



Certification Framework 2016

Operators within Drinking Water Treatment Systems

The original work to develop this Framework was undertaken by Government Skills Australia on behalf of the National Water Commission.



Amendments to the original draft Framework document published by Government Skills Australia in 2012 were made in April 2016 by the Queensland Water Directorate (*qldwater*), acting as secretariat for the Water Industry Skills Taskforce (WIST).

The full reference for this version is "*Certification Framework for Operators within Drinking Water Treatment Systems 2016.*"

Foreword

The Water Industry Skills Taskforce (WIST) was established in 2008, following a workshop convened by the Australian Water Association (AWA), the Water Services Association of Australia (WSAA) and the National Water Commission (NWC). The purpose of the workshop was primarily aimed at developing approaches to addressing a growing skills shortage in the Australian water industry.

The WIST drafted new Terms of Reference in March 2015. Taskforce membership has changed over time to address emerging needs, while retaining a focus on WIST's original role - to promote and oversee a nationally-coordinated effort to address the skills shortage in the water sector.

Framework ownership is not the WIST's long-term goal, and WIST itself is not a legal entity. Several attempts have been made to find an appropriate federal government agency to act as owner, without success. WIST members resolved to develop amendments to the Framework in October 2015 in order to address matters always intended to be re-examined once a permanent owner was found, as well as implementation issues discovered through pilot activities in Queensland and New South Wales.

The current training requirements for this Framework will be reviewed in line with any new Water Training Package, as soon as is practicable after its release. V2 incorporates the version of the Water Training Package (now "NWP", replacing "NWP07") endorsed on 7 December 2015. Given that the Framework will continue to be used during a significant transition period, specific references to training units from both NWP and NWP07 have been maintained, for example "GEN001 (NWP279A)." Units from NWP01 (superseded by NWP07) will also be considered as valid for Certification, provided those units map directly to relevant plant processes.

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Introduction

The *Certification Framework for Operators within Drinking Water Treatment Systems* (the Certification Framework) is underpinned by the need to ensure consumers are provided with safe drinking water.

It provides an assurance to regulators, communities and consumers that Operators are competent to manage drinking water quality, as well as being capable of identifying and responding to water quality risks and incidents. The Framework introduces a minimum level of competency for *Certified Operators* across all states and territories by aligning skills, knowledge and competency requirements to national Vocational Education and Training (VET) standards. Further, the Certification Framework ensures there is a requirement for on-going maintenance/development of skills and knowledge.

The actions of *Operators* that treat drinking water have a direct impact on water quality and consequently may impact on the public health risk to communities and consumers.

Extensive research and consultation has informed the development of this Framework including national, international and industry-wide strategies involving workshops in each state and territory. These workshops were attended by public health and water quality regulators, private and public sector water enterprises, peak industry bodies, as well as a range of associated industries. The 2016 revision has been further informed by “pilot” projects in Queensland and New South Wales, as well as the relatively-mature Victorian Certification scheme, which underpinned much of the thinking behind this Framework. A targeted industry and stakeholder consultation process also occurred in early 2016, with some amendments made to the Framework as a result of the feedback received.

Purpose

The Certification Framework provides a set of nationally consistent criteria that defines and recognises the minimum level of competency and capability required of Operators who treat and/or sample drinking water for human consumption to ensure that it is safe.

Scope

The Certification Framework is intended for use by all Australian owners and/or Operators of systems that provide drinking water for human consumption. Variables considered in the Certification Framework design include:

- Industry structures (major urban utilities, corporations, local government authorities, public and private entities, small, regional and remote, wholesale, retail and contractors);
- Employment structures (from full time treatment Operators to part-time/multi-disciplined workers);
- Differing and changing legislative conditions across states and territories; and
- Local risks to drinking water quality (physical, microbial, chemical and radiological).

The Certification Framework applies only to the Operators of treatment processes; or where no treatment process exists, to those that monitor, sample and/or test drinking water in compliance with public health/water quality regulatory requirements. It does not apply to professionals or para-professionals (such as engineers or chemists), non-operational supervisors, administrative workers, managers or senior executives.

It is not intended for use by the bottled water industry or where water of a higher quality is required for applications in medical or industrial industries. Similarly, it is not applicable to private residences where water is sourced and/or treated onsite for domestic consumption.

The competency and capability of Operators is just one component that ultimately ensures that drinking water is safe. Other issues that affect the safety of drinking water include:

- The condition and management of a raw water source
- Investment in infrastructure such as treatment facilities, secondary points of disinfection and the distribution network.
- The actions of other workers in the water sector.

This Framework is not intended to drive investment in infrastructure (e.g. treatment facilities or distribution networks) or the planning and construction of raw water sources, but to recognise the important role that competent and capable Operators play in the provision of safe drinking water.

The Australian Drinking Water Guidelines



The Australian Drinking Water Guidelines (the ADWG) provides an interrelated set of standards to assure safe drinking water through a preventive risk management approach. It is designed as *'a robust system [that] must include mechanisms or fail-safes to accommodate inevitable human errors without allowing major failures to occur'*. Further, the ADWG recognises that safe drinking water will only be assured by managing all risks from 'catchment to tap'. (Australian Government, 2011)

Please refer to the National Health and Medical Research Council (NHMRC) website for the latest version of the Australian Drinking Water Guidelines.

An Operator will perform any or all of the following:

- Control
- Optimise
- Sample
- Monitor
- Report

The Certification Framework does not seek to replicate any component of the ADWG. Instead, it draws key aspects from it to assist *Drinking Water Suppliers* to define the competency and capability requirements of Operators. Figure 1 below provides advice as to the alignment of this Certification Framework and the ADWG.

12 Elements of the Australian Drinking Water Guidelines		
Element	Title	Certification Linkage
1	Commitment to drinking water quality management	Parts 2, 4, 5 & 6
2	Assessment of the drinking water supply system	Part 2
3	Preventive measures for drinking water quality management	Parts 4, 5 & 6
4	Operational procedures and process control	Parts 2 & 4
5	Verification of drinking water quality	Part 4
6	Management of Incidents and emergencies	Part 5
7	Employee awareness and training	Parts 4, 5, 6 & 8
8	Community involvement and awareness	
9	Research and development	Part 6
10	Documentation and reporting	Part 8
11	Evaluation and audit	
12	Review and continual improvement	Part 2

Figure 1- Alignment of the Certification Framework to the ADWG

Regulatory Conditions

Any statement or condition made in this Framework does not over-ride the local regulatory requirements placed upon a *Drinking Water Supplier*.

Applying the Certification Framework

The criteria identified in this Certification Framework are a minimum only. The criteria provides for specific competency and capability requirements that align directly to the tasks performed. *Drinking Water Suppliers* are strongly encouraged to exceed the minimum standards identified in the Certification Framework wherever possible.

