Water Supply

General Information

DRINKING WATER SAFETY PLAN

2025

Watercare

An Auckland Council Organisation

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Executive Summary

This Drinking Water Safety Plan (DWSP) outlines the approach taken by Watercare Services Limited (Watercare) to manage Waikato District Council (WDC) owned water supplies. Developed in accordance with the *Water Services Act 2021* and the *New Zealand Drinking-water Safety Plan Framework*, this plan demonstrates WDC and Watercare's shared commitment to delivering safe, secure, and reliable drinking water to all communities across the district.

WDC and Watercare demonstrate a strong commitment to drinking water quality management and the provision of safe and secure drinking water. This commitment is reflected in the organisation's strategy, plans, and budget.

WDC and Watercare adhere to the six principles of drinking-water safety:

1) Embrace a high standard of care
2) Protect source water
3) Maintain multiple barriers against contamination
4) Change precedes contamination
5) Suppliers must own the safety of drinking-water
6) Apply a preventive risk management approach.

These principles are embedded into all systems, processes and behaviours.

Each WDC water supply has undergone a qualitative risk assessment, evaluating risks from source to supply. Critical Control Points (CCPs) have been identified for each system, with defined limits and real-time monitoring to ensure timely detection and response to any deviations. The assessment process is outlined in this DWSP, and supply-specific risk register tables are included with each DWSP submission. Identified improvements are prioritised through a broader risk management programme that encompasses all WDC water supplies.

This DWSP includes the following framework components:

- Commitment to drinking water quality
- Assessment of the drinking-water supply for hazards, hazardous events, and risks
- Existing preventive measure
- Operational procedures
- Verification monitoring and inspection programme
- Improvement plan
- Management of incidents and emergencies
- Documentation and reporting
- Investigation
- Oversight, review, and continual improvement

Supporting information, such as operational procedures, monitoring schedules, training records, and contingency plans are maintained within Watercare's internal systems and referenced throughout each DWSP.

Together, these elements form a proactive and integrated approach to managing drinking water safety across all WDC supplies.

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Glossary

Acronym	Expanded
AMP	Asset Management Plan
APHA	American Public Health Association
AWWA	American Water Works Association
CCP	Critical Control Point
CEO	Chief Executive Officer
DMP	Drought Management Plan
DWSNZ	Water Services (Drinking Water Standards for New Zealand) Regulations 2022
DWSP	Drinking Water Safety Plan
E. coli	*Escherichia coli*
EIR	Event Investigation Report
FAC	Free Available Chlorine
FACe	Free Available Chlorine equivalent (found by calculation)
FD	Functional Description
GIS	Geographic Information System – satellite-based mapping
GV	Guideline Value
IANZ	International Accreditation New Zealand
IEC	International Electrotechnical Commission
ISO	International Organisation for Standardization
NTU	A measure of turbidity
PLC	Programmable Logic Controller
pH	A measure of acidity/alkalinity (pH 7 = neutral)
SCADA	Supervisory Control and Data Acquisition
SOP	Standard Operating Procedure
UVT	Ultraviolet Transmittance
WDC	Waikato District Council
WTP	Water Treatment Plant

1. Commitment to drinking-water quality management

WDC and Watercare are committed to providing safe and secure drinking-water to all consumers. This commitment includes the continuous improvement of drinking-water systems, as identified in this DWSP. Organisational commitment to drinking-water quality management, co-signed by the WDC and Watercare, is included in *Appendix 1: Commitment to Drinking Water Quality.*

The Waikato District is situated in the northern part of the Waikato region and has a resident population of approximately 86,000 (2023 census), with a relatively even mix of urban and rural communities. The main urban populations are centred in the towns of Huntly, Ngaaruawaahia, Raglan, Te Kauwhata, Pookeno and Tuakau.

WDC and Watercare share responsibility for the management and operation of public water supply systems across the Waikato District. Additionally, WDC has an agreement with Hamilton City Council to take up to 12,000 cubic metres per day, Watercare Auckland to take up to 5000 cubic meters per day and Te Kauwhata Water Association to take up to 4000 cubic metres per day.

These supplies are managed by Watercare staff under the *Operations and Maintenance* contract established by WDC on 1 October 2019. The contract encompasses all aspects of water and wastewater operations, maintenance, planning and customer activities. As part of this agreement, all WDC staff previously involved in water and wastewater servicing were transferred to Watercare.

All commercial and industrial properties are metered, and all residential properties have been metered since 2017. WDC operates a 24-hour customer service centre for fault reporting and drinking-water-related issues can be reported to Watercare through its 24-hour on-call support service.

Relationship of DWSP to Organisational Policy and Strategy

The provision of safe and secure drinking-water is visible in both WDC and Watercare's organisational policies and strategies. WDC has established a comprehensive strategic and organisational framework in all other organisational policies and strategic planning documents that refer to drinking-water management.

