

<b>Title</b>	<b>Demonstrate knowledge of quality management in water and wastewater treatment plants</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>5</b>

<b>Purpose</b>	People credited with this unit standard are able to describe: preventative maintenance systems relevant to water and wastewater treatment; plant life expectancy and depreciation of water and wastewater treatment equipment; and the role of quality assurance, quality control and product standards for water and wastewater treatment.
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<b>Classification</b>	Water Industry > Water - Generic
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<b>Available grade</b>	Achieved
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### Guidance Information

- Evidence presented for assessment against this unit standard must be consistent with safe working practices and be in accordance with applicable legislative and industry requirements.
- Legislation and references relevant to this unit standard include: Health and Safety at Work Act 2015, Water Services Act 2021, Resource Management Act 1991, and subsequent amendments;  
Ministry of Health, *Drinking-water standards for New Zealand*, Ministry of Health, Wellington, 2005 (Revised 2018), and subsequent replacements, available at [www.taumataarowai.govt.nz](http://www.taumataarowai.govt.nz).
- Definitions  
*Industry requirements* include manufacturers' specifications; and enterprise requirements which may include documented workplace policies, procedures, specifications, business, and quality management requirements relevant to the workplace in which assessment is carried out.  
*Infrastructure* includes treatment plant and its reticulation system.  
*Wastewater* may include stormwater and sewage systems.
- Learning and assessment activities for this unit standard must be informed by Te Mana o te Wai (refer to [Taumata Arowai](http://www.taumataarowai.govt.nz)) and the *National Policy Statement for Freshwater Management 2020* available from <https://environment.govt.nz/>.

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### Outcomes and performance criteria

#### Outcome 1

Describe preventative maintenance systems relevant to water and wastewater treatment.

**Performance criteria**

- 1.1 The necessity of routine maintenance is described in terms of deterioration of treatment infrastructure.
- 1.2 Procedures to manage asset lifespan and risk of equipment failure are identified and described.
- 1.3 Procedures to monitor mechanical conditions are identified and described in terms of preventive maintenance.

Range may include but is not limited to – audio and visual checks, temperature check, frequency analysis, performance checks, power drawn, record keeping, flow test; evidence is required for six.

**Outcome 2**

Describe plant life expectancy and depreciation of water and wastewater treatment equipment.

Range one each of plant, equipment, and structures.

**Performance criteria**

- 2.1 The expected service lives of plant items are described in terms of design life and process change.

Range typical production hours of mechanical plant, control and recording equipment duty, life of structures, technology change impacts.

- 2.2 Annual maintenance costs are described in terms of the implications of useful remaining life, depreciation, and risk of unplanned failures.

**Outcome 3**

Describe the role of quality assurance, quality control and product quality specifications for water and wastewater treatment.

**Performance criteria**

- 3.1 Quality assurance is described in terms of its relationship with risk management.

- 3.2 Quality control is described in terms of the use of standards for sampling and measurement.

Range standards may include but are not limited to – Drinking-Water Standards for New Zealand, resource consent discharge standards; evidence is required for one.

3.3 Product quality specifications are described in terms of their applications.

<b>Replacement information</b>	This unit standard replaced unit standard 17876.
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<b>Planned review date</b>	31 December 2027
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#### Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	19 September 2008	31 December 2018
Review	2	16 March 2017	31 December 2024
Review	3	26 May 2022	N/A

<b>Consent and Moderation Requirements (CMR) reference</b>	0101
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

#### Comments on this unit standard

Please contact Waihangā Ara Rau Construction and Infrastructure Workforce Development Council at [qualifications@WaihangāAraRau.nz](mailto:qualifications@WaihangāAraRau.nz) if you wish to suggest changes to the content of this unit standard.