Mandatory Application

Jurisdictional regulatory arrangements will require regulated *Drinking Water Suppliers* to participate in this Framework as a component of any obligation to manage risk to public health.

Features of the Framework

Certification is based on the requirement of a drinking water treatment Operator to:

- Achieve the necessary competencies specified in the National Water Training Package (NWP, NWP07, NWP01 and future revised versions) for operating, controlling or optimising water treatment processes and/or monitoring, sampling and reporting water quality;
- Demonstrate capability within the workplace through industry experience; and
- Continue to develop knowledge and skills, as well as maintain currency of industry experience.

The complexity of each *Drinking Water Treatment System* forms the basis for determining the competency and capability required of the *Certified Operator*. The complexity of each Drinking Water Treatment System will be measured through an approved process endorsed by the relevant state and territory regulator. This allows for regulators to use established reporting in alignment with the ADWG risk management guidelines (such as Drinking Water Quality Risk Management Plans) and the flexibility to negotiate with *Drinking Water Suppliers* on a needs basis.

National Competency Standards

By adopting national competency standards under the Vocational Education and Training (VET) Framework the skills and knowledge of a *Certified Operator* will be portable. This also provides rigorous training and assessment through the regulation and auditing of Registered Training Organisations (RTOs).

Qualifications or Statements of Attainment will identify competencies issued through an RTO and are recognised as achievement of competency in the Certification Framework. *Drinking Water Suppliers* will notice that competency standards change over time. Where there are any concerns about the currency of a *Certified Operator's* competency, the *Drinking Water Supplier* is advised to liaise directly with the *Certifying Body* or their preferred RTO.

Management and Maintenance of the Framework

The Framework is designed to be managed and maintained by an independent third party entity (the *Framework Owner*) in accordance with the direction set from consultation with industry stakeholders, including regulators. The *Certifying Body* will be responsible for the development of software and supporting systems to record and report details as listed in Part Nine - Management of the Framework.

Note: Due to the potential conflict of interest that may arise, RTOs or affiliates*, *Drinking Water Suppliers* and state/territory regulators are precluded from taking on the role as a certifying body.

*An RTO affiliate is an organisation that has entered into a partnership arrangement to delivery nationally recognised training or is a member of an RTO Board of Governance.

The 2015 review of this document has identified an additional role from those originally foreseen. The *Framework Coordinator* is formally recognised as part of this Framework, although the roles and responsibilities of a *Framework Coordinator* may differ, depending

on the jurisdiction. In essence, the role recognises the need for a body, or bodies, to liaise with *Water Suppliers*, state/territory regulators and RTOs to ensure cost-effective investment in gap training, which maximises the benefits of collaboration across the jurisdiction's water industry. Recognition of this role allows *Framework Coordinators*, once recognised by the *Framework Owner*, to access the information and data necessary to support this role.

Review and Continuous Improvement

The water industry is being subjected to increasing levels of change as a result of:

- Changing local legislative requirements,
- Reform in the sector nationally and at local levels; and
- Increasing development and adoption of new technologies.
- Changing workforce demographics, creating the need to manage attraction, retention and knowledge management issues.

The *Framework Owner* will initiate and facilitate periodic review of the Framework to ensure competency, capability and development standards defined in this document remain valid and appropriate to the industry and align to the elements of the ADWG. As a minimum, the Framework will be reviewed every 5 years; however, legislative changes, new water treatment technologies, significant revisions of the ADWG or National Water Training Package could provide triggers for an earlier review, in order to ensure that the Framework remains current and reflects industry good practice.

Structure

The Certification Framework fits into the highly complex, multi-faceted water industry. In isolation, it provides minimum standards that *Certified Operators* will need to attain to ensure they can competently carry out drinking water treatment tasks.

In a larger context, the Framework forms just one driver in an industry underpinned by a commitment to training, research, innovation and regulation. Table 1 below depicts the complex layers of state/territory and commonwealth water quality management:

Commonwealth	State/Territory	Local	Industry
Policy <ul style="list-style-type: none"> National Health and Medical Research Council Guidelines/Standards <ul style="list-style-type: none"> Australian Drinking Water Guidelines (ADWG) National Water Training Package NWP 	Regulatory <ul style="list-style-type: none"> Water Licensing (extraction) Approvals Public Health Drinking Water Quality Management Best Practice Guidelines Fluoridation OH&S Environmental Reporting Department of Primary Industries Water (or equivalent) Economic Regulator 	Regulatory <ul style="list-style-type: none"> Local approvals Inspections Guidelines/Standards <ul style="list-style-type: none"> Customer contracts Defined levels of service Local Standards 	Guidelines/Standards <ul style="list-style-type: none"> Best Practice Guidelines AS/NZS quality standards Peak Bodies/Associations <ul style="list-style-type: none"> Water Services Association of Australia (WSAA) Australian Water Association (AWA) Government Skills Australia (GSA) Industry Training Advisory Bodies (ITABs) NSW Water Directorate Queensland Water Directorate (<i>qldwater</i>) VicWater Water Industry Operators Association of Australia (WIOA) National Centre of Excellence in Desalination Employee Associations <ul style="list-style-type: none"> Australian Services Union (ASU)

Table 1 - Drivers and Guidance for Water Quality Management in Australia

Functionally, this Framework applies to one component of the total water sector, as represented in Figure 1 below:

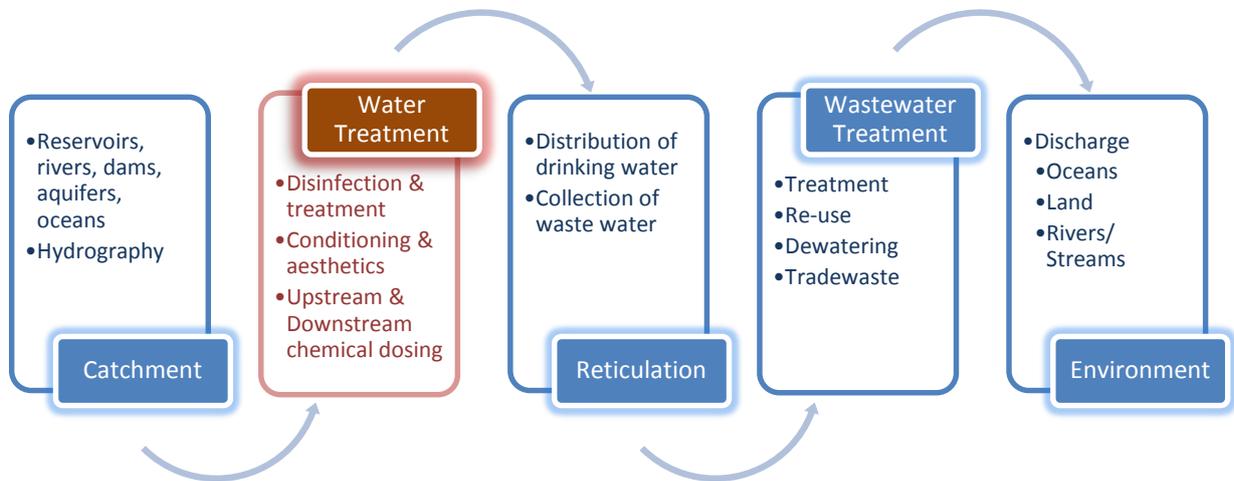


Figure 2 - Components of the Water Sector

The Certification Framework may be expanded to other sectors within the Water Industry upon successful implementation of this Framework within the drinking water treatment sector. A Wastewater Treatment Plant Operator Certification Framework, based on this approach, was established in Queensland in 2015.

Certification Process

Figure 3 following provides an overview of the processes that underpins this Framework:

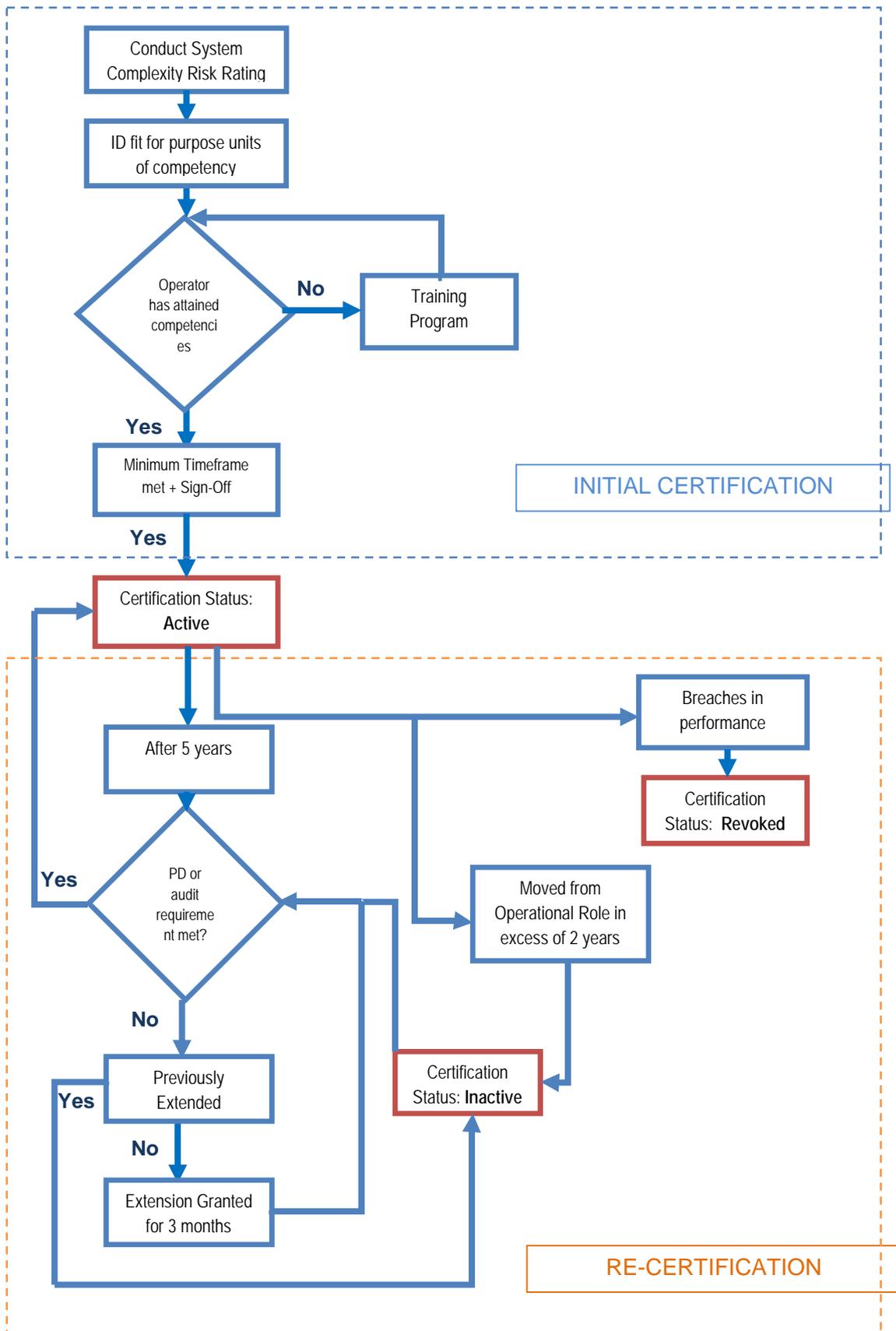


Figure 3 - Process for Certification and Re-Certification

Part One –Scope of Certification

Part One identifies the physical system components and stakeholders that are the focus of this Framework. It identifies the organisations that will likely employ water treatment Operators to perform tasks associated with creating and maintaining safe drinking water.

Rationale

The Certification Framework provides one preventive measure as described in the ADWG that, when integrated with sound management of the entire system, will provide for safe drinking water.

Definitions

Drinking Water Treatment System -



Is, for the purposes of this Framework, a subset of a *Drinking Water Supply System*, as defined under Section 3.2 of the ADWG. *Drinking Water Treatment Systems* are that part of the supply system that produce water intended for human consumption, where the water either;

- Does not pass through any treatment barriers;
- or
- Is treated by a single treatment barrier, or multiple treatment barriers, at a *Drinking Water Treatment Facility* (a facility consisting of one or more treatment barriers that are used to produce water that is suitable for human consumption).

Where a water treatment facility exists, the *Drinking Water Treatment System* is inclusive of downstream chemical dosing and disinfection.

It does not include direct or indirect drinking water recycling/re-use schemes.

Drinking Water Supplier

An organisation/enterprise (public or private) or, individual that provides drinking water for human consumption. The *Drinking Water Supplier* includes, but is not limited to:

- major urban utility,
- corporation
- local government authority,
- public or private entity,
- small, regional or remote,
- wholesaler, retailer or contractor

Any organisation contracted to manage a *Drinking Water Treatment System* (or part thereof) is considered to be a *Drinking Water Supplier*.

