

<b>Title</b>	<b>Describe and operate ultraviolet disinfection processes in drinking-water treatment</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>8</b>

<b>Purpose</b>	People credited with this unit standard are able to: describe ultraviolet disinfection processes; monitor and adjust the ultraviolet disinfection process; and carry out maintenance procedures on ultraviolet disinfection equipment, in drinking-water treatment.
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<b>Classification</b>	Water Industry > Water Treatment
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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, Hazardous Substances and New Organisms (HSNO) Act 1996, 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).
- Definition  
*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.
- 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 ultraviolet disinfection processes in drinking-water treatment.

**Performance criteria**

- 1.1 Regulations and drinking-water standards relevant to ultraviolet disinfection are described in terms of their purpose, requirements, and consequences of non-compliance.
- 1.2 Ultraviolet treatment theory is described in terms of disinfection of water supplies.
- Range dose, transmittance, intensity, cell disruption, vulnerability of pathogens, nil residual, water quality parameters, flow.
- 1.3 Ultraviolet disinfection methods are described in terms of operation and factors that affect performance.
- Range flow, design configuration.
- 1.4 The ultraviolet disinfection process is described in terms of the function of its component parts and identification of process failure.
- Range components – lamps (medium pressure, low pressure), ballast, transmittance meter, intensity sensor, cleaning systems.

**Outcome 2**

Monitor and adjust the ultraviolet disinfection process in drinking-water treatment.

**Performance criteria**

- 2.1 Monitoring equipment is calibrated, if required, tests or measurements for monitoring the process are carried out, and results are recorded, in accordance with *Drinking-water Standards for New Zealand* compliance requirements.
- 2.2 Process is adjusted.
- Range reasons for adjustment may include – results of monitoring and testing, analysis and identification of trends, response to process failure.
- 2.3 Consumables are checked and ordered.

**Outcome 3**

Carry out maintenance procedures on ultraviolet disinfection equipment in drinking-water treatment.

**Performance criteria**

- 3.1 Preventative maintenance procedures are carried out and recorded.
- 3.2 Any required repairs are carried out according to process and/or equipment failure, and recorded.

3.3 Procedures for maintaining process continuity are carried out.

<b>Replacement information</b>	This unit standard replaced unit standard 24952.
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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	16 March 2017	31 December 2024
Review	2	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 Waihanga Ara Rau Construction and Infrastructure Workforce Development Council at [qualifications@WaihangaAraRau.nz](mailto:qualifications@WaihangaAraRau.nz) if you wish to suggest changes to the content of this unit standard.