Table 3: Organisational Policies and Strategies

Title	To Access Listed Document
Waikato District Council Long Term Plan (LTP 25-34)	https://www.waikatodistrict.govt.nz/your-council/plans-policies-and-bylaws/plans/long-term-plan
Waikato District Council Asset Management Plan (AMP 25-34)	https://www.waikatodistrict.govt.nz/your-council/plans-policies-and-bylaws/plans/activity-management-plans
30 Year Infrastructure Strategy (2021 – 2051)	www.waikatodistrict.govt.nz/docs/default-source/your-council/plans-policies-and-bylaws/
Watercare Statement of Intent (SOI 25-28)	https://www.watercare.co.nz/About-us/Reports-and-publications

Watercare's Vision statement sets the direction for the organisation and provides a frame of reference for decision making:

What does it mean?

- We are transparent
- We act ethically and with integrity
- We engage openly, welcome feedback and act on it
- We are recognised for our commitment to safety in our products and for our people
- We are courageous and innovative in solving customer problems and constantly improving our level of service
- We provide safe, reliable water and wastewater services at minimal cost, and welcome feedback on ways to improve

Watercare's Mission statement reflects its commitment to providing safe and reliable drinking-water to all customers and communities served by its water sources, treatment plants and distribution systems:

Reliable

- A consistent supply
- Dependable response to issues
- Consistent approach to customer engagement, management and communication

Safe

- High quality water that meets or exceeds all quality standards
- Effective systems to measure and maintain water health, and to respond to potential issues
- Stringent health and safety systems to protect our customers and staff

Efficient

- Careful management of costs and suppliers
- Operational efficiency
- Fair and transparent pricing
- External awareness of how costs are derived, and the value received

Watercare's current strategic direction is outlined in the *Statement of Intent (SOI)*. This document uses integrated thinking to demonstrate a strong commitment to customer- and stakeholder-focused operations and illustrates the importance of water safety planning and drinking-water quality management.

The SOI is publicly available at: https://www.watercare.co.nz/About-us/Reports-and-publications

