valid only for those facilities. Conditional Certification is temporary, issued once only, and intended mainly for small systems where a special need can be shown. Certificates are issued for a **Maximum of two (2) years**.

\* See Appendix I - Definitions

A Conditional Certificate will be valid for a specific time period to allow a facility owner to either hire a fully certified operator or to permit an operator to upgrade to the required level. Conditional certification will be issued as a letter and are non-renewable.

Applications for Conditional Certificates are not available online. Applicants must contact the Certification Section of EPA to request an application. Applications for Conditional Certification must be submitted jointly by the operator applicant and by the facility owner (or representative).

## Obtaining Certification

To obtain certification at the required level, the operator/applicant must:

1. Meet the minimum requirements for each level as outlined below  
(Refer to Table 3 – Summary of Education and Experience Requirements).
2. Fill out an application to write the certification exam(s) for appropriate level.
3. Sign the Certified Operator Code of Conduct.
4. Submit the application and Code of Conduct in a manner that is approved by the Director.
5. Write and pass the appropriate certification exam.

The successful operator/applicant will be issued a Certificate of Qualification.

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**Application for certification exams, renewals and ceus are to be completed using the EPA Water and Wastewater Operator Certification Portal online at the link below or by typing in the address:**

- <https://aep.compliance365.ca/cdx/login>
-

## Qualifying for Certification

### Operator Qualifications

To qualify for writing certification exams, the applicants must meet minimum education, experience and training requirements for each level as indicated in the following sections. Substitutions, with limitations, are allowed for both experience and education in Levels II, III and IV (see [Appendix II](#)).

**Table 3 – Summary of Education and Experience Requirements**

| Operator Level | Education/Training (CEUs) Requirements   | Experience Requirements   |
|----------------|--|---|
| Small Systems  | ✓ 0.6 CEUs approved Small Systems Water or Wastewater training   | ✓ 6 months in a Small System approved or registered facility  |
| Level I        | ✓ High School Diploma/Equivalency (12yrs) or GED or official transcript<br>✓ Entry Level Training or Level I prep. 1.2 CEUs  | ✓ 1 year in a Class I or higher approved or registered facility   |
| Level II **    | ✓ High School Diploma/Equivalency (12yrs) or GED or official transcript<br>✓ No additional mandatory training required   | ✓ 3 years in a Class I or higher approved or registered facility  |
| Level III **   | ✓ High School Diploma/Equivalency (14yrs) or GED or official transcript<br>✓ 2 years or 90 CEUs approved post-secondary education in environmental, engineering, or related science field  | ✓ 4 * years, two of which must be in a Class II or higher approved or registered facility<br>✓ 2 years DRC  |
| Level IV **    | ✓ High School Diploma/Equivalency (16yrs) or GED or official transcript<br>✓ 4 years or 180 CEUs approved post-secondary education in environmental, engineering, or related science field | ✓ 5 * years, three of which must be in a Class III or higher approved or registered facility<br>✓ 3 years DRC minimum 2 years in Class II or III facility and 1 year in Class III or IV approved or registered facility |

**Notes:**

\* For Level III Certification, the 4 years of experience must include at least 2 years of DRC

\* For Level IV Certification, the 5 years of experience must include at least 3 years of DRC

\*\* Substitutions are allowed (see [Appendix II](#))

**Other conditions:**

- A minimum of one year must elapse between writing and passing one level of certification exam and applying to write the next level of certification (i.e., one year between Levels I and II).
- Operators may qualify for certification at **one** Level above the class of the facility where operating experience is gained. The **exception** is that operators with wastewater treatment operations experience at lagoon facilities only do **not** qualify for Level II wastewater treatment certification.
- DRC experience only begins after obtaining Level II certification.

### **Mandatory Training Requirements**

Mandatory entry-level training is required for Small Systems Certification and Level I Certification only.

#### **Small Systems Certification**

Six hours or 0.6 CEUs of mandatory **approved** training are required for each category, i.e., small water systems and small wastewater systems.

This can be the Small Water Systems or Small Wastewater Systems courses approved by EPA or other training as approved by EPA.

#### **Level I Certification**

Twelve hours or 1.2 CEUs of approved Mandatory Entry Level Training are required for Level I Certification.

This can be the:

- AWWOA Entry Level Training course developed by EPA
- Level I Certification Preparation Course sponsored by AWWOA
- Entry Level Training offered by Portage College (Lac La Biche)
- Entry Level Training offered by Northern Lakes College, or
- Entry Level Training offered by NAIT Continuing Education
- Graduation from the NAIT Water and Wastewater Technician Program.

## Education Requirements

Minimum education requirements are specified for all levels (see Table 3).

Other than for Small Systems Certification, the minimum requirement is successful completion of Grade 12. Subsequent levels require Post-secondary Education and/or additional CEU's (see Table 3).

Limited substitution using DRC experience or specialized operator training courses are outlined in Appendix II.

### Formal Education

**Grade 12 (12 Years) Successful Completion** – The following may be considered equivalent to Grade 12:

- ✓ Grade 12 Diploma, GED, or
- ✓ Successful completion of relevant and approved trades<sup>\*</sup> program (trade qualified), or
- ✓ Successful completion of post-secondary degree program from a recognized institution, or
- ✓ Successful completion of a high school diploma program from a recognized institution.

**Note:** There shall be no substitution of experience for high school requirement.

**\* If the completion of relevant trades program or relevant University Degree is used for verification of Grade 12 it cannot also be used for post-secondary education.**

The Certification Advisory Committee may chose not to ask for Grade 12 diploma or transcripts verification if the operator has completed any relevant two-year diploma with ASET Technologist Designation or an APEGGA Registered Professional Engineer.

Equivalencies may be approved by Alberta Education. **It is the responsibility of the applicant to obtain an evaluation of equivalency from Alberta Education:**

- [High School Equivalency Requirements](#)
- Telephone: 780 422-5713

**Grade 12 (14 Years)** – The formal education requirement of 14 years for Level III Certification includes:

- ✓ the basic 12 years plus an additional 2 years of approved related, relevant post-secondary formal education, or specialized training (90 CEUs), or
- ✓ a combination of formal education and training.

**Grade 12 (16 Years)** – The formal education requirement of 16 years for Level IV includes:

- ✓ the basic 12 years plus an additional 4 years of approved related, relevant post-secondary formal education, or
- ✓ specialized training (180 CEUs),
- ✓ or a combination of formal education and training. Maximum post-secondary credit allowed it 4 years

**Approved Post-Secondary** – EPA may approve related or relevant post-secondary programs. These may include:

- ✓ degree, diploma and certificate programs from recognized post-secondary institutions.
- ✓ maximum post-secondary credit allowed is 4 years

**The following are considered acceptable for Post-Secondary requirements**

- ✓ Successful completion of relevant trades program (if not used for Grade 12 equivalency-see approved list for % granted), or
- ✓ Successful completion of relevant post-secondary degree program from a recognized institution, or
- ✓ Successful completion of relevant diploma program from a recognized institution, or
- ✓ Partial completion of relevant trades, post-secondary degree, or diploma programs or completion of short courses, evaluated on a case by case basis, or
- ✓ Relevant Correspondence courses.

**Note:** Course work shall be broadly related to drinking water and/or wastewater operator's duties.

Programs accepted for post-secondary requirements can be courses in the following areas:

- ✓ Degree programs accepted at face value including but not limited to, Science, Engineering, Agriculture, Biology, Chemistry, Physics, Mathematics, Laboratory Studies, Hydrogeology, or
- ✓ Diploma programs accepted at face value including but not limited to, Applied Science and Technology, Environmental Technician or Technologist, Laboratory Studies, or
- ✓ Academic portion of Applicable Trades accepted at value assigned by certifying authority (see approved list for % granted) – including but not limited to, Power Engineering, Instrumentation, Plumbing, Electrical, Millwright, Mechanics, or
- ✓ Relevant short course work accepted at value assigned by certifying authority, or
- ✓ Completion of other 4 year University Degree Programs accepted at a maximum of 450 contact hours.

**Note:** Other courses will be reviewed on an individual basis. The course content of these shall be directly related to the delivery of water and wastewater programs.

**Note:** CEUs are considered “post-secondary equivalent”, therefore CEUs are not awarded for training taken as part of on-the-job training.

## **Out of Country Education**

Degrees, diplomas, or certificates from institutions outside of Canada may be compared to similar Canadian programs.

Partial degrees or diplomas are not necessarily approved based on number of completed years. It is the responsibility of the applicant to have such post-secondary education evaluated and to ensure they have all appropriate documentation. Applicants can contact the following organization for more information:

**International Qualification Assessment Service (IQAS)**

9<sup>th</sup> Floor, 108 Street Building

9942 – 108 Street

Edmonton, AB T5K 2J5

Telephone: 780 427-2655

Fax: 780 422-9734

Website: <http://www.humanservices.alberta.ca/AWonline/ETS/4342.html>

## Specialized Training/In-house Training

Applicants lacking in formal post-secondary education can take advantage of specialized operator training courses, or other courses, which have been evaluated and accepted as relevant, and assigned CEU's by the Certification Advisory Committee.

EPA maintains a list of such courses. Other courses can be evaluated on request and may be assigned CEUs if they are applicable to the Program.

Requests for Course Evaluation forms are available from EPA and must include the following information:

- sponsor;
- certificate, degree or diploma awarded;
- topics covered;
- hours per topic; and
- facilitator or instructor (Name and/or position description – institution programs may provide generic instructor position descriptions).

To have in-house training considered for CEUs, it must adhere to the following criteria:

- Written detailed course description including if the material is site specific or applicable to the operation of similar facilities, hours spent on each topic, objectives, outcomes, and evaluation.
- Student must be in a learning environment
- Equipment used for training must not be in service.

One Continuing Education Unit (CEU) is defined as ten contact hours of participation in an organized continuing education experience under responsible sponsorship, capable direction and qualified instruction.

- An **approved** operator training course of 36 contact hours = 3.6 CEUs.
- Forty-five CEUs are considered equivalent to 1 year of formal education.
- Courses less than three hours in duration will not be assigned CEUs.

CEUs will not be given for duplicate training (i.e. an operator will not receive CEU credit on their file for repeating the same course).

Information and Control System Courses (computer courses) and Administration Course (Management) CEUs are limited to 10 for Level III Certification and 20 for Level IV Certification.