Note that 'Independent Contractors' (individuals) are defined in Part Three - Operators in Scope

Treatment Process

Any process within a *Drinking Water Treatment System* that changes the physical, chemical or biological properties of water derived from any source in order to make it safe for human consumption or to make it comply with a regulatory order relating to human consumption. Treatment processes include, but are not limited to:

- Primary and Secondary Disinfection
- Coagulation and Flocculation
- Sedimentation and Clarification
- Dissolved Air Flotation
- Granular Filtration
- Membrane Filtration
- Reverse Osmosis
- Adsorption
- Ion Exchange
- Fluoridation
- Softening/Hardening
- Chemical Dosing

Part Two -System Complexity Rating

Part Two outlines the requirement for the *Drinking Water Supplier* to rate every *Drinking Water Treatment System* in relation to its complexity.

Rationale

The competencies and capabilities required of Operators will be defined at different levels dependent upon the complexity of the system.

The System Complexity Rating supports the Certification Framework by categorising systems into the following:

- **Low Complexity:** Will include drinking water systems where no treatment barriers are in place or where disinfection is the only treatment barrier. Fluoridation of water may occur at this level.

Skills required by *Certified Operators* will typically involve chemical dosing, sampling and/or reporting

- **High Complexity:** Will include drinking water systems that have two or more treatment barriers in place. Fluoridation may also occur.

Skills required by *Certified Operators* will typically involve monitoring, sampling, reporting, chemical dosing and control/optimisation of multiple conventional and/or advanced treatment processes.

Factors that will impact upon the competency and capability requirement of the *Certified Operator* include, but are not limited to:

- | | |
|--|---------------------------------------|
| • Automation and level of intervention | • Timeliness of response requirements |
| • Technology | • Raw source water management |
| • Complexity of individual processes | • Raw water quality and variability |
| • Interrelatedness of processes | • Microbial Risks |
| • Size of the facility | • Chemical Risks |
| • Number of connections | • Physical Risks |
| • Volume of Flow | • Radiological Risks |

Table 2 - Factors that may be considered during a risk assessment

The *Certifying Body* shall maintain records of the System Complexity Rating and resultant category (Low/High).

Part Three - Operators in Scope

Part Three identifies the categories of Certification that are the subject of this Framework.

Rationale

Communities, employers and regulators must be assured that all Operators who work within drinking water systems are identified within the Certification Framework.

The Certification Framework does not seek to influence the levels of responsibility and accountability inherent in an organisational structure. *Drinking Water Suppliers* must ensure that *Certified Operators* are sufficiently supported and that expectations of performance are realistic (i.e. aligned to the level of competency achieved).

Definitions

Operator in Training

An Operator who is gaining experience under the guidance of a *Certified Operator* performing routine tasks and undertaking relevant competency development which culminates in attainment of relevant competencies (from NWP), as required by this Certification Framework.

The Operator in Training is not Certified under this Framework, but the *Drinking Water Supplier* is to ensure that opportunities are afforded to the person to develop all necessary competencies to achieve Certified status.

Certified Operator

A *Certified Operator* has operational responsibility for water treatment processes or facilities. Duties performed will range from basic monitoring, sampling, testing and reporting, through to chemical dosing, control and optimisation of *Treatment Processes*.

The *Certified Operator* may have responsibility for more than one *Drinking Water Treatment System* at any one time, so long as it is reasonable to expect that drinking water quality and safety will be assured across all systems and the *Certified Operator's* current competencies cover all treatment processes for which they are responsible.

Independent Contractors

For the purposes of this Framework, an independent contractor may provide expertise and services to other *Drinking Water Suppliers*;

Independent Contractors are not considered to be *Drinking Water Suppliers*. They are individuals (*Certified Operators*) who work within a *Drinking Water System* and must meet the minimum conditions stated in this Certification Framework.

A *Certifying Body* and *Framework Owner* should develop a process to authorise Employers to complete Employer Sign-off (as detailed in Part 5) for Independent Contractors engaged by that Employer. Such a process will include testimonials from previous employers, or other suitable evidence, as agreed by the *Certifying Body* and *Framework Owner*.

Exclusions

Where workers who would not normally perform treatment tasks are called upon to assist in an unusual and unforeseen circumstance, the worker is not required to be Certified under this Framework but would be expected to have access to advice and guidance from a *Certified Operator*.

It is expected that the *Drinking Water Supplier* will be able to respond to emergencies, call-outs and unforeseen events and manage any immediate risk to drinking water safety.

Part Four - Competency Requirement

Part Four of this Framework details the requirement for *Certified Operators* to undertake competency assessment.

Rationale

The actions of Operators that treat drinking water have a direct impact on water quality and consequently may impact on the public health risk to communities.

Competency is attained through the completion of *fit for purpose* units of competency contained within the National Water Training Package (currently NWP, however appropriate units of competency from the NWP01 or NWP07 versions of the training package will also be considered valid for the purposes of this Framework). *Fit for purpose* units of competency are those that align with the treatment processes and/or associated monitoring, sampling and recording tasks. Part Two of this Framework provides the basis for alignment of competency standards.

Although this Framework specifies the minimum competency requirement, *Drinking Water Suppliers* are strongly encouraged to support Operators to achieve a formal qualification under the National Water Training Package. The full qualification includes core units that also cover environmental and occupational health and safety issues which are relevant to water treatment but are not mandatory under this Framework. There are many benefits to organisations to have staff undertake these core units.

Additionally, due to the complexity of many modern *Drinking Water Treatment Systems* it is likely that the additional training required to achieve a qualification will be minimal. There are a wide range of relevant units which help develop a competent Operator. A decision to offer full qualifications may be influenced by:

- The level of investment in training by the employer;
- The availability of public funding for qualifications or part thereof; and
- The level of prior knowledge and skills of the worker.

Full details of qualifications are contained within the National Water Training Package.

Access and Opportunity to undertake Competency Development

Identification of an *Operator in Training* by the *Drinking Water Supplier* enables new entrants to the industry to work within a *Drinking Water Treatment System* whilst obtaining the relevant competencies necessary for Certification. The guidance provided in this part also applies to existing workers who may need up-skilling through the attainment of formal units of competency.

Drinking Water Suppliers are to provide adequate opportunities to allow new workers or existing workers who require up-skilling to develop their competencies and provide evidence for assessment in order to achieve the competencies required for Certification.

The following timeframes outline the **maximum period** an Operator should take to complete all competency requirements, noting the need to balance training and workload:

System Complexity Rating	Timeframe for Training
Low	12 months
High	36 months

Table 3 - Maximum timeframes to achieve required competencies

Note: The *Drinking Water Supplier* should keep accurate records of *Operators in Training* to ensure that all Operators are provided with adequate opportunity to develop the competencies and capabilities within the required timeframe.