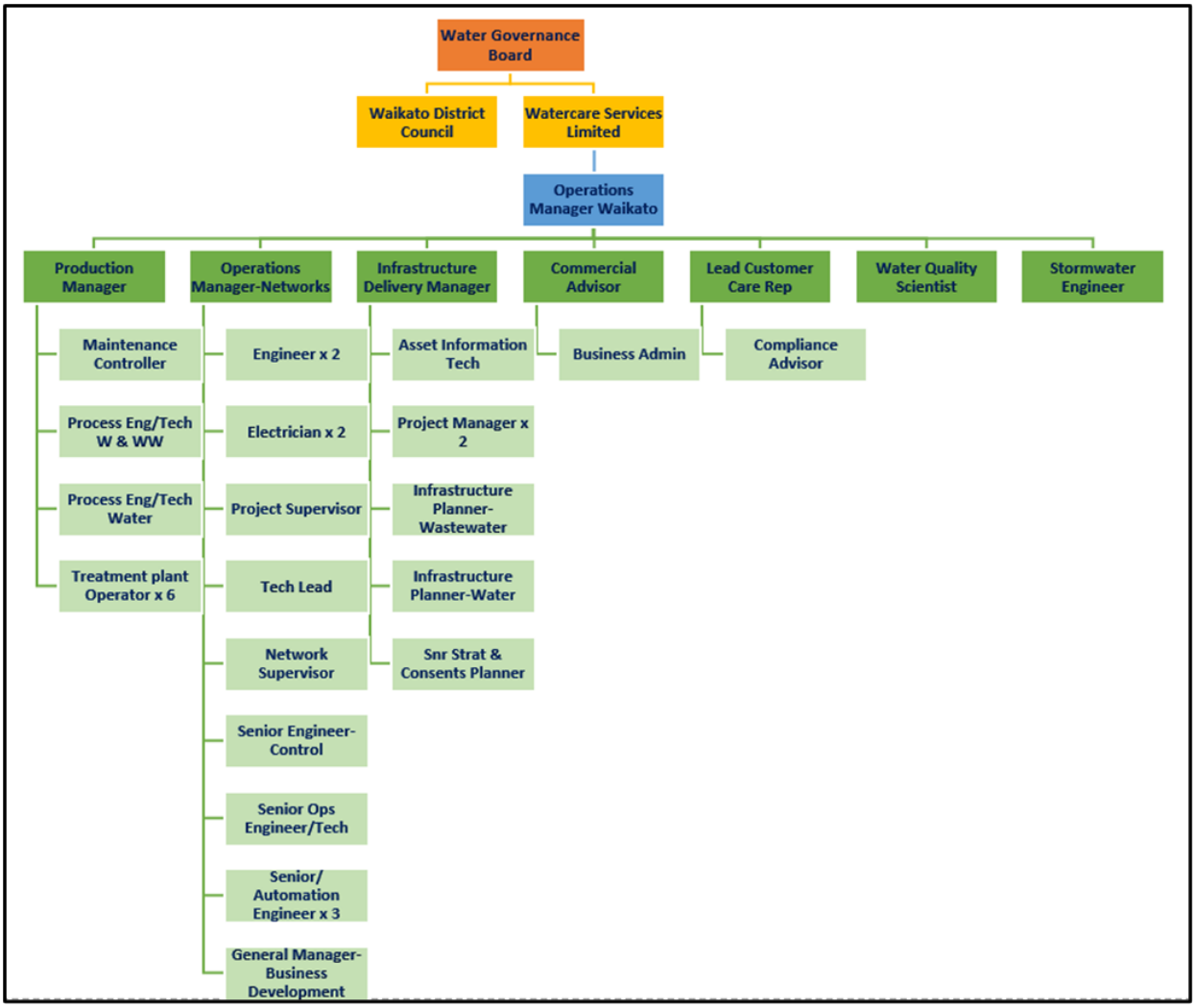

Figure 1: Watercare Waikato organisational chart.

The team leading the DWSP development includes senior management, technical specialists, operational team leaders, process engineers, and water quality scientists. These team members have a wide range of expertise and years of experience in drinking-water production, distribution, risk management and knowledge of the legislative requirements surrounding DWSP development. The senior staff within this team hold the authority to make decisions and enact changes.

Engaging Stakeholders

The WDC Stakeholder/Communications team is responsible for maintaining relationships with councillors and local board members. This includes responding to queries about water quality, providing up-to-date test results, and compliance-related communications. Elected officials, along with members of the public, are given opportunities to visit water treatment plants throughout the year to promote transparency and understanding. The long-term *Community Engagement Strategy* is included in *Appendix 2.*

The delivery of safe and secure drinking water to reticulated communities in the Waikato District is a shared responsibility between WDC and Watercare, and this DWSP has been developed collaboratively. While Watercare manages day-to-day operations, WDC retains responsibility for stakeholder liaison and customer-facing services. See *Figure 1: Watercare Waikato Organisational Chart* for an overview of Watercare's operational structure.

All staff working in water supply areas receive role-specific training. New employees are supervised by experienced staff to ensure they understand the scope of their role, can perform required tasks safely and demonstrate competence in day-to-day responsibilities. Supervision continues until the employee successfully completes a competency assessment conducted by their supervisor. In addition to task-specific training, Watercare supports the professional development of staff, for example:

- Following initial water treatment plant-based training, Operators, Process Technicians, and Process Engineers are enrolled in either the National Certificate or National Diploma in Drinking-Water Treatment, depending on their prior learning and available resources.
- Health and Safety training specific to their role.

Watercare has a strong internal team of technical and engineering experts to support the effective management of water supply systems and the associated risks. A long-term employee engagement plan, focused on awareness and the delivery of safe and secure drinking-water is included in the training matrix programme. Records of completed training and development activities are included in *Appendix 3: Training Matrix.*

Te Mana o te Wai

WDC and Watercare are committed to building constructive and meaningful relationships with Iwi, Hapuu and Mana Whenua, giving effect to *Te Mana o te Wai*. Waikato Tainui, a key iwi partner to WDC, authored *Tai Tumu, Tai Pari, Tai Ao* – the Waikato-Tainui Environmental Plan, which plays a critical role in improving the health and wellbeing of the Waikato River.

All drinking water suppliers must give effect to *Te Mana o te Wai* as it applies to their functions, powers, and duties under the *Water Services Act 2021*. This principle is central to Watercare's DWSPs and Source Water Risk Management Plans (SWRMP) and is applied in alignment with the *National Policy Statement for Freshwater Management* (NPS-FM).

Te Mana o te Wai recognises the fundamental importance of water and promotes restoring balance between water, the environment, and communities. It is grounded in the concept of *ki uta ki tai* (from the mountains to the sea), which broadens water management to include flood control, land use, water-sensitive urban design, commercial allocation, and the active role of Mana Whenua.

Protecting water also means protecting the health and wellbeing of the wider environment. From a mātauranga Māori perspective, this includes safeguarding the *mauri* (life force) of the water. *Te Mana o te Wai* applies to all aspects of freshwater management, not just those specified in the NPS-FM.

The NPS-FM outlines a three-tiered hierarchy of obligations under *Te Mana o te Wai*, which guides freshwater management decisions:

1. **First:** The health and wellbeing of water bodies and freshwater ecosystems
2. **Second:** The health needs of people (e.g. access to safe drinking water)
3. **Third:** The ability of people and communities to provide for their social, economic, and cultural wellbeing, now and in the future

The above priorities are informed by six principles that relate to the roles of tangata whenua and other New Zealanders in the management of freshwater:

1. **Mana whakahaere** – the authority of tangata whenua to manage freshwater
2. **Kaitiakitanga** – the obligation to protect and sustainably use freshwater
3. **Manaakitanga** – showing care and respect for freshwater and others
4. **Governance** – decision-making that prioritises freshwater health
5. **Stewardship** – the duty of all New Zealanders to manage freshwater responsibly
6. **Care and respect** – ensuring freshwater supports national wellbeing

Local authorities must actively involve tangata whenua in freshwater management, including decision-making, policy development, identifying Māori freshwater values, and integrating mātauranga Māori.

