

41228**Analyse wastewater treatment processes**

Kaupae Level	4
Whiwhinga Credit	18
Whāinga Purpose	This skill standard is for people working as wastewater treatment operators. People with this skill standard can analyse wastewater treatment process performance, determine operational responses to maintain compliance and evaluate how operational actions affect plant assets and operating costs. This skill standard aligns with the New Zealand Certificate in Wastewater Treatment Operations (Level 4) with optional strands in Activated Sludge, Effluent Disinfection, Fixed Growth Reactor, Separation, Sludge Treatment, and Ponds [Ref: 5673] and may also contribute to other credentials for the water services industry.

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

Hua o te ako Learning outcomes	Paearu aromatawai Assessment criteria
1. Analyse the function and objectives of wastewater treatment processes in relation to treatment plant objectives.	a. Identify wastewater sources and typical characteristics.
	b. Analyse how individual wastewater treatment processes contribute to achieving treatment objectives and compliance requirements.
	c. Analyse operational and environmental factors that influence wastewater treatment performance.
	d. Identify and interpret indicators used to confirm effective wastewater treatment.

Hua o te ako Learning outcomes	Paearu aromatawai Assessment criteria
2. Analyse wastewater treatment performance and determine operational responses to maintain treatment performance.	a. Explain factors that influence treatment process system design.
	b. Interpret wastewater quality and process performance data in relation to treatment effectiveness.
	c. Analyse the causes and potential consequences of sub-optimal treatment performance and determine appropriate remedies.
	d. Evaluate the effectiveness of treatment processes in achieving treatment objectives.
3. Analyse the impact of operational activities on wastewater treatment plant assets and operating costs.	a. Analyse how operational practices affect asset performance, condition, and operating costs.
	b. Interpret plant asset information to identify emerging and actual performance or condition issues.
	c. Analyse key operational cost drivers and your influence on those costs.

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

Assessment specifications:

Ākonga must not be assessed as asset managers but must demonstrate how their operational actions influence asset performance, condition and cost.

Evidence that must take place in a site-specific operational wastewater treatment context.

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.

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

Ngā momo whiwhinga | Grades available

Achieved.

Ihirangi waitohu | Indicative content**Treatment performance and process control**

- Wastewater sources and characteristic and drivers for treatment including environmental, and public health.
- Analysis of treatment stages, including benefits and limitations and indicators of effective treatment performance.
- Conventional and advanced treatment technologies.
- Consequences of sub-optimal performance and operational responses.

Operational context and constraints

- Influence of local geography, population, and economic context.
- Operational limitations and interdependencies between systems.

Assets, resources and operational costs

- Key asset types.
- Operational influences on asset performance, condition, and data interpretation.
- Operational cost drivers including labour, energy, and consumables.
- Implications of asset or process performance outside acceptable parameters.

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](#).
- Local Government (Water Services) Act 2024 - [Local Government \(Water Services Preliminary Arrangements\) Act 2024 No 31 \(as at 27 August 2025\), Public Act Part 1 Preliminary provisions – New Zealand Legislation](#).
- Wastewater Standards - [Wastewater standards | The Water Services Authority - Taumata Arowai](#).
- National Wastewater Environmental Performance Standards - [Discussion-document-National-wastewater-environmental-performance-standards-FINAL.pdf](#).
- Resource Management Act 1991 - [Acts and Bills | Ministry for the Environment](#).
- Te Mana o te Wai - [Te Mana o te Wai implementation | Ministry for the Environment](#).
- Health and Safety at Work (Hazardous Substances) Regulations 2017 - [Health and Safety at Work \(Hazardous Substances\) Regulations 2017 \(LI 2017/131\) \(as at 20 October 2025\) Contents – New Zealand Legislation](#).

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.