Fit for Purpose Units of Competency

Fit for purpose mean that units align with the treatment processes and testing/monitoring processes specific to the *Drinking Water Treatment System* that have a water quality outcome.

Units of competency from the current National Water Training Package (NWP) applicable to a *Drinking Water Treatment System* are provided at Appendix B.

Table 4 following identifies:

- Expected outcomes for Operators within *Drinking Water Treatment Systems* that align to the System Complexity Rating.
- Mandatory units aligned to the System Complexity Rating.

Please note that the competencies stipulated are correct at time of printing. Please check for the most current version by referring to www.training.gov.au, or your preferred training provider.

Complexity Rating	Fit For Purpose competency requirements	Mandatory Units
Low Complexity	<p>Fit for purpose units from the NWP.</p> <p>Units selected may or may not result in a qualification at Certificate level II.</p>	<ul style="list-style-type: none"> • NWPGEN001 Apply the risk management principles of the water industry standards, guidelines and legislation (formerly NWP279A), or other course approved by the <i>Framework Owner</i> and <i>Certifying Body</i>. • NWPGEN007 Sample and test drinking water (formerly NWP218B)
High Complexity	<p>Fit for purpose units from the NWP.</p> <p>Disinfection units may also be required.</p> <p>Units selected will likely result in the award of a qualification at either Certificate level III or IV.</p>	<ul style="list-style-type: none"> • NWPGEN001 Apply the risk management principles of the water industry standards, guidelines and legislation (formerly NWP279A), or other course approved by the <i>Framework Owner</i> and <i>Certifying Body</i>. • NWPGEN007 Sample and test drinking water (formerly NWP210B and NWP218B) • NWPGEN009 Perform laboratory testing (formerly NWP364B)

Table 4 - Competency requirements for Certified Operators

Notes:

- The minimum requirements stated in this part of the Framework do not exclude an Operator from undertaking units of competency or attaining a qualification that spans other water disciplines (e.g. wastewater, distribution, etc.). Please refer to packaging rules in NWP.
- Operators are not required to attain a stated Mandatory Unit where an equivalent higher level unit of competency has already been achieved. A higher level of competency can be sourced from within the National Water Training Package, or other training packages, as deemed suitable by the *Certifying Body*.
- Completion of the unit NWPGEN009 does not provide an exemption from completing unit NWPGEN007, because the competency requirements are not the same.

Criteria

1. *Drinking Water Suppliers* shall provide training and/or assessment opportunities to complete the requirements of Part Four of this Framework in accordance with Table 3.
2. Operators shall complete all units of competency that are:
 - 'Fit for purpose'; and
 - Mandatory in accordance with Table 4.
3. Where a necessary treatment process is identified which is not suitably represented by a unit of competency in the current National Water Training Package:
 - Details of that process must be reported to the *Certifying Body* by the *Drinking Water Supplier* as part of the Employer Sign-off process (see Part 5);
 - The *Certifying Body* will report details to the *Framework Owner* for consideration in order to continuously improve the National Water Training Package;
 - The *Drinking Water Supplier* must negotiate with the *Certifying Body* to determine appropriate in-house or other training to ensure competency in operating the process can be verified for the purposes of Certification.

Part Five - Attaining Certification

Part Five details the capability requirement for entry into the Certification Framework.

Rationale

Skills and knowledge (i.e. competency) will be developed further through on the job experience and peer group engagement that is only achieved by working within a Drinking Water Treatment System.

By attaining Certification, the Operator will have been required to meet the competency requirements as outlined in Part Four of this Framework. However, Certification aims to provide additional assurance to consumers, regulators and employers that the Operator is able to perform under changing and sometimes challenging conditions.

In other words this part of the Framework extends 'demonstrated competency' to include an indication of the capability of an Operator to reliably perform under conditions that are difficult, challenging or non-routine. 'Capability' should be addressed as part of the Employer Sign-Off.

Required Timeframes

The additional capability is attained through direct exposure to workplace conditions and by application of relevant skills and knowledge to the satisfaction of the *Drinking Water Supplier*. It can only be attained through participating in the operational setting unique to the *Drinking Water Treatment System* for a period not recommended to be less than:

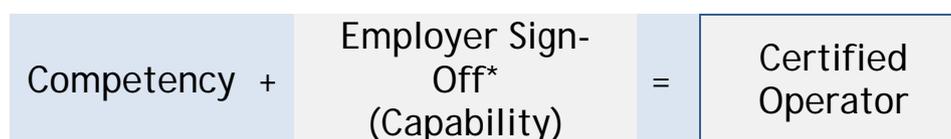
System Complexity Rating	Timeframe for Experience
Low	6 months inclusive of training
High	24 months inclusive of training

Table 5 - Minimum period for experience in a Drinking Water System

Where competencies are achieved in a lesser period, the recommended minimum period for experience still applies.

Awarding Certification

Certification shall be awarded on completion of all requirements detailed in Parts Four and Five of this Framework and is represented below:



* Employer Sign-off must be undertaken by a suitably qualified person. It is for the *Drinking Water Supplier's* Chief Executive to determine an appropriate delegate, however as a guide it should be the most senior technical officer within the organisation with responsibility for drinking water treatment.

Period of Certification

Certification is valid for a five (5) year period.

Credential

Certification shall result in the credential being issued that specifies:

- Name of the *Certified Operator*
- Current date of issue and expiry
- *Treatment Processes* for which the person is Certified
- Status (i.e. Active/Inactive)

Criteria

The Operator shall:

- Be currently employed in an operational role.
- Have undertaken the minimum period for experience within a drinking water system as defined in Table 5.

The *Drinking Water Supplier* or *Independent Contractor*:

- Shall make an application to the *Certifying Body* supporting the suitability of experience of the Operator to be Certified. Table 5 shall be a guide as to an appropriate timeframe. The application will be made using the approved process supplied by the *Certifying Body*.

The *Certifying Body* shall:

- Upon assessment, and after ensuring that the minimum competency requirements have been met, issue a credential to the *Certified Operator* and a copy to the *Drinking Water Supplier*.

Part Six - Maintaining Certification

Part Six outlines the two pathways available to re-certify under this Framework.

Rationale

Certified Operators must attain and maintain competencies to ensure their skills remain relevant and keep pace with changes to treatment processes, technology and consumer/regulatory expectations.

Maintenance of Certification is achieved by ensuring that the competencies and capabilities identified during initial Certification remain current. This is achieved through on-going engagement within the water industry, participation in refresher and professional development activities and by responding to changes in conditions, responsibilities, technology or treatment processes.

Importantly, this Framework recognises that each workplace is unique and will influence the method by which *Drinking Water Suppliers* will use the Framework to ensure the competence of *Certified Operators* is maintained. These factors include the size of the workforce, the nature of the work being performed by the Certified person, the geographic location and access to technology.