Engaging Community

The WDC's consumer engagement strategy is led by the Communications and Customer teams. Engagement programmes are outlined on the WDC website and explain how customers and community members are involved in drinking-water initiatives and water conservation efforts. Any changes to a community's water supply are communicated through these channels to ensure people are informed both in advance and during the transition.

2. The Drinking Water Supply System

Watercare Waikato oversees the collection, treatment, and distribution of drinking water across the Waikato District, supporting domestic, dairy and agricultural needs. The district is served by seven water treatment plants, each delivering water that complies with drinking water standards in sufficient quantities to meet projected peak demands.

The Waikato River is the district's primary water source, supplying approximately two-thirds of the total annual water volume. Several isolated communities rely on alternative source: Raglan and Onewhero are supplied by spring water, Te Akau draws water from a bore, and Port Waikato utilises the Maraetai Stream. Communities in the southern and western areas surrounding Hamilton receive treated Waikato River water from the Hamilton Water Treatment Station, and Watercare Auckland provides treated Waikato River water to Tuakau and Pookeno. Watercare Waikato and WDC manage the local distribution network in these areas.

A detailed description of the drinking-water supply system including the catchment, source, treatment and distribution network is provided in each individual DWSP.

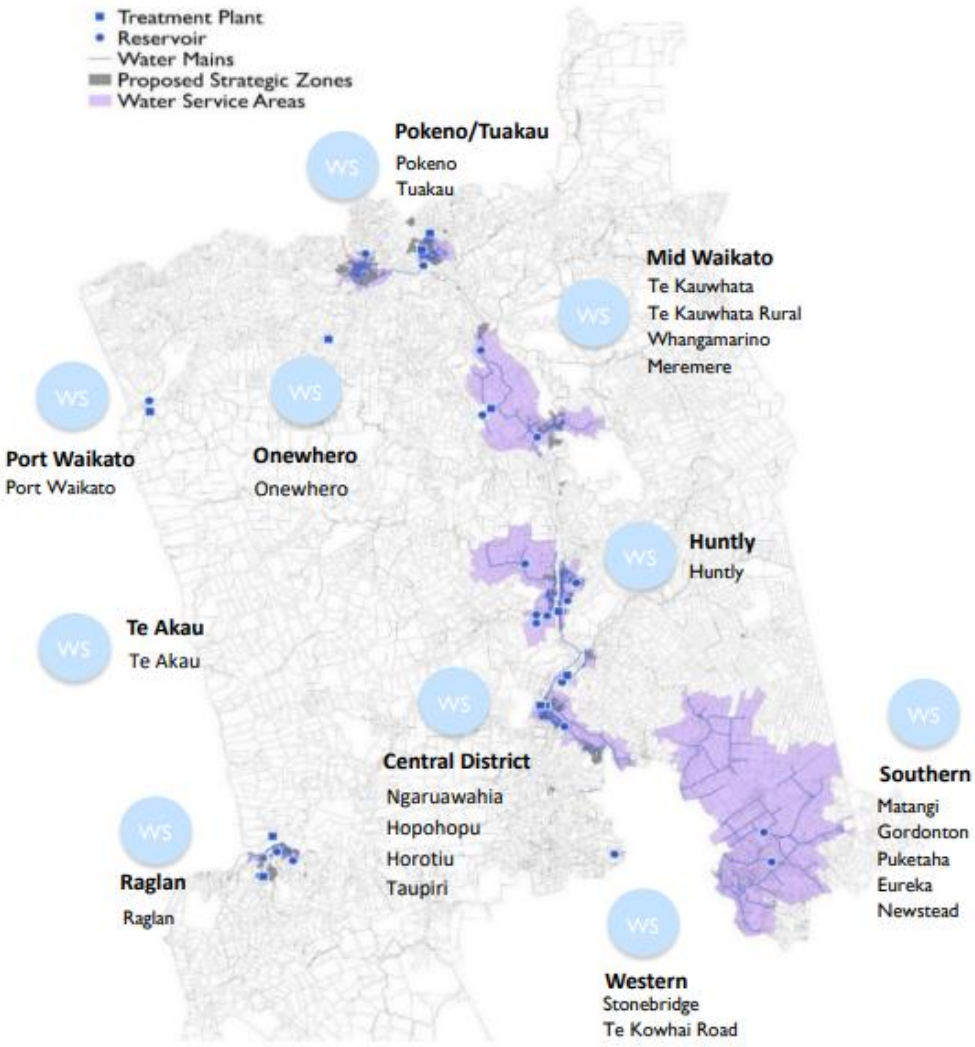

Figure 2: Location of water supplies in the Waikato District.