## Experience Requirements

### Operating Experience

Operating experience is defined as the time spent working at a water or wastewater facility in satisfactory performance of operation duties or in supervision of persons performing operation duties.

Being qualified to challenge a certification examination means, an operator has met the minimum **OPERATING** experience requirements.

**Small Water and Wastewater Systems, Levels I through IV** experience requirements are outlined in Table 3 - Summary of Education and Experience Requirements.

### Remote Process Control

For the purposes of the Certification Program experience gained while in remote process control cannot be used towards the experience requirement for Certification Levels I, II, or III, where no operational decisions are being made.

For Level IV Certification a **maximum** of 1/3 of experience gained through remote process control may be used towards the Level IV experience requirement.

### Other Experience

PARTIAL credit toward operating or DRC experience requirements MAY be approved by EPA for other related experience. Examples of “related experience” may include work in maintenance, laboratories, different utilities, different certification categories, other related occupations or trades, etc.

### Foreign Experience

PARTIAL credit may be approved by EPA for non-Canadian operating experience. Applicants are required to provide appropriately documented support (HR letters, employer references etc) of their overseas operations as deemed necessary by EPA.



## Direct Responsible Charge (DRC) Experience Requirements

Direct Responsible Charge (DRC) experience means experience gained through accountability for and:

- a. performance of, or
- b. supervision of daily, on-site operational duties for a plant (facility/system) or operating shift but can only occur when the Operator has been authorized or identified by the Owner as being in control of the facility or operating shift.

An operator will gain DRC when he/she has been authorized to perform, on a day-to-day basis, the following types of duties:

1. Review and establish operational parameters for the facility/system, or
2. Control the on-site operations of the facility/system including monitoring, evaluation, and adjustment of the facility or process, or
3. Provide on-site supervision of operators performing either #1 or #2 above.

### Notes:

When shift operation is required, DRC experience can be earned in accordance with the above requirements for each operating shift.

DRC experience is a function of the **position** within the employing organization. An operator can gain DRC during a temporary (e.g. vacation/illness replacement) assignment that meets the above requirements.

More than one person can gain DRC during an operating shift if **each** person meets the above requirements.

**DRC Experience may only be gained after an operator obtains Level II Certification.** There are no DRC experience requirements for Small Systems, Level I, or Level II certification.

### Level III

For Level III certification, at least two years of DRC must be gained after obtaining a Level II certificate, and at least two years DRC experience must be gained in a Class II or higher facility.

### Level IV

For Level IV, at least one year of DRC experience must be gained after receiving a Level III certificate, and at least one year DRC experience must be gained in a Class III or IV facility.

Various substitution models may be used and are allowed as highlighted below and in Appendix II.

## Substitutions

### Substitutions for Formal Education

#### DRC Experience Substituted for Education

Substitutions may be made for required formal education, subject to the following criteria:

#### When Short of Formal Education: Level III, IV Only

For Level III, a maximum of one year of DRC experience in a Class II (or higher) facility may be substituted for one year of the post-secondary formal education requirement for Level III certification.

For Level IV, a maximum of two years of DRC experience gained in a Class III or IV facility after obtaining Level III certification may be substituted for two years of the post-secondary formal education requirement for Level IV certification.

**Note:** DRC substitution for education cannot also be used to meet experience requirements.

#### Operator Training Substituted for Education

Specialized operator training courses, seminars, workshops, technical conferences, etc., as recommended by the Certification Advisory Committee and approved by EPA, may be substituted for formal post-secondary education without limitation. Calculation will be based on CEUs. A list of approved courses is available from EPA.

Mandatory entry-level training is required for Small Systems Certification and Level I certification only.  
See Table 2 under Operator Qualifications

### Formal Education Substituted for Experience

**School** – High school education cannot be credited for substitution value toward any experience requirement since high school education is a basic requirement for certification Levels I to IV.

#### When Short of Experience: Level II Only

For Level II, a maximum of 1 year post-secondary education (or 45 CEU's), can be substituted for one year of operating experience. The minimum experience requirement must be met and at least 50% of all stated experience requirements must be met by actual on-site operating experience in the appropriate type of plant or system.

**Note:**

Education applied in substitution for an experience requirement **cannot** also be applied to the education requirement.

## Examinations

### Qualifying to Write a Certification Exam

Certification eligibility must be confirmed **PRIOR** to submitting an online application in the EPA Water and Wastewater Operator Certification Portal and writing the appropriate certification exam for Small Systems, Level II, Level III, and Level IV. The specific requirements that must be met to qualify to write are also outlined within the Portal. Exams are available in each of the following categories:

- Small Systems - Small Water Systems and Small Wastewater Systems
- Levels I through IV in the four disciplines – Water Treatment, Wastewater Treatment, Water Distribution and Wastewater Collection

### **New** – Option to write Level I exams

Effective January 2020, Level I exams can be challenged prior to meeting certification eligibility. Successfully challenging the exam does not automatically qualify the individual for certification. Exam results will remain valid for up to 3 years from the date the exam was written.

Once **ALL** eligibility requirements have been met, the operator can then apply for certification online through the EPA Water and Wastewater Operator Certification Portal.

Contact: [waterandwastewateroperatorcert@gov.ab.ca](mailto:waterandwastewateroperatorcert@gov.ab.ca) with your legal name, employer name and a valid personal email address, to request an account.

Scheduling the Level I exam using this option is done through **AMP/PSI** only @ <https://www.goamp.com/>

Please be prepared to answer the questions below while registering for the exam:

- 1) Do you understand that if you attest to any false information, Alberta Environment and Parks may initiate disciplinary action against you which may include revocation of and Alberta Environment and Parks you may hold or may gain through this process?
  - ☐ YES
  - ☐ NO
- 2) Are you at least 18 years of age?
  - ☐ YES
  - ☐ NO
- 3) Do you currently reside in Alberta?
  - ☐ YES
  - ☐ NO
- 4) Do you hold a High School Diploma or equivalent?
  - ☐ YES
  - ☐ NO
- 5) Do you intend to seek operator certification through Alberta Environment and Parks?
  - ☐ YES
  - ☐ NO

- 6) Do you currently hold a certification from Alberta Environment and Parks at the same level or higher than the exam you are applying for?
  - ☐ YES
  - ☐ NO
- 7) Have you ever had an Alberta Environment and Parks or other jurisdiction certificate revoked or placed under suspension?
  - ☐ YES
  - ☐ NO
- 8) Are you involved with preparing, administering, or teaching any water or wastewater operator training?
  - ☐ YES
  - ☐ NO
- 9) Are you enrolled in or completed an education or training program in water or wastewater works operations, engineering, science or a related field?
  - ☐ YES
  - ☐ NO
- 10) I understand that if I attempt an examination more than one time in any 30-day period, my exam results will be invalidated, examination forfeited, and I must reapply and pay for the examination again.
  - ☐ YES
  - ☐ NO

## Exam Format

Exam Structure in effect September 2018 applies to all new and rewrite applicants.

Table 4 – 2017 Standardized Exams

| Level                       | Water Treatment (WT) | Water Distribution (WD) | Wastewater Treatment (WWT) | Wastewater Collection (WWC) |
|-----------------------------|----------------------|-------------------------|----------------------------|-----------------------------|
| Number of questions on exam |                      |                         |                            |                             |
| Small Systems               | 50                   |                         | 50                         |                             |
| I                           | 110                  | 110                     | 110                        | 110                         |
| II                          | 110                  | 110                     | 110                        | 110                         |
| III                         | 110                  | 110                     | 110                        | 110                         |
| IV                          | 110                  | 110                     | 110                        | 110                         |

Computer based testing (CBT) are approved every two months for all exams listed above (began September 14, 2018) and runs every two months on a regular basis. **Applications can be submitted on an on-going basis once requirements for certification are met.** Applications processed for CBT will receive email notification indicating the next available session.

**There is a fee for the online exam.** The fee is **\$99.00 USD/each exam** paid directly to the online exam provider. All exams have a two-hour time limit.

## Certification Exams Rewrite (Re-examination)

If a candidate does *not* pass a certification exam, they can apply for re-examination understanding the following restrictions:

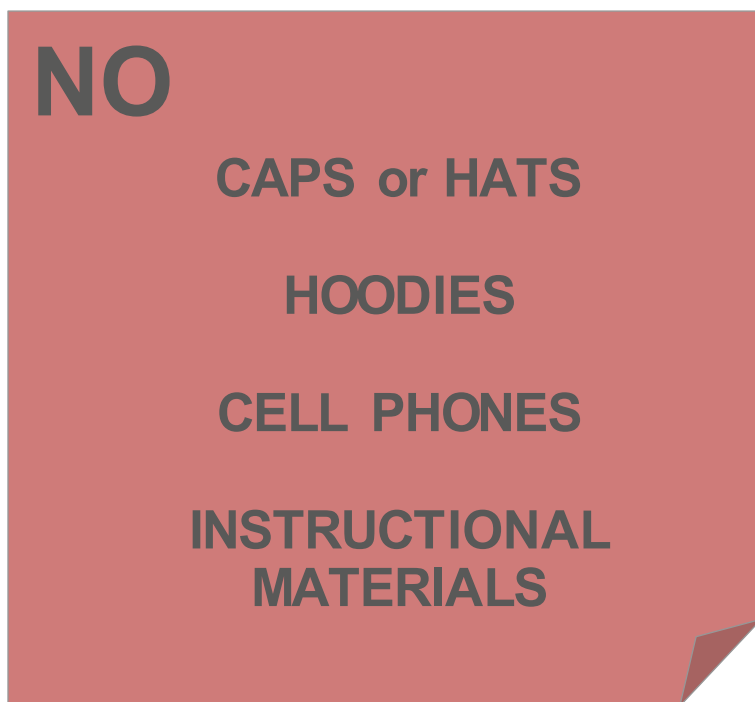
1. A candidate who is unsuccessful in an examination attempt may apply for re-examination **at least 4 months**, but not more than one year, after the unsuccessful attempt. After one year please contact EPA.
2. Should a candidate be unsuccessful in his/her third OR subsequent attempt at an exam, he/she must submit **at least five (5) approved CEUs** since the last attempt. All current education and experience criteria must be met at the time of a new application.
3. Candidates must also be in possession of a valid certificate before attempting to write a certification exam.
4. Exam used for rewrites follow the same format as the standardized exams in [Table 4 – 2017 Standardized Exams](#)

## Exam Security

EPA takes exam security very seriously. Operators who attend certification exams will not be permitted to bring in the following:

- Hats
- Hoodies
- Electronic Devices of Any Kind
- Cell Phones

If caught with a cell phone during the exam session, the operator will be asked to leave, and will receive a mark of zero for his exam.