Relevancy of Competencies to the Drinking Water System

Certification recognises Operators for their ability to perform drinking water treatment tasks related to specific processes only. In other words, it does not certify Operators to work at a specific facility.

If a *Certified Operator* moves to another *Drinking Water System* or if an upgrade of a system occurs, the alignment of competencies held by the *Certified Operator* will need to be checked against the new *Treatment Processes*. Where a gap is identified, the *Certified Operator* retains their Certified status, however the gap will be required to be addressed and records of Certification will be amended to identify new *Treatment Processes*.

Pathways for Re-Certification

Pathway #1 - Participation in the Professional Development Program

Pathway 1 provides the opportunity for *Certified Operators* to re-certify by participation in professional development activities. Professional development does not just include training programs or conferences. Please refer to Appendix A for the list of approved professional development activities. A Certifying Body may apply to the Framework Owner to have professional development activities added to the Appendix, and the Framework Owner will ensure a current list is maintained and made available.

Records of professional development undertaken shall be maintained by the *Drinking Water Supplier* or *Independent Contractor* and shall be provided to the *Certifying Body* to support an application for continued Certification. The points required for each period of Certification are specified in Table 6.

Pathway #2 - Audit / Demonstration of current competence

The Drinking Water Supplier or the *Certified Operator* may elect to undertake a Certification Audit within three (3) months of the expiry of their Certification.

The Certification Audit shall be performed by an operationally competent person, who is independent and approved or nominated by the *Certifying Body* using an appropriate audit methodology/tool.

The Certification Audit will provide evidence that the competence of the *Certified Operator* is current and relevant to the tasks performed at a particular treatment facility.

Criteria

- Regardless of the pathway chosen, *Certified Operators* must:
 - Be currently undertaking treatment tasks aligned to their Certification status in an operational role.
Note: Where a *Certified Operator* is participating in an activity for professional development at the time of Re-Certification, the *Certifying Body* will consider the Operator to be in their substantive position.
 - Meet the requirements of either Pathway 1 or 2 as follows:
 - Pathway #1: Attain the minimum number of points aligned to the System Complexity Rating as detailed in Table 6 below.
 - Pathway #2: Demonstrate current competency through successfully undertaking a Certification Audit of operational and developmental activities using the process administered by the *Certifying Body*.
- Ensure that the competencies held (as required in Part Four) remain directly relevant to the water treatment processes that are used within the system.

Extensions to Certification

Falling Short of Required Points in Pathway #1

- Where a *Certified Operator* has elected Pathway #1 but falls short of the required points during the period of Certification:
 - A three (3) month extension will be provided to achieve the remaining required points; or
 - The *Drinking Water Supplier* may elect to meet the requirements of Pathway #2 within three (3) months of the expiry of Certification.

Unsuccessfully completing the Audit in Pathway #2

- Where the audit is unable to confirm the competence of the *Certified Operator*:
 - A three (3) month extension will be provided.
 - The *Drinking Water Supplier* shall plan and assist the Certified person to address any shortfall or gap identified during the audit. Actions and outcomes shall be reported to the *Certifying Body*.

Continued shortfall after an extension

- Where the three month extension expires, the *Certifying Body* shall receive advice on a case-by-case basis. The Certification status of a *Certified Operator* may be amended to 'Inactive' unless there are reasonable circumstances to extend the Certification period further. Please refer to Part Seven for details of Active and Inactive Certification.

System Upgrades/Moving to a new water treatment system

- The *Certifying Body* shall keep a record of the gap and all correspondence; however the status of the *Certified Operator* shall remain unchanged.
- The *Certifying Body* shall monitor the progress of a *Certified Operator* to up-skill. Where the *Certified Operator* has not up-skilled within a reasonable period of time, the *Certifying Body* shall review the status of Certification on a case-by-case basis.

Summary of Competency, Capability and PD Requirements

Complexity Rating	Operator in Training Competency Requirement	Certified Operator		
		Initial Certification		Re-Certification Pathway #1 Required Points
		Competency Requirement	Capability Requirement	
LOW	Undertaking a training program aligned to fit-for-purpose units of competency	Units completed within 12 months	6 months experience plus employer application.	5
HIGH		Units completed within 36 months	24 months experience plus employer application.	15

Table 6 - Summary of Competency, Capability and PD requirements

Part Seven - Certification Status

Part Seven of the Framework allows for those that have let their status lapse or become inactive for a variety of reasons to re-apply for Certification through a fair and simple process.

Rationale

Certified Operators experience periods of inactivity during their career which must not be discouraged or result in disadvantage through this Framework.

The *Certifying Body* will assign a status to each *Certified Operator* to identify Operators who are active or inactive. An Operator may become inactive for a variety of reasons that are valid and reasonable. Examples include extended leave (such as parental leave), career progression and career breaks. Where a *Certified Operator* is identified as inactive, *Drinking Water Suppliers* should not make judgements about employment opportunities based only on the status of Certification.

Active Certification

This category of Certification shall be used to identify *Certified Operators* who currently meet all requirements as stated in this Framework.

Inactive Certification

- The *Certifying Body* may revise the status to 'Inactive' where the *Certified Operator*:
 - Is absent from an operational role for a period in excess of twenty four (24) months; or
 - Has been unable to meet the criteria as described in Pathway #1 or #2 as detailed in Part Five within a three (3) month extension period.
- Notification will be provided to the *Drinking Water Supplier* and *Certified Operator* where the *Certified* status changes.

Revoked Status

- The *Drinking Water Supplier* must inform the *Certifying Body* where employment of a *Certified Operator* has been terminated for a serious breach. The *Certifying Body* will examine the specific circumstances and may amend the Certification status to 'Revoked' as a result of the notification.

Please note that Part 8 requires the *Certifying Body* to allow for a formal appeals process.

Criteria for Re-entry

- *Certified Operators* who currently meet all requirements as stated in this Framework shall be identified as Active by the *Certifying Body*.
- An 'Inactive' Operator may be returned to 'Active' status by the *Certifying Body* within a period of two (2) years of being deemed 'Inactive' without following the process detailed below, provided that the *Certifying Body* is satisfied that the Operator otherwise continues to meet the requirements for Certification.
 - Where an 'Inactive' Operator otherwise seeks to return to 'Active' status, the *Drinking Water Supplier* shall:
 - Cause an audit of current competency to occur as outlined in Pathway #2 of Part Six.
 - Upon successfully completing the audit or addressing any gaps identified, shall apply to the *Certifying Body* to have the status of the *Certified Operator* revised to 'Active'. Evidence of the audit and any gap training shall accompany the application.