Huntly Supply System

The Huntly WTP supplies water to the Huntly township, surrounding rural areas, and key industrial users including Genesis Huntly Power Station and the Solid Energy Mine. Water is drawn from the Waikato River and treated at the Jackson Road facility using coagulation, flocculation, clarification, filtration, UV disinfection, chlorination and fluoridation. Continuous monitoring of turbidity, conductivity, UVT, pH, chlorine, fluoride and flow ensures compliance with drinking water standards. Treated water is distributed via direct supply or reservoir-fed reticulation. A bulk transfer pipeline to Ngaaruawaahia was installed in 2019 to improve system resilience and support supply demand.

Central District Supply System

The Central District scheme supplies water from the Ngaaruawaahia WTP to Ngaaruawaahia, Horotiu, Hopuhopu, Taupiri, and nearby rural areas. Key consumers include Holcim Ready Mix Concrete, Astra Poultry Lodge, Christian Youth Camp, and Turangawaewae Marae. Water is abstracted from the Waikato River and treated at the Brownlee Avenue plant using a multi-barrier process including coagulation, flocculation, filtration, clarification, UV disinfection, chlorination and fluoridation. Continuous monitoring of turbidity, conductivity, UVT, pH, chlorine, fluoride and flow ensures consistent water quality. Treated water is pumped to a reservoir and gravity fed to the reticulated areas.

Mid Waikato Supply System

The Mid Waikato scheme supplies water from the Te Kauwhata WTP to Te Kauwhata, Rangiriri, Whangamarino, Meremere, and Springhill Prison. Raw water is abstracted from the Waikato River, stored in a reservoir owned by the Te Kauwhata Water Association (TKWA) and treated at the Hall Road plant. The WTP is operated by Watercare under contract with TKWA. Treatment process includes coagulation, flocculation, sedimentation, filtration, UV disinfection, chlorination, and fluoridation, with instrumentation for continuous monitoring of turbidity, pH, and chlorine levels. Treated water is distributed via gravity and booster pumps to the surrounding communities.

Raglan Supply System

The Raglan WTP supplies water to the Raglan township. Raw water is drawn from a spring in the upper reaches of the Omahina Creek. The water undergoes UV disinfection followed by chlorination before being pumped to an onsite high-pressure reservoir. Supply to consumers is delivered via gravity and pumped distribution.

Port Waikato Supply System

The Port Waikato WTP supplies water to public facilities in Port Waikato including toilets, the campground, marae, fire station, surf club, and Council buildings. Water is sourced from the Maraetai Stream and treatment process included clarification, filtration, UV disinfection and chlorination. Treated water is pumped to two reservoirs and is fed to the village by gravity.

Onewhero Supply System

The Onewhero WTP supplies water to the community of Onewhero. Water is pumped from a spring box, underneath the treatment shed and treated by filtration, UV disinfection and chlorination. Treated water is pumped directly into the reticulation, with pressure switches controlling pump activation.

Te Aakau Supply System

The Te Aakau WTP supplies water to the Te Aakau South community. Water is abstracted from an on-site bore and undergoes filtration, UV disinfection and chlorination. The water is pumped to a storage reservoir and gravity-fed through the reticulation network.

Southern, Western and Northwestern Supply System

The Southern, Western and Northwestern District schemes supply water from the Hamilton Water Treatment Station to Eureka, Gordonton, Puketaha, Newstead, Matangi, Stonebridge and Te Kowhai Road. Water is sourced from the Waikato River and treated at the Waiora Terrace plant using clarification, filtration, UV disinfection, and chlorination. Granulated activated carbon is available for cyanotoxin removal. Water is received via bulk meters and distributed to the reticulated area and storage reservoirs by gravity or booster pumps.

Pookeno and Tuakau Supply System

Water is supplied to Tuakau and Pokeno communities from the Watercare WTP off Trig Road in Tuakau. Sourced from the Waikato River, water undergoes coagulation, clarification, membrane filtration, biological activated carbon filtration, and chlorination. Treated water is delivered to reservoirs and gravity-fed into the distribution zones.

Assessment of Water Quality Data and Catchment Characteristics

Watercare collects compliance and operational samples across all sources, treatment plants, booster pump stations, reservoirs, and distribution points. Since 1 January 2023, results have been submitted to Taumata Arowai via the Hinekōrako portal in accordance with compliance reporting requirements. Reports for Watercare Waikato are developed and maintained by Water Outlook and are based on the *Drinking Water Quality Assurance Rules (DWQAR) 2022 (Revised 2024)* and the *Drinking Water Standards New Zealand (DWSNZ) 2022.*

With support from the Water Quality Scientist, operational teams regularly review current and historical monitoring data to ensure a comprehensive understanding of water quality. This data also underpins in-depth event reviews, issue identification, future planning, and continuous improvement of Watercare's knowledge base.