## Certification Code of Ethics

### Certified Operator Code of Conduct

All operators who wish to challenge a certification exam will be required to sign the Certified Operator Code of Conduct **before** receiving their Certificate of Qualification. Once certified, an operator will be required to re-sign this document at every renewal. Operators who break the code may experience disciplinary actions, including but not limited to, the revocation or suspension of their Certificate of Qualification. (see [Appendix VI](#))

### Examination Code of Conduct

Through the online application form an Operator must agree to the terms of the Examination Code of Conduct written below. If an examinee refuses to sign the Code of Conduct approval to write, the Certification exam will be withdrawn. By signing the agreement ([checking box with Compliance365 at time of application](#)) the examinee agrees to refrain from participating in any of the following activities or practices:

- Falsifying information or documentation for the purposes of obtaining a water and/or wastewater operator certificate;
- Cheating to aid his or her self or another person to pass a certification examination;
- Copying examination content by any method;
- Removing any of the provided examination materials from the examination room; and
- Possessing or using any non-authorized materials or equipment during an examination, such as, but not limited to cell phones, or other electronic devices (except for non-programmable calculators)

By checking the appropriate box on last page of the application form, the examinee understands that *any* violation of the terms will lead to disciplinary actions, which may include, but not limited to: the voiding of examination results, being barred from writing future certification examinations, or suspending or revoking a certificate of qualification.

## Certificate of Qualification

Once an applicant has successfully challenged a Certification exam, EPA will issue a Certificate of Qualification.

This certificate will specify the certificate number, name of the individual, the issue date, expiry date, and the type and level (i.e., Water Treatment I) of certification.



*All certificates have an expiry date of December 31<sup>st</sup>.*

## Certificate Upgrading

When an applicant holding an active certificate has met the minimum requirements of the Certification Program for a higher level or for an additional category, and has passed the appropriate exam, a new certificate reflecting the new certification status is issued. **This event does not change the original expiry date.**

## Certificate Renewal

Certificates must be renewed every three (3) years to ensure that the individual continues to meet Certification Program requirements in a fashion satisfactory to EPA. **Conditional Certificates are non-renewable.**

There are two options to renew a certificate.

### Option 1. Active in the Industry

An operator must obtain a minimum of twelve months of operating experience in the previous three years **and** must obtain the minimum Continuing Education Units (CEUs) requirement **during** the previous three-year renewal period.

- If certified at Small System an operator must obtain a total of 1.8 CEUs during the three-year renewal period prior to and including December 31, with no more than **0.6 CEU's of safety or non-discipline specific training** included in the CEU requirement
- If certified at Level I or Level II an operator must obtain a total of 3.6 CEUs during the three-year renewal period. Training will need to be discipline specific (**all four disciplines**), with no more than **1.2 CEU's of safety or non-discipline specific training** included in the CEU requirement
- If certified at Level III or Level IV an operator must obtain 3.6 CEUs **per Certification Discipline. Discipline being Water or Wastewater.** Training will need to be discipline specific, with no more than **1.2 CEU's of safety or non-discipline specific training** included in the CEU requirement per discipline
- If an operator obtains Level III or IV certification in **both** Water and Wastewater, a minimum of 7.2 CEUs are required. Training will need to be discipline specific with no more than one-third (**2.4 CEU's of safety or non-discipline specific training**) included for each renewal period.
  - If an operator obtains an additional Level III certification category that puts the operator into requiring 3.6 CEUs per certification discipline, in the last year of his certificate period, the requirement of 7.2 CEUs will be dropped to 3.6 CEUs for the first renewal period only.

Effective July 1, 2020  
a fee of \$130.00 is  
required for  
renewal/reactivation

Renewal  
notices are  
sent to  
operators well  
in advance of  
the renewal  
date via "email"

Table 5 – Renewal requirement

| Certified                             | Training (CEU) Requirement |                | Safety/Non Discipline specific course allowed |                |
|---------------------------------------|----------------------------|----------------|---|----------------|
|                                       | w/experience               | w/o experience | w/experience                                  | w/o experience |
| Small Systems water and/or wastewater | <b>1.8</b>                 | <b>1.8</b>     | <b>0.6</b>                                    | <b>0.6</b>     |
| Level I, II water and/or wastewater   | <b>3.6</b>                 | <b>3.6</b>     | <b>1.2</b>                                    | <b>1.2</b>     |
| Level III or IV water or wastewater   | <b>3.6</b>                 | <b>3.6</b>     | <b>1.2</b>                                    | <b>1.2</b>     |
| Level III or IV water and wastewater  | <b>7.2</b>                 | <b>7.2</b>     | <b>2.4</b>                                    | <b>2.4</b>     |

For renewal purposes only, remote process control experience is gained at a **maximum** of 1/3 of the experience requirement.



**Active in the industry** also includes operators who have transitioned to other roles beyond day-to-day operating duties as long as they are still actively participating in the water and wastewater industry. These positions include but are not limited to the following:

- Training/Instructing
- Supervising/Managing
- Capital project work
- Maintenance

Positions such as these will be considered for renewal of certification but will not be eligible for obtaining higher levels of certification.

## Option 2. Non-Active in the Industry

If an operator does not have current experience in the discipline(s) held, they can choose any one of the following for a maximum of two consecutive renewal periods only:

- *Continuing education:* An operator must obtain the CEU requirement for their applicable level of certification **during** the previous three-year renewal period.  
Training will need to be discipline specific, with no more than one-third CEU's of safety and/or non-discipline specific training included in the CEU requirement for Level I/II/III/IV. [see Table 5 – Renewal Requirement]

OR

- *Re-examination:* An operator may re-write the certification exam at the appropriate level. The rewrite must be **within** the last year of the renewal period. The deadline for all applicants using this option to renew is September.

A list of courses approved for CEUs is available from EPA Operator Certification Portal online at:

- <http://www.alberta.ca/water-wastewater-operator-certification.aspx>

**Please note: Training must be approved prior to Renewal application submission. Failure to furnish the required information on a renewal application will hinder the renewal process.**

CEUs must be:

1. Relevant
2. Approved
3. Acquired during renewal period

## Certificate of Re-activation

If a certificate has been inactive for less than three years from the date it became inactive, it may be reactivated upon request:

1. If the applicant is currently working in the appropriate classification of facility.
2. The operator has completed and submitted the necessary CEUs required for the three year period.
3. A current job description must be uploaded to their Work Experience profile within the portal.
4. **Reactivation will incur a fee of \$130 CDN for renewal period.**
5. The certification expiry date will remain the same from the time the operator first became certified, with all certificates expiring on December 31.

If a certificate has been inactive for more than three years from the date it became inactive, it may be reactivated upon request:

1. If the applicant is currently working at the appropriate classification of facility and
2. The operator has a current job description. A job description and resume must be submitted together with the request by email to [waterandwastewateroperatorcert@gov.ab.ca](mailto:waterandwastewateroperatorcert@gov.ab.ca)
3. If the operator has never completed the Mandatory Entry Level Training Course, it will be required to be completed before the operator will be eligible to write the exam.
4. The applicant will be required to re-write the appropriate discipline and level of exam.
  - a. For example, if an operator was certified with WT II and WWT I, they would be required to re-write WT II and WWT I exams.
5. **The applicant will also be required to pay the reactivation fee along with the exam fee to rewrite the exam(s).**
6. The above actions will trigger a change to the expiry date. The certification expiry date will be three years from the time the reactivation exam is written, with all certificates expiring on December 31.

## Reciprocity



Since the inception of the Agreement on Internal Trade (AIT) on August 2009, each province and territory are required to issue the same type and level of drinking water and wastewater certificate which have been issued in other provinces and territories provided that the certificate is in good standing.

Provinces and territories may require additional administrative or “non-material” requirements such as, but not limited to, the payment of fees, confirmation that the operator’s certificate is in good standing, training/testing on applicable provincial and territorial legislation or verification of employment as an operator in the province or territory.

On written application, certificates will be issued at a comparable level, without examination, to any person **operating** an Alberta facility requiring certified operators, who holds ***valid operator certification*** from any province, or equivalent certifying authority.

An application for certification by reciprocity must be completed and submitted to EPA.

- Only valid certificates are transferrable.
- Exams written, but no certificates issued, are non-transferrable.
- Certificates of Qualification issued by reciprocity will be issued for the remaining period in the original certification to the maximum of 3 years.
- If an operator holds additional certifications than those required by the approved facilities they will be operating in Alberta, the certifications will be granted, but upon first renewal, Alberta renewal requirements will be applied.
- Certifications obtained by reciprocity will be granted at the Level held in the originating jurisdiction, but upon first renewal, Alberta renewal requirements will be applied.

There are currently no fees in Alberta for Reciprocity applications.

## Revocation

EPA shall cancel or suspend a certificate:

- if the person to whom the certificate was issued has contravened the *Environmental Protection and Enhancement Act* or Regulations under the Act;
- if it is found that the person has practiced fraud or deception;
- if reasonable care, judgment or the application of the operator's knowledge or ability was not used in the performance of operation duties;
- if the individual is incompetent or unable to perform prescribed duties properly;
- if the individual fails to comply with the Certified Operator Code of Conduct; or
- if for any other reason the individual is no longer qualified to operate a municipal or public facility

*“Due to the importance of certified operators in protecting public health and safety, and the necessity for certifying authorities to rely on self-reporting by certified operators, any instance of falsification shall be considered a serious breach of the public trust that should be met with severe penalties” (ABC Model Standards for Operator Certification).*

\*See also Appendix VI for additional details.