Part Eight - Certification Management

Rationale

The administration functions performed by the Certifying Body must be performed in a manner that ensures the integrity of this Framework and provides national portability for Certified Operators.

Selection of Certifying Body

The *Framework Owner* will appoint a *Certifying Body*, or bodies, based on criteria it establishes and manages. The criteria for initial selection will include:

- Establishment of a Quality Assurance System
- Industry expertise
- Viable business model
- Capacity for data management
- Documented future direction for their Certification activities
- Capacity to service the industry nationally

The appointment of a *Certifying Body* will be for a minimum period of 5 years, under terms which require annual progress reporting to the *Framework Owner*. The *Framework Owner* may at any time appoint an independent reviewer to review the performance of the current *Certifying Body*, or the Framework itself. The appointment of the current *Certifying Body* may be extended by the *Framework Owner* beyond the minimum 5 years based on satisfactory performance. At all times the appointment arrangements should seek to promote certainty and continuity with respect to the Certification process.

Administration

The *Certifying Body* shall ensure that sufficient resources are allocated to effectively manage, administer and participate in the review of the Certification Framework.

Governance activities and administrative processes shall be documented through formal policies.

The *Certifying Body* shall ensure that it has national coverage and maintain independence from:

- A Registered Training Organisation (RTO) or affiliate*
- A *Drinking Water Supplier*
- A state or territory regulator

* An RTO affiliate is an organisation that has entered into a partnership arrangement to delivery nationally recognised training or is a member of an RTO Board of Governance.

Records Management

Type of Record

- To ensure that the Certification Framework remains an effective strategy to meet its stated objective, a database shall be maintained by the *Certifying Body* and shall include the following details:

ORGANISATIONAL INFORMATION

- The details of the *Drinking Water Treatment System* including:
 - Name of the *Drinking Water Supplier*;
 - Name of an *Independent Contractor's Business* where relevant;
 - Location and business name (where relevant) of each *Drinking Water Treatment System*;
 - The treatment processes present within each *Drinking Water Treatment System*; and
 - The System Complexity Rating for each *Drinking Water Treatment System*.

PERSONNEL INFORMATION

- Details of each *Certified Operator* including:
 - Name;
 - Business Address/Contact details;
 - Certification Number;
 - Date of Initial Certification;
 - Entry and Expiry date for current Certification.
 - Employer Details;
 - Status - Active / Inactive / Revoked;
 - List of treatment processes for which the *Certified Operator* is currently competent; and
 - List of units of competency achieved including the issuing RTO(s)

Note: The *Drinking Water Supplier* must advise the *Certifying Body* of any changes that impact upon Certification as described in Part Six.

Currency of Records

- The *Drinking Water Supplier* must advise the certifying body of any change to the *Certified Operator's* records in relation to any change to treatment processes including any change in the complexity rating of the system.

Access to personal records

Certified Operators, the *Drinking Water Supplier* and the regulatory body responsible for public health in the relevant state or territory can apply to the *Certifying Body* to access the relevant personal records for the purpose of validating current competency.

Framework Coordinators can apply to the *Certifying Body* to access data as agreed by the *Framework Owner*.

- Documented authority from the *Certified Operator* will be received prior to the release of any information to any other third party.
- Where information is released to any party, a full record of the information that was supplied shall be maintained by the nominate *Certifying Body*.
- Relevant state and territory privacy and confidentiality statutory requirements will apply to all applications.

Records Retention

- The *Certifying Body* shall maintain records for all persons with an Active, Inactive or Revoked Certification status.
- Records shall be disposed of in accordance with the Records Retention Policy of the *Certifying Body*. The policy shall require that details of Certification shall be retained for 30 years. This does not include retention of any supporting materials.
- In the event that the *Certifying Body* discontinues business, all records shall be safeguarded and provided to the relevant authority as directed.

Appeals

- Where a *Drinking Water Supplier* or *Certified Operator* is dissatisfied with a judgement or process used by the *Certifying Body* an appeal may be lodged in accordance with the Appeals Policy.

The policy shall ensure that the appeals process is confidential, equitable and transparent. The policy shall ensure that no stakeholder is vilified, victimised or subject to discrimination.

Appendix A - Approved Professional Development

Activity	Details	Points
Attend a training session approved or conducted by a state/territory regulator or mandated as refresher training	Examples include the NSW Office of Water Update Seminar and the Victorian Dept of Health Water Industry Issues course.	3 points
Complete additional units of competency applicable to drinking water treatment at AQF level 2	Units from a training package other than NWP must relate specifically to drinking water treatment.	3 points for each unit
Complete additional units of competency applicable to potable water treatment at AQF level 3	Units from a training package other than NWP must relate specifically to drinking water treatment.	4 points for each unit
Complete additional units of competency applicable to potable water treatment at AQF level 4	Units from a training package other than NWP must relate specifically to drinking water treatment.	5 points for each unit
Complete additional non-accredited relevant, process based, refresher training.	The training course will be relevant to drinking water treatment systems. The course must include some form of assessment.	4 points
Attend a peak water industry annual conference	Peak industry associations include: <ul style="list-style-type: none"> • Australian Water Association • Water Industry Operators Association • Water Services Association of Australia 	1 point per day attended
Attend a water industry conference, trade show, field day, specialty event or meeting with published agenda	These events are typically facilitated by professional associations, education or training providers (e.g. universities or RTOs), manufacturers or distributors.	1 point per day attended to a maximum of 3 points
Attend a specialist seminar or workshop relevant to drinking water treatment	Examples include: <ul style="list-style-type: none"> • CRC Road shows and workshops • IWES short courses • Water Treatment Alliance Filter Optimisation workshop • WIOA workshops 	2 points per day attended
Attend an in-house training course specific to drinking water treatment	The course must be a formal training program with documented learning outcomes.	1 point per day attended to a maximum of 3 points
Mentoring of a junior staff member	Mentoring must be through a formal arrangement with scheduled meetings/activities over an extended period of time.	4 points
Present a technical paper at a water industry conference or seminar	A 20 minute presentation is the minimum standard as an indicator of the level of research/technical expertise.	5 points
Write and submit a poster presentation at an event		2 points

Write, submit and present a poster presentation at a drinking water industry event		3 points
Submit an article that is published in a water industry or relevant technical journal	Examples include: <ul style="list-style-type: none"> • AWA Water Magazine • WIOA WaterWorks Magazine • Any other industry recognised journal 	5 points
Complete a significant workplace project	Examples include: <ul style="list-style-type: none"> • Analysis of performance membranes in an RO plant • Research and recommend process for eradication of mosquitoes in a WWTP • Investigation and implementation of plant process improvements 	Points to be allocated on a case by case basis. A maximum of 10 points will apply.
Participate in a rotation program or perform higher duties for professional development	The program must be formalised with stated objectives/outcomes	2 points
Provide public presentation in relation to the drinking water treatment system	Examples include the provision of a tour to an external industry, community or school group	2
Subscribe to an industry periodical	Operators should demonstrate that their knowledge of drinking water system issues is current.	1
Recognition of achievement through an industry development award or prize	Examples include: <ul style="list-style-type: none"> • Churchill Fellowships • IWA (Vic) Award • WIOA Kwatye prize 	10 points