Treatment barriers and ongoing source water monitoring are informed by evaluations of source water quality data. Watercare's source monitoring programme is tailored to the specific risks of each source. A summary of source water quality and catchment characteristics are provided within each individual Catchment Risk Assessment (CRA). These assessments are conducted in collaboration with local authorities to understand land use, contaminant sources, and physical catchments. The findings inform the SWRMP, support compliance with the DWSNZ, DWQAR, and the Water Services Act, and guide the management of drinking water supplies. All identified risks are thoroughly documented in the SWRMP.

The CRAs are listed in *Appendix 5*, and the SWRMP, as required by the *Water Services Act 2021*, is included in *Appendix 4.*

Microbiological Log Reduction Values for Level 3 Supplies

Watercare uses a multi-barrier approach to protozoa removal, assigning 'log credits' to each treatment process. These are combined to determine total removal effectiveness. Log credits are allocated to sources and treatment plants based on catchment risk assessments and are detailed in the DWSPs and the SWRMP. The assessments identify contamination risks, confirm required protozoa log removal levels under the *Drinking Water Standards for New Zealand 2005 (Revised 2008)*, and track changes in catchment activities that may increase oocyst levels.

Hazardous Event Identification and Risk Assessment

A qualitative risk assessment approach has been taken for the Water Supply Risk Tables. These tables are specific to each WTP and distribution system and have been included alongside each DWSP submission. To support system-wide visibility, a consolidated document containing all risk tables for WDC supplies is included in *Appendix 6: Water Supply Risk Tables – All Supplies*. The tables identify potential public health risks across the entire supply system, with each hazardous event evaluated based on its likelihood and consequence. To better suit individual supplies, the likelihood and consequence categories have been adapted from the *New Zealand DWSP Framework (2019)*, and the overall risk rating is calculated as the product of these factors. The risk tables address the following areas:

- Catchment
- Intake
- Coagulation, Flocculation Sedimentation/PAC Dosing
- Filtration
- UV Disinfection
- Chlorination
- Clear Water Tank and Lift Pumps
- pH Correction
- Fluoridation
- Storage Reservoirs
- Reticulation
- Other

Table 4: Likelihood Scale

Likelihood	Description
Almost certain	It is expected to occur in most circumstances.
Likely	Will probably occur (once in 1 or 2 years)
Possible	Might occur at some time (once in 10 years).
Unlikely	Could occur at some time (once in 50 years).
Rare	Only in exceptional circumstances (once in 100 years).

Table 5: Consequence Scale

Consequences	Description
Insignificant	Insignificant public health impact.
Minor	Minor public health impact or inconvenience to supply users.
Medium	Moderate public health impact and/or short-term loss of supply.
Major	Major public health impact and/or loss of supply for a long period. Small number of water-borne illnesses.
Catastrophic	Major public health impact. Significant water-borne illness.

Table 6: Risk Level Allocation Table

	Consequence				
Likelihood	**Insignificant**	**Minor**	**Medium**	**Major**	**Catastrophic**
Almost certain	Moderate	Moderate	Very High	Extreme	Extreme
Likely	Low	Moderate	High	Very High	Extreme
Possible	Low	Moderate	Moderate	Very High	Very High
Unlikely	Low	Low	Moderate	High	Very High
Rare	Low	Low	Low	Moderate	High

Critical Control Points

Watercare's DWSPs incorporate Critical Control Points (CCPs), which are essential for maintaining the quality and integrity of each water supply system. CCPs are the process barriers and monitoring points used to control and manage drinking water. They are selected based on identified risks, have defined limits and are monitored frequently to ensure timely detection of failures, enabling corrective action to eliminate or minimise public health risks. Each CCP includes a target limit, action limit, and critical limit, with the latter representing the threshold between acceptable and unacceptable performance.

The defined limits for the CCPs are described as follows:

- Target limit (operational parameters) is designed to allow checks on control and are monitored continuously.
- Action limit (performance limits) is designed to show when optimum control is lost, and corrective action needed. This is monitored continuously with alarm limits. Corrective actions are defined for when performance limits are not met.
- Critical limit is designed to shut down WTP if corrective actions fail to regain control and mitigate risks to public health.

Watercare's advanced automation systems provide multiple layers of process protection. For example, the Rapid Media Filtration Process is controlled and alarmed to ensure optimal operation and minimise the risk of supply shortfall. While DWSPs do not detail control functionality, each site has a Process Functional Description that explains how CCPs are managed. Control system set points are based on system risk, and response actions are prioritised according to the scale and impact of the risk. If a critical limit is exceeded, the CCP will shut down to eliminate the risk. High-level alarming and structured alarm-response processes support this control strategy.

The critical control points (CCPs) and their purpose are included as *Appendix 7*. Preventive measures, corrective actions, and contingency procedures for each CCP are outlined in the supply-specific DWSPs.

Preventive Measures for Drinking Water Quality Management

Watercare applies a multi-barrier approach to identify and implement preventive measures across each drinking-water supply system. This approach ensures that if one barrier fails, others can compensate, maintaining the safety and reliability of the supply. Supported by continuous improvement, this approach ensures both public health and business risks are effectively managed.