# Appeals

## Appeals related to the interpretation of the Guidelines

In the event that an individual believes that these Guidelines have been misinterpreted, applied inequitably or special circumstances have not been adequately considered, the following appeal process may be used:

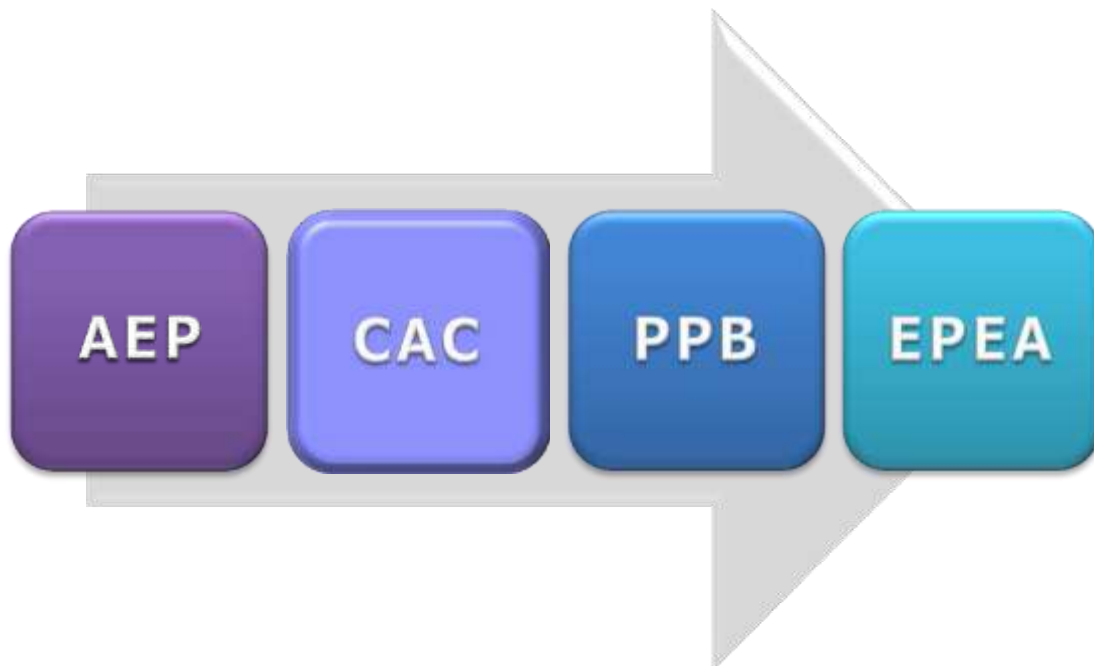
1. Written appeal to EPA Certification.
2. Written appeal to the Certification Advisory Committee.

Guideline related appeals include:

- exam application decisions,
- renewal application decisions,
- reactivation decisions, and
- assigned CEU evaluation decisions.

## Appeals related to Suspension and Cancellation of Operator Certification

The guideline related appeal process above does not apply to suspensions or full revocation (cancellation) of certifications outlined in the Disciplinary Matrix. (Appendix VI). Please refer to the appeal process outlined in EPEA, Section 91. (Appendix V)



## **Certification Advisory Committee**

### **Duties of the Certification Advisory Committee**

The Committee meets, as required by EPA, to make recommendations on the following items:

- a. certification program policy;
- b. applications for certification;
- c. facility classifications;
- d. applications for certification renewal;
- e. certification examinations;
- f. evaluation of specific training/education with respect to the Program;
- g. experience and education relevance;
- h. determination of Certification Program fees; and
- i. other matters upon request.

### **Certification Advisory Committee Members**

Members of the Certification Advisory Committee are appointed by the Minister to provide review and recommendations concerning the Certification Program. The Committee may consist of the following representatives:

- a. one representative from EPA;
- b. one municipal government employee in a managerial position (not elected) responsible for potable water supply and/or wastewater system;
- c. one management representative from an industry that is required to have operators certified under the program;
- d. one representative of the Alberta Water and Wastewater Operators Association;
- e. one faculty member of a post-secondary institution where that person conducts training related to municipal water supply and wastewater operations;
- f. four active operating personnel holding valid certificates with representation from both the water and wastewater fields;
- g. one active operating person holding a valid certificate for the domestic wastewater or potable water operations in an industrial facility;
- h. one representative from EPA from a regional office; and
- i. one other person at the discretion of the Minister.

The Chairman of the Committee is appointed by EPA from among the Committee members. The Chairmen will not be an EPA rep. A quorum for meetings is six members. The Committee members typically serve three-year terms, which are staggered so that at least two of the positions will expire each year. Committee members may be re-appointed.

## APPENDIX I – Definitions

The definitions in this section are specific to the Alberta Environment Water and Wastewater Operator Certification Program.

### Act

Refers to the Alberta *Environmental Protection and Enhancement Act* (EPEA).

### Approval

Means an approval issued under EPEA in respect of an activity, and includes renewal of an approval.

### Certified Operator

Is a person who holds a valid Certificate of Qualification issued under section 2 of the Wastewater and Storm Drainage (Ministerial) Regulation or under section 16 of the Potable Water Regulation.

### Continuing Education Unit (CEU)

1 CEU is 10 contact hours of participation in an organized relevant continuing education experience (training) under responsible sponsorship, capable direction, and qualified instruction as approved by the Certification Advisory Committee.

### Direct Responsible Charge (DRC)

Means experience gained through accountability for and:

- a. performance of, or
- b. supervision of

daily, on-site operational duties for a plant (or system) or operating shift, but can only occur when the Operator has been authorized or identified by the Owner as being in control of the facility or operating shift.

### Experience

(See Operating Experience) – Means the time spent working at a water or wastewater facility in satisfactory performance of operation or supervision duties (See Appendix IV).

### Grade 12

Means a high school diploma. When grade 12 completion is in doubt, **it is the responsibility of the applicant** to obtain an evaluation by Alberta Education.

### General Education Development (GED)

One way to earn a High School Equivalency Diploma for any Albertan who has not completed a formal high school education is to write the General Educational Development tests. There are five tests (Social Studies, Science, Writing Skills, Interpreting Literature and the Arts, and Mathematics), which must be written and passed in order to be granted a High School Equivalency Diploma.

Information on obtaining writing the GED tests is available from Alberta Education:

- [High School Equivalency Requirements](#)  
Phone: 780 427-0010

### High School Equivalency Diploma

An Albertan who has not completed a formal high school education may earn a High School Equivalency Diploma by accumulating 100 credits as stipulated by Alberta Education, or by writing the General Educational Development Tests (GED). For more information contact Alberta Education at 780 427-0010.

### In-house Training

In-house training is a training program for learning opportunities developed by the organization in which it is used. Training may be required to be provided to employees as part of legislative requirements for industry performance and safety standards or continuing education requirements.

### On the Job Training

Training that takes place at the work site and is supervised by a manager or an experienced co-worker. On-the-job training is considered work experience and **not** eligible for CEU assignment.

### Operation

Means the active daily on-site process of ensuring that a facility accomplishes its defined purpose. Operation may include many elements. They are described further in Appendix IV.

## Operating Experience

Means the time spent working at a water or wastewater facility in satisfactory performance of operation duties or supervision of persons performing operations duties. Current experience is considered experience gained in the past three years, where applicable.

## Operator

Is a person who performs day-to-day activities primarily consisting of the control of a water treatment plant, wastewater treatment plant, water distribution system or wastewater collection system. Appendix IV provides more details.

## Potable Water

Means water that is supplied by a waterworks system and is used for drinking, cooking, dish washing or other domestic purposes requiring water that is suitable for human consumption.

## Registration

Is a registration issued under EPEA in respect of an activity, and includes renewal of a registration.

## Remote Monitoring

Is the ability to continuously monitor operational conditions from a remote location. Remote monitoring shall also include the ability to be immediately notified of adverse operational conditions through callout alarms or equivalent. Examples of adverse conditions include:

- security breach
- power failure
- critical equipment failure
- high/low chlorine concentrations
- high or low reservoir levels
- failure to achieve required CT disinfection
- failure of other disinfection systems such as UV or ozone
- filter failure (high turbidity levels)
- distribution line pressure loss

## Remote Process Control

Includes both remote monitoring and the ability to make operational or process adjustments from a remote location. This is usually accomplished through remote access to a SCADA system.

## Shift Operation

Is defined as operation which requires operator on-site 24 hours per day, 7 days per week, 365 days per year.

## Under the Direction of the Certified Operator

Means that the certified operator in Charge (Supervising Operator) is physically present and monitoring the work being performed as outlined in the attendance requirements, and:

- stays informed and provides verbal or written instruction of the operation of the waterworks, as required between site visits as outlined in this section to ensure proper operation of the waterworks system;
- is responsible for (along with the Approval or Registration holder) verifying the accuracy, completeness and submission of all information to the department in the monthly and annual reports.
- physically attends the waterworks during any emergency or significant waterworks process control problems.

## Wastewater Collection System (WWC)

Is the portion of the wastewater system that receives wastewater from the premises of the discharger and conveys it to the point of treatment or disposal.

## Wastewater Treatment Plant (WWT)

Is the portion of the wastewater system that is used in the treatment of domestic wastewater, including effluent disposal and solids handling treatment and disposal.

## Water Distribution System (WD)

Is the portion of the water system in which water is stored and conveyed from the water treatment plant or other supply point to the consumers.

## Water Treatment Plant (WT)

Is the portion of a water system that in some way alters the physical, chemical, or bacteriological quality of the water. A facility that chlorinates groundwater, but has no other process, is not considered to be a water treatment plant.

## Year

Is defined as one calendar year or 12 months' work experience. If it is impossible to determine experience gained in terms of years or 12-month periods then, 1800 hours may be considered equivalent to 1 year. If counting hours, it will never be sooner than one calendar year, as Overtime and On Call hours are NOT applicable.



## APPENDIX II – Guide to Experience and Education Qualifications and Substitutions

### When Short of Experience: Level II Only

| This Education or Training   | May be Substituted for      | Limit                         |
|--|-----------------------------|-------------------------------|
| High School Education  | No credit                   | –                             |
| 1 Year relevant post-secondary education   | 1 year operating experience | 50% of experience requirement |
| 1 year (expressed as 45 CEUs) relevant and specialized operator training as approved | 1 year operating experience | 50% of experience requirement |

**Note:**

**For Levels II, substitutions may be made for required experience, but the minimum experience requirement must be met and at least 50% of all stated experience requirements must be met by actual on-site operating experience in the appropriate type of plant or system.**

### When Short of Formal Education: Level III, IV Only

| This Education or Training   | May be Substituted for          | Limit                                       |
|--|---------------------------------|---|
| For Level III, DRC (only)<br>1 year DRC experience in Class II or higher facility    | 1 year post-secondary education | 50% of post-secondary education requirement |
| For Level IV, DRC (only)<br>1 year DRC experience in Class III or IV facility        | 1 year post-secondary education | 50% of post-secondary education requirement |
| 1 year (expressed as 45 CEUs) relevant and specialized operator training as approved | 1 year formal education         | None  |

## APPENDIX III – Applicant Worksheets/Checklists

### SMALL SYSTEMS

Applicant worksheets are made available for use to determine if an operator has met the requirements prior to applying for certification. Please consider using it and returning it with the completed application for certification.