Appendix B - Water Treatment Units of Competency

NWP Unit Code	NWP Unit Descriptor	NWP07 Code*
<i>MANDATORY (DEPENDENT ON COMPLEXITY)</i>		
NWPGEN001	Apply the risk management principles of the water industry standards, guidelines and legislation	NWP279A
NWPGEN007	Sample and test drinking water	NWP201B/ NWP218B
NWPGEN009	Perform laboratory testing	NWP364B
<i>PROCESS UNITS</i>		
NWPTRT011	Assess and improve chemical dosing process	NWP409A
NWPTRT012	Operate and control fluoride addition process	NWP276A
NWPTRT013	Operate and control liquefied chlorine gas disinfection	NWP277A
NWPTRT014	Operate and control iron and manganese removal processes	N.A.
NWPTRT015	Operate and control coagulation and flocculation processes	NWP347B
NWPTRT031	Operate and control sedimentation and clarification processes	NWP348B
NWPTRT032	Assess and improve sedimentation processes	NWP408A
NWPTRT033*	Operate and control DAF processes	NWP352B/ NWP407A
NWPTRT034*	Operate and control activated carbon processes	NWP367A
NWPTRT035	Operate and control ion exchange and softening processes	NWP356B
NWPTRT041	Operate and control granular media filters	NWP354B
NWPTRT042	Assess and improve granular media filters	NWP406A
NWPTRT043	Operate and control membrane filters	NWP355B
NWPTRT044*	Operate and control desalination processes	NWP357B
NWPTRT045	Assess and improve desalination processes	N.A.
NWPTRT052	Operate and control hypochlorite disinfection processes	NWP268A
NWPTRT053	Operate and control UV processes	NWP273A
NWPTRT054	Operate and control chloramination processes	NWP366A
NWPTRT055	Operate chlorine dioxide processes	NWP275A
NWPTRT056	Operate and control ozone processes	NWP274A
NWPTRT091	Operate and control solids handling processes	NWP360B
NWPTRT101	Operate and control lagoon processes	N.A.

* May not be directly equivalent

Glossary

Australian Qualification Framework (AQF)

The AQF is the national policy for regulated qualifications in Australian education and training. AQF Qualifications certify the knowledge and skills that a person has achieved through study, training, work and life experience. Units of competency in the National Water Training Package identify to a particular AQF level based on the complexity, specialisation and breadth of the unit.

Certification

A national program of recognition afforded to workers who have met industry defined minimum entry standards. This Certification Framework is underpinned by a need to ensure the provision of safe drinking water through minimum standards of Certification for water treatment Operators.

Certified Operator

A *Certified Operator* has operational responsibility for water treatment processes or facilities. Duties performed will range from basic sampling, testing and reporting, through to chemical dosing, control and optimisation of treatment processes.

The *Certified Operator* may have responsibility for more than one treatment systems at any one time, so long as it is reasonable to expect that drinking water quality and safety will be assured at all plants and the *Certified Operator's* current competencies cover all treatment processes under the responsibility of that person.

Consumer

A recipient of drinking water who is:

- An individual, community, city, town or state (public)
- A guest, customer or employee (private)

Drinking Water Supplier

An organisation/enterprise (public or private) or, individual that provides drinking water for human consumption. The *Drinking Water Supplier* includes, but is not limited to:

- major urban utility,
- corporation
- local government authority,
- public or private entity,
- small, regional or remote,
- wholesaler, retailer or contractor

Any organisation contracted to manage a Drinking Water System (or part thereof) is considered to be a *Drinking Water Supplier*.

Drinking Water Treatment System -

Is, for the purposes of this Framework, a subset of a *Drinking Water Supply System*, as defined under Section 3.2 of the ADWG. *Drinking Water Treatment Systems* are that part of the supply system that produce water intended for human consumption, where the water either;

- Does not pass through any treatment barriers; or
- Is treated by a single treatment barrier, or multiple treatment barriers, at a *Drinking Water Treatment Facility*.

Where a water treatment facility exists, the *Drinking Water Treatment System* is inclusive of downstream chemical dosing and disinfection.

It does not include direct or indirect drinking water recycling/re-use schemes.

Independent Contractors

For the purposes of this Framework, an independent contractor may provide expertise and services to other *Drinking Water Suppliers*;

Independent Contractors are not considered to be *Drinking Water Suppliers*. They are individuals (*Certified Operators*) who work within a *Drinking Water System* and must meet the minimum conditions stated in this Certification Framework.

Operator in Training

An Operator who is gaining experience under the guidance of a *Certified Operator* performing routine tasks and undertaking relevant competency development which culminates in attainment of relevant competencies (from NWP), as required by this Certification Framework.

The Operator in Training is not Certified under this Framework, but the *Drinking Water Supplier* is to ensure that opportunities are afforded to the person to develop all necessary competencies to achieve Certified status.

Registered Training Organisation

Training providers that are registered by a national or state regulator to deliver Nationally Recognised Training in the Australian Vocational Education and Training Sector.

Qualification

Issued under the Australian Qualifications Framework (AQF) by a Registered Training Organisation (RTO) as a result of completing a formal training and/or assessment pathway. Qualifications are defined in Industry Training Packages or accredited through the national, state or territory accrediting body for Vocational Education and Training (VET).

Treatment Process

Any process within a *Water Treatment System* that changes the physical, chemical or biological properties of water derived from any source in order to make it safe for human consumption or to make it comply with a regulatory order relating to human consumption. Treatment processes include, but are not limited to:

- Primary and Secondary Disinfection
- Coagulation and Flocculation
- Sedimentation and Clarification
- Dissolved Air Flotation
- Granular Filtration
- Membrane Filtration
- Reverse Osmosis
- Adsorption
- Ion Exchange Fluoridation
- Softening/Hardening
- Chemical Dosing

Unit of Competency

A single component of a qualification or a stand-alone unit that has been accredited through the same process as a Qualification.

Vocational Education and Training (VET)

Post-compulsory education and training, excluding degree and higher level programs delivered by higher education institutions (Registered Training Organisations), which provides people with occupational or work-related knowledge and skills. VET also includes programs which provide the basis for subsequent vocational programs or higher education programs.