Staff regularly assess the effectiveness of these measures and respond to any unacceptable risks by enhancing existing controls or introducing new ones. For public health risks, the focus is on preventing contamination of drinking-water and ensuring continuity of supply. These measures are designed to reduce the likelihood of risk events through ongoing monitoring, analysis, inspection, and reporting.

The preventive measures are further supported by the *Watercare Incident Management Plan* (IMP), which outlines a structured response to a wide range of potential water quality incidents. The IMP is included in *Appendix 8.*

Details of individual WTP multi-barrier systems are provided in the supply-specific DWSP.

Table 7: Barriers and Preventative Measures in place at Watercare Waikato WTPs.

Four Types of Barriers	Existing Preventive Measures Include:
Preventing hazards entering the raw water	• Wedge wire intake screens • Sanitary bore head
Removing particles and hazardous chemicals from the water by physical treatment	• Coagulation, Flocculation, Sedimentation • Rapid sand filtration – CCP
Killing or inactivating pathogens in the water by disinfection	• Cartridge filtration - CCP • UV disinfection – CCP • Chlorination with contact time – CCP
Maintaining the quality of the water in the distribution system	• Residual disinfection maintained • Hygiene and construction codes of practice • Adequate network pressures maintained • Backflow prevention programme • Reservoirs protected from ingress • Online continuous SCADA monitoring and alarms

Corrective Actions

Corrective actions are taken when routine monitoring or inspections indicate that a preventive measure is deviating from expected performance. System adjustments are made to re-establish control. Incident and emergency plans are activated when normal corrective actions cannot restore operational performance quickly enough to prevent drinking-water of an unacceptable quality from reaching consumers.

3. Operational Procedures

Operational procedures include defined performance criteria to assess and confirm the functionality of each component within the water supply system. These documents are stored electronically and are accessible by operations staff. Changes to the procedures must be approved by authorised personnel. Staff training records are included in the training matrix.

Operational and maintenance procedures have been prepared for all components of the water supply. At Watercare, these procedures are grouped as following:

- Standard Operating Procedures (SOPs; *Appendix 15*)
- Functional Descriptions (FDs)
- Process related drawings (P&IDs and PFDs)
- Operational Manuals
- Calibration Manuals
- Maintenance Schedules

Performance criteria are defined across Watercare's water supply system and based on the principal of early intervention, ensuring sufficient time is available to take corrective action before compliance limits are breached.

Table 8: SOPs, FDs and Operational Manuals

Title	To Access Listed Document
Water Production	
Isolations Procedure	O:\Ops\Watercare Waikato
Chlorine Gas Drum Changeover	O:\Ops\Watercare Waikato
Physical Entry into Treated water reservoirs/chamber	O:\Ops\Watercare Waikato
UV module Cleaning	O:\Ops\Watercare Waikato
Manage a Level 1 Minor Local (Contained) Chlorine Gas Leak	O:\Ops\Watercare Waikato
Manage a Level 2 Moderate Local (Contained) Chlorine Gas Leak	O:\Ops\Watercare Waikato
Manage a Level 3 Major Local (Uncontained) Chlorine Gas Leak	O:\Ops\Watercare Waikato
Spill Free Chlorine Buffer (solution)	O:\Ops\Watercare Waikato
Manage spill of Phosphoric acid (solution)	O:\Ops\Watercare Waikato
Enter Data into the weekly verification tab	O:\Ops\Watercare Waikato
Enter data into water outlook primary calibration	O:\Ops\Watercare Waikato
Manage SCADA On-Call and Alarm system – Treatment Plants	O:\Ops\Watercare Waikato
Respond to SCADA Alarms for Treatment Plants	O:\Ops\Watercare Waikato
Create a Trends Page on Archestra	O:\Ops\Watercare Waikato
Perform a Calibration for the real UV254 (realtech)	O:\Ops\Watercare Waikato
Perform a Primary Calibration for the Chlorine Analyser (Deplox 3)	O:\Ops\Watercare Waikato