#### SMALL SYSTEMS OPERATIONS

##### A. Education

###### Minimum 0.6 CEUs Applicable Training

- AWWOA Small Water Systems Course (0.6 CEU's) ☐
- AWWOA Small Wastewater Systems Course (0.6CEU's) ☐
- Other Applicable approved training:  
\_\_\_\_\_ ☐

☐

##### B. Experience

Minimum 6 months of current operating experience  
in a municipal facility. \_\_\_\_\_ months

☐☐

**Please read the application form carefully. Complete ALL sections.  
Obtain the necessary signatures and provide all the necessary attachments**

## Applicant Worksheets/Checklists

### LEVEL I CERTIFICATION

Applicant worksheets are made available for use to determine if an operator has met the requirements prior to applying for certification. Please consider using it and returning it with the completed application for certification.

#### LEVEL I CERTIFICATION

##### A. Education

|  |                          |
|--|--------------------------|
| High School Diploma, General Educational Development (GED) transcript or High School Equivalency Diploma required. | <input type="checkbox"/> |
| Approved applicable entry-level training (minimum 1.2 CEUs) _____ # CEUs   | <input type="checkbox"/> |

##### B. Experience

|  |                          |
|--|--------------------------|
| Minimum 1-year current operating experience in a municipal facility. _____ # years | <input type="checkbox"/> |
|--|--------------------------|

**Note 1:** If you are applying for certification in more than one of the categories (Water Treatment, Wastewater Treatment, Water Distribution, Wastewater Collection) you must have worked in **EACH** category during the same year. It is possible to qualify for more than one category during the same year.

**Note 2:** Please indicate on your application, your **OPERATIONS** duties in **EACH** of the categories you wish to have considered.

**Please read the application form carefully. Complete ALL sections.  
Obtain the necessary signatures and provide all the necessary attachments**

## Applicant Worksheets/Checklists

### LEVEL II CERTIFICATION

Applicant worksheets are made available for use to determine if an operator has met the requirements prior to applying for certification. Please consider using it and returning it with the completed application for certification.

#### LEVEL II CERTIFICATION

##### A. Education

High School Diploma, General Educational Development (GED) transcript or High School Equivalency Diploma required.

☐

##### B. Experience

Minimum of 3 years current operating experience in a municipal facility  
\_\_\_\_\_ # years

☐

or

2 years of current operating experience in a municipal facility,  
plus 1 year post-secondary education (45.0 CEUs)

☐

Copy of relevant education documentation must be attached.

☐

##### C. Elapsed Time

On year since obtaining Level I certification.

Date of Level I Examination: \_\_\_\_\_

☐

**Note 1:** If you are applying for certification in more than one of the categories (Water Treatment, Wastewater Treatment, Water Distribution, Wastewater Collection) you must have worked in **EACH** category within the time period (the same 2/3 years MAY apply to more than one category).

**Note 2:** Please indicate on your application, your **OPERATIONS** duties in **EACH** of the categories you wish to have considered.

**Please read the application form carefully. Complete ALL sections.  
Obtain the necessary signatures and provide all the necessary attachments**

## Applicant Worksheets/Checklists

### LEVEL III CERTIFICATION

Applicant worksheets are made available for use to determine if an operator has met the requirements prior to applying for certification. Please consider using it and returning it with the completed application for certification.

#### LEVEL III CERTIFICATION

##### A. Education

High School Diploma, General Educational Development (GED) transcript or High School Equivalency Diploma required.

☐

Two years approved relevant post-secondary education or 90 CEUs  
**or**

\_\_\_\_\_ ☐

One year relevant post-secondary education plus 45.0 CEUs  
**or**

\_\_\_\_\_ ☐

One year relevant post-secondary education or 45.0 CEUs plus one extra year of DRC experience

**Copy of relevant education documentation must be attached.**

\_\_\_\_\_ ☐

☐

##### B. Experience

Four years current operating experience in a approved facility or system, at least two of which must be in a Class II or higher facility

\_\_\_\_\_ years ☐

**A copy of your current organizational chart MUST be attached**

\_\_\_\_\_ ☐

**Applications received without organizational chart will be considered incomplete.**

☐

##### C. DRC Experience (may be part of the four years' operating experience (see "B"))

Minimum two years DRC experience

*Note: Additional DRC (maximum 1 year) may be used as substitution for Education in "A" above.*

\_\_\_\_\_ years

***Note: DRC Experience does not start to accumulate until Level II Certification has been achieved.***

☐

##### D. Elapsed Time

One year since obtaining Level II Certification

Date of Level II Examination: \_\_\_\_\_

☐

**Please read the application form carefully. Complete ALL sections.  
Obtain the necessary signatures and provide all the necessary attachments**

## Applicant Worksheets/Checklists

### LEVEL IV CERTIFICATION

Applicant worksheets are made available for use to determine if an operator has met the requirements prior to applying for certification. Please consider using it and returning it with the completed application for certification.

#### LEVEL IV CERTIFICATION

##### A. Education

High School Diploma, General Educational Development (GED) transcript or High School Equivalency Diploma required.



Four years approved post-secondary education or 180 CEUs \_\_\_\_\_ ☐

Minimum two years post-secondary education or 90CEUs

Substitutions used \_\_\_\_\_ ☐

Copy of relevant education documentation must be attached.



##### B. Experience

Minimum five years current operating experience in an approved facility or system, at least three of which must be in a Class III or IV facility

A copy of your current organizational chart MUST be attached \_\_\_\_\_ years



Applications received without organizational chart will be considered incomplete.



##### C. DRC Experience (has to be part of the five years' operating experience (see "B"))

Minimum two years DRC experience in a Class II or III facility and one year DRC experience in a Class III or IV facility

*Note: Additional DRC (maximum 2 years) may be used as substitution for Education in "A" above.*

\_\_\_\_\_ years

***Note: DRC Experience does not start to accumulate until Level II Certification has been achieved.***



##### D. Elapsed Time

One year since obtaining Level III Certification

Date of Level III Examination: \_\_\_\_\_



**Please read the application form carefully. Completion ALL sections.  
Obtain the necessary signatures and provide all the necessary attachments**

## **APPENDIX IV – Definition of “Operate” for the Purposes of the Certification Program and Examples of Day-to-Day Operating Duties**

The following examples of day-to-day operating duties are for your reference only.  
Please **DO NOT** submit this document as a description of your own job duties.

### **Water Treatment Plant Operation**

**“Operate”** means the performance of day-to-day activities primarily consisting of the control of any process, which affects the quality of the product.

**“Operate”** may include performance of day-to-day maintenance, laboratory, administration, special study or engineering work so long as the primary function of the operator involves process control.

**“Operate”** does NOT include maintenance, laboratory, administration, special study or engineering functions not directly involved with major day-to-day process control activities.

### **Typical Duties of a Water Treatment Plant Operator**

1. Start up, shut down and make periodic operating checks of plant equipment, such as pumping systems, chemical feeders, auxiliary equipment (compressors), measuring and control systems.
2. Perform preventive maintenance, such as lubrication, operating adjustments, cleaning and painting equipment.
3. Load and unload chemicals, such as chlorine cylinders, bulk liquids, powdered chemicals and bagged chemicals using chemical-handling equipment such as fork lifts and hoists, and by hand.
4. Perform corrective maintenance on plant mechanical equipment, for example, chemical feed pumps and small units.
5. Maintain plant records, including operating logs, daily diaries, monthly and annual reports, chemical inventories, and data logs.
6. Monitor the status of plant operating guidelines, such as flows, pressures, chemical feeds, levels, and water quality indicators by reference to measuring systems.
7. Collect representative water samples and perform laboratory tests on samples for turbidity, colour, odour, chlorine residual, and other tests as required.
8. Operate and maintain wells.
9. Order chemicals, repair parts and tools.
10. Estimate and justify budget needs for equipment and supplies.
11. Conduct safety inspections, follow safety rules for plant operations, and develop and conduct tailgate safety meetings.
12. Discuss water quality with the public, conduct plant tours (especially for school children), and participate in department/municipal public relations program.
13. Communicate effectively with other operators and supervisors on the appropriate technical level.
14. Make calculations to determine chemical feed rates, flow quantities, detention and contact times, and hydraulic loading as required for plant operation.
15. Fulfill all requirements of the approval, or registration.
16. Make or direct emergency repairs or adjustments to the facilities without compromising the quality of the water.

17. Monitor facility processes and make the necessary adjustments to ensure optimum treatment.
18. Establish and adjust chemical feed rates.
19. Determine need for and perform filter backwash, clarifier blow-down, etc.

## **Water Distribution Operation**

**“Operate”** means the performance of day-to-day activities primarily consisting of the control of the distribution network, which affects the quality, quantity, or reliability of water service to the customer. This includes the installation, operation, repair and maintenance of water distribution lines, service connections, and appurtenances such as valves and hydrants on a day-to-day basis.

**“Operate”** may include performance of day-to-day maintenance, laboratory, administration, or engineering work or duties with respect to reservoirs, transmission lines, pumping stations, meters and pressure reducing/regulating stations so long as the primary function of the operator involves control of the distribution network.

**“Operate”** does NOT include maintenance, laboratory, administration, engineering, reservoir, transmission, metering, pumping or pressure/regulating functions not directly involved with major day-to-day distribution network activities.

