

Title	Describe wastewater reticulation system management, and management of critical control points		
Level	5	Credits	8

Purpose	People credited with this unit standard are able to: describe the importance of maintaining continuity of treatment of wastewater; describe the factors that affect risks due to construction and maintenance of the reticulation system; describe the procedures for taking a reticulation main out of service, clearing, unblocking and putting back into service; and identify critical control points, hazards, preventive actions, and corrective actions of wastewater reticulation systems.
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Classification	Water Industry > Water Reticulation
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Available grade	Achieved
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Guidance Information

- 1 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.
- 2 Legislation relevant to this unit standard includes: Health and Safety at Work Act 2015, Water Services Act 2021, Resource Management Act 1991, Hazardous Substances and New Organisms (HSNO) Act 1996, and subsequent amendments.
- 3 Definitions
Critical control point – specific point, procedure, or step in water treatment processes at which control can be exercised to reduce, eliminate, or prevent the possibility of a public health hazard.
Industry requirements may refer to but are not limited to relevant policies, processes, methodologies, industry codes of practice, site specific health and safety plans, standard operating procedures, site safety plans, quality plans, work plans, traffic management plans, contract work programmes, job safety analysis, safe work method statements, job instructions, manufacturer's requirements, contract specifications, manuals, procedural documents, Waka Kotahi New Zealand Transport Agency specifications and guidelines.
Water reticulation – in this context refers to all pipe systems, pumping systems, and components that contribute to the collection and disposal of wastewater and stormwater.

Outcomes and performance criteria

Outcome 1

Describe the importance of maintaining continuity of treatment of wastewater.

Performance criteria

- 1.1 The treatment of wastewater is described in terms of the importance of continuity of treatment, and the implications of disruption of conveyance.
- 1.2 The treatment of wastewater is described in terms of the importance of maintaining flow, and disposal.
- 1.3 Treatment service level requirements are described in accordance with process loading procedures.

Outcome 2

Describe the factors that affect risks due to construction and maintenance of the reticulation system.

Range public health risks, environmental contamination risks.

Performance criteria

- 2.1 The risks are described in terms of reticulation problem areas.

Range includes but is not limited to – low lying areas, long detention times, high velocity, low velocity.
- 2.2 The opportunities for contamination during new pipeline construction are described in terms of risks, and methods to reduce these risks.

Range includes but is not limited to – pipe storage, site cleanliness, hygiene facilities, trench inundation, pump lock-out.
- 2.3 The opportunities for contamination during maintenance are described in terms of risks, and methods to reduce these risks.

Range includes but is not limited to – positive water flows, site cleanliness, trench inundation, flushing, pigging, disinfection, hygiene.
- 2.4 The hazards and causes of backflow, and methods of prevention in wastewater reticulation systems are described in terms of the strengths and limitations of prevention methods.

Outcome 3

Describe the procedures for taking a reticulation main out of service, clearing, unblocking and putting back into service.

Performance criteria

- 3.1 The purpose and timing of the procedure are described with consideration for safety.
- Range may include but is not limited to – safety plan(s) for confined space entry, trench safety, traffic, excess height access, hazardous chemicals use.
- 3.2 Procedures for advising system uses and providing an alternative disposal method are described.
- 3.3 Reticulation main shut-down and draining are described.
- 3.4 The repair procedure and reticulation mains clearing are described.
- 3.5 The procedure for mains put back into service is described.

Outcome 4

Identify critical control points, hazards, preventive actions, and corrective actions of wastewater reticulation systems.

Range piped reticulation systems, reticulation features, pump stations, pumps.

Performance criteria

- 4.1 The critical control points in wastewater reticulation systems are identified.
- 4.2 The hazards, the causes of the events leading to their failure, and the level of risk are identified at each critical control point.
- 4.3 The preventive and corrective actions for persistent problems or events related to each hazard are identified.

Planned review date	31 December 2026
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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 2023
Review	2	24 March 2022	N/A

Consent and Moderation Requirements (CMR) reference	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@waihanga.nz if you wish to suggest changes to the content of this unit standard.