

41219 Relate wastewater treatment processes and collection system performance to effective wastewater treatment

Kaupae Level	3
Whiwhinga Credit	15
Whāinga Purpose	This skill standard is for people operating wastewater treatment plants. People with this skill standard can relate, and interpret wastewater characteristics, and relate treatment processes and collection system performance to discharge quality including environmental compliance outcomes. They can recognise routine operational conditions and identify common factors influencing treatment effectiveness. This skill standard is designed to develop whole-system understanding of wastewater treatment operations, from influent and collection through treatment and discharge. This skill standard aligns with the New Zealand Certificate in Water Services (Level 3) with strands in Drinking Water, and Wastewater [Ref: 5674] and may also contribute to other water services industry credentials.

Hua o te ako me Paearu aromatawai | Learning outcomes and assessment criteria

Hua o te ako Learning outcomes	Paearu aromatawai Assessment criteria
1. Interpret wastewater characteristics to determine treatment implications.	a. Identify common wastewater sources, including domestic and trade waste, and describe associated characteristics.
	b. Relate wastewater characteristics to treatment requirements.

Hua o te ako Learning outcomes	Paearu aromatawai Assessment criteria
2. Relate wastewater treatment processes and system configuration to discharge quality outcomes.	a. Describe the function and limitations of wastewater treatment stages and how these influence discharge quality under routine operating conditions.
	b. Describe how treatment processes operate together within a treatment system to influence discharge quality outcomes.
	c. Determine common limitations of treatment processes and relate these to risks to discharge quality outcomes.
	d. Interpret routine operational checks and observations used to confirm treatment performance.
	e. Determine environmental performance requirements and discharge conditions for treated wastewater discharge.
3. Relate wastewater collection system performance to treatment effectiveness.	a. Identify wastewater collection system in terms of components, function, and interrelationship.
	b. Determine how collection system performance and common issues influencing wastewater delivery and treatment effectiveness.

Pārongo aromatawai me te taumata paearu | Assessment information and grade criteria

Assessment specifications:

Evidence must demonstrate understanding of routine wastewater treatment and discharge processes through identification, explanation, and interpretation of wastewater treatment system configurations and system behaviour.

Evidence must be drawn from operational documentation such as process descriptions, site schematics, water quality results, monitoring records, standard operating procedures, or simulated plant data relevant to wastewater treatment operations.

Simulated workplace environments may be used. Where a simulated environment is used, it must enable valid assessment and support transfer of competence to an actual workplace.

Definitions

Operational requirements refer to the documented and embedded ways of working that govern how activities are planned, performed, monitored, and controlled in the workplace to ensure safe, consistent, and compliant operations.

Simulated workplace environments (for assessment purposes) refer to a controlled, authentic setting that replicates workplace conditions to enable learners to demonstrate skills and competencies. This may include physical or digital simulations, provided they reflect realistic tasks, interactions, and constraints.

Water services refer to industries responsible for working on or around water supplies, networks, plants, and systems.

Wastewater treatment system configurations include different source types, process arrangement and operational contexts relevant to New Zealand water services operations.

Ngā momo whiwhinga | Grades available

Achieved.

Ihirangi waitohu | Indicative content

- Wastewater sources and characteristics including trade waste.
- Wastewater treatment stages and processes including purpose, benefits and limitations.
- Consequences of sub-optimal treatment performance and appropriate operational actions to address identified issues.
- Wastewater collection systems and components including purpose, benefits, limitations.
- Operational checks and observations used to confirm treatment performance.
- Collection system issues, including blockages, overflows, infiltration, and ingress.
- Relevant legislation, regulations, and operational requirements including environmental performance requirements and discharge obligations.

Rauemi | Resources

Legislation, regulations and/or industry standards relevant to this skill standard include, but are not limited to:

- Health and Safety at Work Act 2015 - [Health and Safety at Work Act 2015 | WorkSafe](#).
- Water Services Act 2021 - [Water Services Act 2021, Public Act Contents – New Zealand Legislation](#).
- Hazardous Substances and New Organisms Act 1996 - [Hazardous Substances and New Organisms Act 1996 No 30 \(as at 05 April 2025\), Public Act Contents – New Zealand Legislation](#).
- Resource Management Act 1991 - [Acts and Bills | Ministry for the Environment](#).
- Wastewater standards – [Wastewater standards | The Water Services Authority - Taumata Arowai](#).

Pārongo Whakaū Kouna | Quality assurance information

Ngā rōpū whakatau-paerewa Standard Setting Body	Energy and Infrastructure Industry Skills Board
Whakaritenga Rārangi Paetae Aromatawai DASS classification	Engineering and Technology > Water Industry > Wastewater Treatment
Ko te tohutoro ki ngā Whakaritenga i te Whakamanatanga me te Whakaōritenga CMR	0120

Hātepe Process	Putanga Version	Rā whakaputa Review Date	Rā whakamutunga mō te aromatawai Last date for assessment
Rēhitatanga Registration	1	28 May 2026	N/A
Kōrero whakakapinga Replacement information	N/A		
Rā arotake Planned review date	31 December 2032		

Please contact Energy and Infrastructure Industry Skills Board at qualifications@energyinfra-skills.nz if you wish to suggest changes to the content of this skill standard.