### **Typical Duties of a Water Distribution System Operator**

1. Place barricades, signs, and traffic cones around work sites to protect operators and public.
2. Excavate trenches and install shoring.
3. Lay, connect, test and disinfect water mains.
4. Tap into water mains.
5. Flush and clean water mains.
6. Locate and repair water main leaks.
7. Read and update water distribution system maps and “as built” plans.
8. Collect and transport water samples.—
9. Clean and disinfect storage tanks and reservoirs.
10. Protect water mains and storage facilities from corrosion effects.
11. Observe pump motors to detect unusual noises, vibrations, or excessive heat.
13. Adjust and clean pump seals and packing glands and clean mechanical seals.
14. Repair and overhaul pumps, motors, chlorinators, and control valves.
15. Safely load and unload dry and liquid chemicals.
16. Keep records and prepare reports.
17. Estimate and justify budget requests for supplies and equipment.
18. Start up or shut down pumps as necessary to regulate system flows and pressures.
19. Perform efficiency tests on pumps and related equipment.
20. Troubleshoot minor electrical and mechanical equipment problems and correct.
21. Detect hazardous atmospheres in confined spaces and correct before entry.
22. Conduct safety inspections, follow safety rules for waterworks facilities, and develop and conduct tailgate safety meetings.



23. Troubleshoot to locate the causes of water quality complaints.
24. Discuss with the public their concerns regarding the quality of the water they receive.
25. Communicate effectively with other operators and supervisors on the appropriate technical level.
26. Test, repair, and maintain fire hydrants.
27. Thaw frozen lines and service.
28. Locate and eliminate cross-connection or potential cross-connection.
29. Read water meters.
30. Collect and submit water samples.
31. Locate, operate, maintain and repair valves.

## **Wastewater Treatment Operation**

**“Operate”** means the performance of day-to-day activities primarily consisting of the control of any process, which affects the quality of the wastewater effluent.

**“Operate”** may include performance of day-to-day maintenance, laboratory, administration, special study or engineering work so long as the primary function of the operator involves process control.

**“Operate”** does NOT include maintenance, laboratory, administration, special study or engineering functions not directly involved with major day-to-day process control operational activities.

## **Typical Duties of a Wastewater Treatment Plant Operator**

1. Start up, shut down and make periodic operating checks of plant equipment, such as pumping systems, chemical feeders, auxiliary equipment (compressors), measuring and control systems.
2. Perform preventive maintenance, such as lubrication, operating adjustments, cleaning and painting equipment.
3. Load and unload chemicals, such as chlorine cylinders, bulk liquids, powdered chemicals and bagged chemicals using chemical-handling equipment such as fork lifts and hoists, and by hand.
4. Perform corrective maintenance on plant mechanical equipment, for example, chemical feed pumps and small units.
5. Maintain plant records, including operating logs, daily diaries, monthly and annual reports, chemical inventories, and data logs.
6. Monitor the status of plant operating guidelines, such as flows, pressures, chemical feeds, levels, and water quality indicators by reference to measuring systems and make the appropriate process changes.
7. Collect representative water samples and perform laboratory tests on samples for BODs, Suspended Solids, chlorine residual, and other tests as required.
8. Order chemicals, repair parts and tools.
9. Estimate and justify budget needs for equipment and supplies.
10. Conduct safety inspections, follow safety rules for plant operations, and develop and conduct tailgate safety meetings.
11. Discuss water pollution control with the public, conduct plant tours (especially for school children), and participate in department/municipal public relations program.
12. Communicate effectively with other operators and supervisors on the appropriate technical level.

13. Make calculations to determine chemical feed rates, flow quantities, detention and contact times, and hydraulic loading as required for plant operation.
14. Interpret laboratory results and make the appropriate process changes to ensure optimum plant operation.
15. Fulfill all requirements of the Approval or registration.
16. Clean and dispose of debris from bar screens, grit tanks, and sumps in a safe and acceptable manner.
17. Monitor effluent impact on receiving stream and drainage courses.
18. Manage the treatment and disposal of sludge.
19. Monitor and adjust rates of sludge generation, return and wasting.

## **Wastewater Collection Operation**

**“Operate”** means the performance of day-to-day activities primarily consisting of the control of the collection network, which affects the quality of the wastewater, the state of repair of the sewers or appurtenances, or the reliability of the collection service. This includes the installation, operation, repair and maintenance of wastewater collection sewers, service connections, manholes and pumping or lift stations.

**“Operate”** may include performance of day to day maintenance, laboratory, administration, or engineering work or duties with respect to lift stations, force mains, pumping stations, wastewater treatment facilities or collection lines so long as the primary function of the operator involves control of the collection network.

**“Operate”** does not include maintenance, laboratory, administration, or engineering or pumping functions not directly involved with major day-to-day collection network activities

## **Typical Duties of a Wastewater Collection System Operator**

1. Place barricades, signs, and traffic cones around work sites to protect operators and public.
2. Excavate trenches and install shoring.
3. Lay, connect, and test sewer lines.
4. Tap into sewer lines.
5. Flush and clean sewer lines.
6. Read and update wastewater collection system maps and “as built” plans.
7. Operate and maintain wastewater lift stations.
8. Observe pump motors to detect unusual noises, vibrations, or excessive heat.
9. Adjust and clean pump seals and packing glands and also clean mechanical seals.
10. Repair and overhaul pumps, motors, chlorinators, and control valves.
11. Safely load and unload dry and liquid chemicals.
12. Keep records and prepare reports.
13. Estimate and justify budget requests for supplies and equipment.
14. Start up or shut down pumps as necessary to regulate system flows and pressures.
15. Perform efficiency tests on pumps and related equipment.
16. Troubleshoot minor electrical and mechanical equipment problems and correct.
17. Conduct safety inspections, follow safety rules for wastewater facilities, and develop and conduct tailgate safety programs.

18. Detect hazardous atmospheres in confined spaces and correct before entry.
19. Troubleshoot to locate the causes of customer complaints.
20. Communicate effectively with other operators and supervisors on the technical level expected for your position.
21. Check lift station ventilation system.
22. Locate and eliminate cross-connections to storm sewers.

## **APPENDIX V –** **Summary of Applicable Legislation**

Certification of water and wastewater operators is regulated in Alberta by the following legislation:

- *Environmental Protection and Enhancement Act*
- Potable Water Regulations (Alberta Regulation 277/2003)
- Code of Practice for a Waterworks System Consisting Solely of a Water Distribution System
- Wastewater and Storm Drainage Regulation (Alberta Regulation 119/1993)
- Wastewater and Storm Drainage (Ministerial) Regulation (Alberta Regulation 120/1993)
- Activities Designation Regulation (Alberta Regulation 276/2003)

The official Act and Regulations as published in the Alberta Gazette, should be consulted for purposes of official interpretation.

Copies may be obtained from the Queens Printer for Alberta at the following addresses:

### **Publication Services Publications Services**

Main Floor Park Plaza

10611 – 98 Avenue

Edmonton, AB, T5G 2Y5

T2P 4E8 Phone: 780 427-4952 Phone: 403 297-6251

Main Floor, McDougall Center

455 – 6 Street SW

Calgary, AB,

Following are definitions and a brief summary of the applicable parts of the legislation.

### **A. *Environmental Protection and Enhancement Act***

#### **s.1 Definitions**

**Approval** means an approval issued under this Act in respect of an activity, and includes the renewal of an approval.

**Certificate of Qualification** means a certificate of qualification issued under section 82, including the renewal of such a certificate, and a certificate or other qualification from another jurisdiction that is accepted under the regulations as a certificate of qualification for the purposes of this Act.

**Local authority** means:

- i. the corporation of a city, town, village, summer village, municipal district or specialized municipality,
- ii. in the case of an improvement district, the Minister responsible for the *Municipal Government Act*,
- iii. in the case of a special area, the Minister responsible for the *Special Areas Act*,
- iv. a settlement under the *Métis Settlements Act*,
- v. a regional services commission under Part 15.1 of the *Municipal Government Act*; and
- vi. a regional health authority under the *Regional Health Authorities Act*.

**Minister** means the Minister determined under section 16 of the *Government Organization Act* as the Minister responsible for this Act.

**Municipality** means the geographical area of a city, town, village, summer village, municipal district, specialized municipality, improvement district, special area or settlement area within the meaning of the *Métis Settlements Act*.

**Potable water** means water that is supplied by a waterworks system and is used for drinking, cooking, dish washing or other domestic purposes requiring water that is suitable for human consumption.

**Wastewater system** means a system for collecting, treating and disposing of wastewater and includes any or all of the following:

- i. sewers and pumping stations that make up a wastewater collection system,
- ii. sewers and pumping stations that transport untreated wastewater from a wastewater collection system to a wastewater treatment plant,
- iii. wastewater treatment plants facilities that provide storage for treated wastewater,
- iv. wastewater sludge treatment and disposal facilities,
- v. sewers that transport treated wastewater from a wastewater treatment plant to the place where it is disposed of,
- vi. treated wastewater outfall facilities, including the outfall structures to a watercourse or any appurtenances for disposal of treated wastewater to land or to wetland

**Water distribution system** means a system of pipes, valves, fittings and appurtenances, including associated pressure reducing stations that is used to convey potable water in a waterworks system to a service connection.

**Water well** means an opening in the ground, whether drilled or altered from its natural state that is used for

- i. The production of groundwater for any purpose,
- ii. Obtaining data on groundwater, or
- iii. Recharging an underground formation from which groundwater can be recovered;

and includes any related equipment, buildings, structures and appurtenances, but does not include a dugout.

**Waterworks system** means any system providing potable water to a city, town, specialized municipality, village, summer village, hamlet, settlement area as defined in the *Métis Settlements Act*, municipal development, industrial development, privately owned development or private utility, and includes any or all of the following components:

- i. Water wells connected to water supply lines, surface water intakes or infiltration galleries that constitute the water supply,
- ii. Water supply lines,
- iii. On-stream and off-stream water storage facilities,
- iv. Water pumphouses,
- v. Water treatment plants
- vi. Potable water transmission mains,
- vii. Potable water storage facilities,
- viii. Potable water pumping facilities,
- ix. Water distribution systems,
- x. Watering points.

#### **s.79 Certificate of Qualification Required**

Requires any person, who is going to commence or continue an activity designated by the Activities Designation Regulation as an activity that requires a certificate of qualification, to operate only if they hold the appropriate certificate of qualification.

#### **s.80 Assurance of Certificate of Qualification**

Defines the designated authority who may issue a certificate of qualification.

## **s.81 Application for Certificate of Qualification**

Defines the process for making application for a certificate of qualification.

## **s.82 Assurance of Certificate of Qualification**

Gives the designated authority the right to issue a certificate of qualification and further states that terms and conditions may be added to the certificate of qualification if deemed appropriate.

## **s.83 Amendment and Cancellation**

Gives the designated authority the right to amend, add or delete, a term or condition of a certificate of qualification, as well as the right to suspend or cancel a certificate of qualification, and to correct any clerical errors in a certificate of qualification. It also provides for a process for the designated authority to do these things.

### **s.83.1 Compliance with Code of Practice**

Requires any person, who is going to commence or continue an activity designated by regulations as an activity that requires a registration and is governed by a code of practice, to operate only if they hold the appropriate registration and abide by the appropriate code of practice.

## **s.84 Security**

Requires that an applicant must, if required by regulation, provide financial or other security and carry insurance in respect of the activity they are conducting to which a required certificate of qualification relates.

## **s.85 Ministerial Regulations**

Defines which regulations the Minister of Environment may amend, including:

- Designating activities that require a certificate of qualification.
- Defining the procedure for the submission of application for certificates of qualification, the form and content of the applications, the conditions required to be met by applicants and the kinds of plans, specifications, etc. that must accompany applications, if any. The administrative and referral procedures by which certificates of qualifications, and amendments to certificates may be dealt with.

## **s.86 Lieutenant Governor in Council Regulations**

Defines which regulations the Lieutenant Governor in Council may amend, including:

- Terms and conditions on which certificates of qualification may be granted
- Prescribing the length of time certificates of qualification may be issued
- Details of security required

## **B. Potable Water Regulation**

### **s.1 Definitions:**

**Certified Operator** means a person who holds a valid certificate of qualification of the appropriate level issued under section 15 of this Regulation.

**Director** means the person designated by Ministerial Order as Director for the purposes of this Regulation.

**Hamlet** means an unincorporated community that has been designated as a hamlet in accordance with the *Municipal Government Act*.

**Industrial development** means any development on the site of a plant referred to in section 2 of

the Schedule of Activities in the *Environmental Protection and Enhancement Act*.

**Municipal development** means a development that consists of two or more lots but does not include a city, town, specialized municipality, village, summer village, settlement as defined in the *Métis Settlements Act*, hamlet, privately owned development or industrial development.

**Owner of a waterworks system** means:

- i. The local authority of a city, town, specialized municipality, village, summer village or settlement as defined in the *Métis Settlements Act* in which the waterworks system is located,
- ii. *For a hamlet*
  - a. A cooperative, as defined in the *Cooperatives Act*, formed by the individual lot owners served by the hamlet's waterworks system, or
  - b. If no cooperative exists, the local authority of the municipal district, improvement district, specialized municipality or special area in which the hamlet's waterworks system is located
- iii. *For a municipal development:*
  - a. The local authority of the municipal district, improvement district, specialized municipality or special area in which the municipal development's waterworks system is located,
  - b. The owner of a private utility, or
  - c. Where neither a) or b) applies, the collection of individual lot owners located in a municipal development that is served by the waterworks system.
- iv. For a privately owned development, the owner of the privately owned development
- v. For a waterworks system owned by a regional services commission, the regional services commission that owns the waterworks system,
- vi. For a waterworks system that is a private utility, the owner of the private utility,
- vii. For an industrial development, the owner of the industrial development in which the waterworks system is located,
- viii. For a waterworks system that is a watering point, the owner of the watering point.

**Person responsible for a waterworks system** means:

- i. The owner of the waterworks system,
- ii. The operator of the waterworks system,
- iii. The local authority that contracts to obtain potable water from the waterworks system,
- iv. The local authority that grants a franchise for the supply of potable water by the waterworks system,
- v. The approval holder or registration holder, as the case may be, for the waterworks system,
- vi. Any successor, assignee, executor or administrator, receiver, receiver-manager or trustee of a person referred to in subclause i), ii), iii), iv) or v) and
- vii. Any person who acts as the principal or agent of a person referred to in subclause i), ii), iii), iv), v) or vi).

**Privately owned development** means a recreational development, school, mobile home park, restaurant, motel, community hall, work camp, holiday trailer park, campsite, picnic site, information

centre or other similar development, including such a development owned or operated by the Government, that is on a parcel of land that is not subdivided, but does not include:

- i. A single family dwelling, or
- ii. A farmstead

**Private utility** means a waterworks system that is owned and operated by a person other than a person referred to in the definition of *owner of a waterworks system* (listed above), but does not include a waterworks system that services only a single family dwelling or a farmstead.

**Water distribution system** means a system of pipes, valves, fittings and appurtenances, including associated pressure reducing stations that is used to convey potable water in a waterworks system to a service connection.

**Water treatment plant** means the physical components of the waterworks system that are used to produce potable water including components associated with the management of any wastes generated during treatment.

**Watering point** means a waterworks system that provides potable water in bulk to the public.

## **s.2 Duty to comply with regulations**

Requires the person responsible for a waterworks system to comply with the regulation.

## **s.14 Certified operator required**

Requires the operation of a water treatment plant and a water distribution system in a waterworks system to be performed by, or under the direction of, a person who holds a valid certificate of qualification, at the applicable level, as set out in an approval or the applicable code of practice.

Defines responsibility of the person responsible for a waterworks system to ensure:

- the appropriate number of certified operators available to perform or direct the operation of the water treatment plant or water distribution system never falls below the applicable number as set out in an approval or code of practice
- the names of the certified operators are reported to the Director, including any changes that may occur over time

## **s.15 Certification of operators**

Provides the Director the ability to issue different types and levels of certificate of qualification for Water Treatment Operator or Water Distribution Operator, as described in the latest edition of the Water and Wastewater Operators Certification Guidelines, published by EPA.

Also outlines the steps an applicant must follow to obtain a certificate of qualification or a renewal of a certificate of qualification.

# **C. Code of Practice for a Waterworks System Consisting Solely of a Water Distribution System**

**4.1.4** At all times, the operation of the waterworks system shall be performed by, or under the direction of, a person who holds a valid certificate of qualification at the applicable level as set out in Table 4-1

**4.1.5.** At all times, the number of certified operators available to perform or direct the operation of the waterworks system shall meet or exceed the applicable number in Table 4-1.



**Table 4-1: Minimum Waterworks System Operator Certificate of Qualification Requirements**

| <b>Population Served by Waterworks System</b> | <b>Minimum Number and Minimum Qualifications of Water Distribution Certified Operator(s)</b>   |
|---|--|
| < 500   | One operator with a Small Water Systems Certificate  |
| 500 - 1500                                    | One operator with a Level I Water Distribution (WD) Certificate  |
| 1,501 – 15, 000                               | One operator with a Level II Water Distribution (WD) Certificate   |
| 15, 001 – 50,000                              | One operator with a Level III Water Distribution (WD) Certificate,<br><b>and</b><br>One operator with a Level II Water Distribution (WD) Certificate   |
| 50,001 and over                               | One operator with a Level IV Water Distribution (WD) Certificate,<br><b>and</b><br>Two operators with a Level III Water Distribution (WD) Certificate,<br><b>and</b><br>One operator with a Level II Water Distribution (WD) Certificate |

## **D. Wastewater and Storm Drainage (Ministerial) Regulation**

### **s.1 Definitions:**

Certified operator means a person who holds a valid certificate of qualification of the appropriate class issued under section 3 of this regulation.

Director means the person designated by Ministerial Order as the Director for the purposes of this Regulation.

### **s.2 Certified operators required**

Requires the operation of a wastewater treatment plant or wastewater collection system in a wastewater system to be, at all times, performed by, or under the direction of, a person who holds a valid certificate at the applicable level, as set out in an approval or applicable code of practice.

Defines responsibility of the person responsible for a wastewater system to ensure:

- the appropriate number of certified operators available to perform or direct the operation of the wastewater plant never falls below the applicable number as set out in an approval or code of practice
- the names of the certified operators are reported to the Director, including any changes that may occur over time

### **s.3 Certification of operators**

Provides the Director the ability to issue different types and levels of certificate of qualification for Wastewater Treatment Operator and Wastewater Collection Operator, as described in the latest edition of the Water and Wastewater Operators Certification Guidelines, published by EPA.

Also outlines the steps an applicant must follow to obtain a certificate of qualification or a renewal of a certificate of qualification.

## E. Wastewater and Storm Drainage Regulation

### s.1 Definitions:

**Director** means the person designated by Ministerial Order as the Director for the purposes of this Regulation.

**Hamlet** means an unincorporated community that has been designated as a hamlet in accordance with the *Municipal Government Act*.

**Industrial development** means any development on the site of a plant.

**Municipal development** means any development that consists of 2 or more lots, but does not include a city, town, specialized municipality, village, summer village, hamlet, settlement area as defined in the *Métis Settlements Act*, privately owned development or industrial development.

**Owner of a wastewater system or storm drainage system** means:

- i. The local authority of a city, town, specialized municipality, village, summer village or settlement area as defined in the *Métis Settlements Act* in which the wastewater system or storm drainage system is located,
- ii. For a hamlet
  - a. A cooperative, as defined in the *Cooperatives Act*, formed by the individual lot owners served by the hamlet's wastewater system or storm drainage system, or
  - b. If no cooperative exists, the local authority of the municipal district, improvement district, specialized municipality or special area in which the hamlet's wastewater system or storm drainage system is located
- iii. For a municipal development
  - a. The local authority of the municipal district, improvement district, specialized municipality or special area in which the municipal development's wastewater system or storm drainage system is located
  - b. The owner of a private utility, or
  - c. Where neither a) nor b) applies, the collection of individual lot owners located in the municipal development that is served by the wastewater system or storm drainage system
- iv. For a privately owned development, the owner of the privately owned development
- v. For a wastewater system or storm drainage system owned by a regional services commission, the regional services commission that owns the wastewater system or storm drainage system
- vi. For a wastewater system or storm drainage system that is a private utility, the owner of the private utility.
- vii. For an industrial development, the owner of the industrial development in which the wastewater system or storm drainage system is located.

**Person responsible for a wastewater system or storm drainage system** means

- i. The owner of the wastewater system or storm drainage system,
- ii. The operator of the wastewater system or storm drainage system,
- iii. The local authority that grants a franchise for the treatment and disposal of wastewater at the wastewater system,
- iv. The approval holder or registration holder, as the case may be, for the wastewater system or storm drainage system,
- v. Any successor, assignee, executor or administrator, receiver, receiver-manager or trustee of a person referred to in sub clause i), ii), iii) or iii.1) and

- vi. Any person who acts as the principal or agent of a person referred to in sub clause i), ii), iii), iii.1) or iv).

**Plant** means all buildings, structures, process equipment, pipelines, vessels, storage and material handling facilities, roadways and other installations, used in and for any activity listed in section 2 of the Schedule of Activities in the Act, including the land, other than undeveloped land, that is used for the purposes of the activity.

**Privately owned development** means a recreational development, school, mobile home park, restaurant, motel, community hall, work camp, holiday trailer park, campsite, picnic site, information centre or other similar development, including such a development owned or operated by the Government, that is on a parcel of land that is not subdivided, but does not include a single family dwelling or a farmstead.

**Private utility** means a wastewater system or storm drainage system owned and operated by a person other than a local authority, municipal development, industrial development or privately owned development, but does not include a system that services only a single family dwelling or a farmstead.

**Wastewater** means domestic wastewater and may include industrial wastewater.

**Wastewater collection system** means a system of sewers, valves, fittings, pumping stations and appurtenances that are used to collect wastewater, up to and including the service connection.

**Wastewater treatment plant** means any structure, thing or process used for physical, chemical, biological or radiological treatment of wastewater, and includes a structure, thing or process used for Wastewater storage, Treated wastewater use and disposal, and Sludge treatment, storage and disposal.

## s.2 Application of regulation

Requires that this regulation apply to a wastewater system or storm drainage system as designated in the Activities Designation Regulation (Schedule 1, Division 2, Part 7 or Schedule 2, Division 2), including replacements, extensions, additions and modifications referred to in the Notes in those provisions.

## F. Activities Designation Regulation

### s.5 Designation of activities

Lists the activities in **Schedule 1** that require an **approval** to operate, and lists the activities in **Schedule 2** that require a **registration** to operate.

**Schedule 1, Division 2: Substance Release, Part 7: Wastewater**

- (g) the construction, operation or reclamation of a wastewater system that uses a wastewater treatment plant other than a wastewater lagoon, and

- i. that

- a. serves a city, town, specialized municipality, village, summer village, hamlet, settlement area as defined in the *Métis Settlements Act*, industrial development, municipal development or privately owned development
- b. is owned by a regional services commission, or
- c. is a private utility, and

- ii. that

- a. discharges wastewater off the site of the development, or
- b. is designed to treat more than 25 cubic metres of wastewater per day.

**NOTE:**

Clause (g) does not apply to:

- i. the extension of the wastewater collection system forming part of a wastewater system,
- ii. replacement of a portion of the wastewater collection system forming part of a wastewater system,
- iii. irrigation using treated wastewater from a wastewater system, or
- iv. application of sludge from a wastewater system to land, where the wastewater system is approved or registered under the Act.

Schedule 1, Division 5: Potable Water

(a) The construction, operation or reclamation of a waterworks system

- i. that
  - a. serves a city, town, specialized municipality, village, summer village, hamlet, settlement area as defined in the *Métis Settlements Act*, industrial development, municipal development or privately owned development,
  - b. is a private utility, or a watering point, or
  - c. is owned by a regional services commission, and
- ii. that uses as the source of its water supply
  - a. surface water, or
  - b. groundwater other than high quality groundwater

**NOTE:**

Clause (a). does not apply to:

- i. the extension of the water distribution system forming part of a waterworks system, or
- ii. replacement of a portion of the water distribution system forming part of a waterworks system, or
- iii. the addition or modification of treated water storage, forming part of a waterworks system, where the waterworks system is approved or registered under the Act.

Schedule 2, Division 2, Substance Release

(d) The construction, operation or reclamation of a wastewater system that uses a wastewater lagoon as the wastewater treatment plant, and

- i. that
  - a. services a city, town, specialized municipality, village, summer village, hamlet, settlement area as defined in the *Métis Settlements Act*, industrial development, municipal development or privately owned development,
  - b. is owned by a regional services commission, or
  - c. is a private utility, and
- ii. that
  - a. discharges wastewater off the site of the development, *or*
  - b. is designed to treat more than 25 cubic metres of wastewater per day

- (e) The construction, operation or reclamation of a wastewater collection system,
  - i. that
    - a. serves a city, town, specialized municipality, village, summer village, hamlet, settlement area as defined in the *Métis Settlements Act*, industrial development, municipal development or privately owned development,
    - b. is owned by a regional services commission, or
    - c. is a private utility, and
  - ii. that discharges into a wastewater system that holds a current approval or registration under the Act.
- (f) the construction, operation or reclamation of a storm drainage system for storm drainage in a city, town, specialized municipality, village, summer village, hamlet, settlement area as defined by the *Métis Settlements Act*, municipal development or privately owned development, but does not include a storm drainage system that collects, stores or disposes of storm drainage solely from agricultural land or land on which farms are located.

**NOTE:**

Clauses (d), (e) and (f) do not apply to:

- i. the extension of a storm drainage collection system forming part of a wastewater system,
- ii. the replacement of a portion of a storm drainage collection system forming part of a wastewater system,
- iii. the extension of a wastewater collection system forming part of a wastewater system,
- iv. the replacement of a portion of a wastewater collection system forming part of a wastewater system,
- v. the addition or modification of a storm drainage treatment facility forming part of a wastewater system,
- vi. irrigation using treated wastewater from a wastewater system, or
- vii. application of sludge from a wastewater system to land, where the wastewater system is approved or registered under the Act.

Schedule 2, Division 5, Potable Water

- (a) the construction, operation or reclamation of a waterworks system
  - i. that
    - a. serves a city, town, specialized municipality, village, summer village or settlement area as defined in the *Métis Settlements Act*,
    - b. is a private utility, or
    - c. is owned by a regional services commission, and
  - ii. that
    - a. that uses high quality groundwater as the source of its water supply
- (b) the construction, operation or reclamation of a waterworks system
  - i. that

- a. serves a city, town, specialized municipality, village, summer village or settlement area as defined in the *Métis Settlements Act*,
  - b. is a private utility, or
  - c.
    - i. is owned by a regional services commission, and
    - ii. that consists solely of a water distribution system that uses as the source of its water supply potable water from a waterworks system that holds a current approval or registration under the Act
- (c) the construction, operation or reclamation of a waterworks system
- i. that serves a hamlet or a municipal development
  - ii. that uses high quality groundwater as the source of its water supply,
  - iii. *and that has*
    - a. 15 or more service connections, or
    - b. 3 or more kilometers of water distribution system
- (d) the construction, operation or reclamation of a waterworks system
- i. that serves a hamlet or a municipal development,
  - ii. that consists solely of a water distribution system that uses as the source of its water supply potable water from a waterworks system that holds a current approval or registration under the Act, and
  - iii. that has a). 15 or more service connections, or b). 3 or more kilometers of water distribution system

**NOTE:**

Clauses (a), (b), (c) and (d) do not apply to:

- i. the extension of the water distribution system forming part of a waterworks system,
- ii. replacement of a portion of the water distribution system forming part of a waterworks system, or
- iii. the addition or modification of treated water storage in a waterworks system, where the waterworks system is approved or registered under the Act.

## APPENDIX VI – Disciplinary Matrix

The purpose of this matrix is to ensure that the disciplinary actions issued under the authority of EPEA and these guidelines are conducted in a fair, transparent and consistent manner while taking into consideration the need for the protection of public health and safety as well as environmental protection.

| Violation   | First Time   | Second Time  |
|---|--|--|
| Charged with an offence under legislation administered by the department in relation to the job duties as a certified operator (Admin Penalty)  | ➤ Immediate suspension of operator's certification until the charges are withdrawn or the matter is resolved in court  | ➤ Immediate suspension of operator's certification until the charges are withdrawn or the matter is resolved in court  |
| Convicted of an offence under legislation administered by the department in relation to the job duties as a certified operator (Admin Penalty)  | <ul style="list-style-type: none"> <li>➤ Up to a 5-year suspension depending on severity of conviction (see below for description of severity)**</li> <li>➤ <i>If an operator wants to re-certify following their suspension, they must follow the re-activation process outlined in the Guidelines</i></li> </ul> | ➤ Full-Revocation (cancellation) of operator certification – no chance of re-activating certification  |
| Providing false or misleading information on certification or reciprocity application form  | ➤ Denial of Application – applicant will have to wait 1 year to re-apply   | ➤ Applicant will have to wait a minimum of 2 years to re-apply   |
| Providing false or misleading information on renewal forms  | ➤ Denial of certification renewal – applicant will have to wait at least 1 year to re-apply  | ➤ Denial of certification renewal – applicant will have to wait at least 5 years to re-apply   |
| Falsifying of a Certificate   | ➤ Up to 5 year suspension  | ➤ Full-Revocation (cancellation) of operator certification – no chance of re-activating certification  |
| Cheating on Exam  | <ul style="list-style-type: none"> <li>➤ Exam will not be scored</li> <li>1. If already certified – immediate 1 year suspension and must wait 2 years to re-apply to write exam</li> <li>2. If first exam – must wait 2 years to re-apply to write</li> </ul>  | <ul style="list-style-type: none"> <li>1. If already certified - suspension of operator's certification and no more chances of writing exams</li> <li>2. If first exam - No more chances of writing exam</li> </ul>                          |
| Certification Section becomes aware that an operator may have breached of the Code of Conduct.<br><br><i>These situations will be immediately reported internally to the Compliance Department for investigation.</i> | <ul style="list-style-type: none"> <li>➤ Freeze certification until the situation has been investigated and resolved.</li> </ul> <p><i>(Freeze means cannot write a higher level of certification or new category of exams or renew)</i></p>   | <ul style="list-style-type: none"> <li>➤ Freeze certification until the situation has been investigated and resolved.</li> </ul> <p><i>(Freeze means cannot write a higher level of certification or new category of exams or renew)</i></p> |

**\*\*Minor** – Convictions that actually or could be reasonably expected to have a minimal adverse impact to human health or the environment (1-3 years).

**\*\*Major** – Convictions that actually or could be reasonably expected to have a substantial adverse impact to human health or the environment (3-5 years).