Perform a Primary Calibration on the Hach Turbidimeter	O:\Ops\Watercare Waikato
Perform a Primary Calibration on the pH Analyser (Crius)	O:\Ops\Watercare Waikato
Perform a Primary calibration on the pH analyser (Depolox 3)	O:\Ops\Watercare Waikato
Perform a Primary Calibration on Treated Water Chlorine Analyser	O:\Ops\Watercare Waikato
Perform a Verification for the Chlorine Analyser (Crius)	O:\Ops\Watercare Waikato
Perform a Verification for the Chlorine Analyser (Depolox 3)	O:\Ops\Watercare Waikato
Perform a Verification for the Hach Turbidimeter	O:\Ops\Watercare Waikato
Perform a Verification for the pH Analyser (Crius)	O:\Ops\Watercare Waikato
Perform a Verification for the pH Analyser (Depolox 3)	O:\Ops\Watercare Waikato
Undertake a Water Shutdown (Planned or unplanned)	O:\Ops\Watercare Waikato
Operations	
Carry Out Reservoir Inspections	O:\Ops\Watercare Waikato
Customer Water Quality Complaint	O:\Ops\Watercare Waikato
Flush a water main (routine and Reactive)	O:\Ops\Watercare Waikato
Install _ Replace a Faulty Water Meter	O:\Ops\Watercare Waikato
Inspect and Test Hydrants	O:\Ops\Watercare Waikato
Installing a New Hydrant or Valve	O:\Ops\Watercare Waikato
Investigate a Water Pressure or Flow Complaint	O:\Ops\Watercare Waikato
Manage SCADA On-Call System - Reticulation	O:\Ops\Watercare Waikato
Perform a chorine test to check for potable water	O:\Ops\Watercare Waikato
Remove _ Reinstall Flow Restrictors in Rural Metered Water Connections	O:\Ops\Watercare Waikato
Repair a Major Water Break	O:\Ops\Watercare Waikato
Repair a Minor Water Break	O:\Ops\Watercare Waikato
Undertake a Water Shutdown (Planned or unplanned)	O:\Ops\Watercare Waikato

Operational Monitoring and Inspections

Operational monitoring and inspections involve regular measurements and observations to assess and confirm the performance of the preventive measures, including the Critical Control Points. The working document can be accessed at O:\Ops\Watercare Waikato\Water Safety Plans\1. DWSP Attachments.

Table 9: Monitoring and Inspection Requirements

Ref	What to Measure or Observe	How Often	What to Do With the results	Responsibility
Catchment (Huntly, Ngaaruawaahia, Te Kauwhata, Raglan, Port Waikato, Onewhero, Te Akau).				
Manual checks (visual)	Visual inspection of intake of all intakes.	Weekly	Investigate, escalate adverse findings	Duty Operators
	Intake dive surveys	Annually	Repair/replacement as required.	External Contractors
SCADA records	Online pH, NTU, stream weir ultrasonics, flow meters	Continuous with alarm set points	Verify and or calibrate as required.	Duty Operators Process Engineer
Maintenance/ mechanical checks	Analysers, electrical sensors, Electrical systems,	Annually	Repair/replacement as required.	External Contractors
Performance Monitoring	Drinking water compliance and operational monitoring schedule	Various	Short and long-term evaluation of results. Follow Water Quality Incident Response Plan as required.	Water Quality Scientist Watercare lab
Treatment Plant ((Huntly, Ngaaruawaahia, Te Kauwhata, Raglan, Port Waikato, Onewhero, Te Akau).				
Manual checks (visual)	Raw water jar tests Equipment checks Chemical dosing checks Chemical storage levels UV lamps, run hours	Weekly	Adjust dose rates. Reorder chemicals.	Duty Operators Process Engineer
	PAC dosing system	Weekly when in use	Adjust dose rates. Reorder chemicals.	Duty Operators Process Engineer
SCADA records	Online pre-dosing pH, clarifier turbidity, filter turbidity, UV intensity, UV transmissivity, UV turbidity, filtered water chlorine, pH, treated water chlorine, pH and HFA. Flow, level meters, valve positions. Chemical dosing tanks.	Continuous with alarm set points	Linked to critical control points. Verify and or calibrate as required.	Duty Operators Process Engineer
Maintenance/ mechanical checks	Cleaning clarifiers and filter walls	As required		Duty Operators

Ref	What to Measure or Observe	How Often	What to Do With the results	Responsibility
	Flow meter calibrations	Annually	Repair/replacement as required.	External Contractors
	Analysers, electrical sensors, Electrical systems, PLCs, PSUs, dose pumps and other chemical delivery systems, UV units and lamps, plant security systems	Annually	Repair/replacement as required.	External Contractors
	Chlorine gas delivery systems	3-monthly	Repair/replacement as required.	External Contractors
	Backup PSU replacements	Every 2 years		External Contractors
Performance Monitoring	Drinking water compliance and operational monitoring schedule	Various	Short and long-term evaluation of results. Follow Water Quality Incident Response Plan as required.	Water Quality Scientist Watercare lab
Network (All supplies).				
Manual checks (visual)	Critical pipes (pipe bridges Air valve chambers (Hall Road area only)	Annually		Network Operations Team
	Reservoir contamination and security inspection	6 monthly	Cleaning, maintenance as required	Network Operations Team
SCADA records	Flow rates from main reservoirs Flow rates from pump stations Network pressure at pump stations Network pressure at main reservoirs	Continuous with alarm set points		Network Operations Team
Maintenance/ mechanical checks	Full electrical inspection of pump stations and reservoir control and telemetry. Critical valve exercising Generator servicing and load testing	Annually	Repair/replacement as required.	External contractor/ Network Operations Team
	Generator checks	2-monthly	Repair/replacement as required.	External contractor/ Network Operations Team
	Routine flushing at key points– Huntly	Monthly		Network Operations Team

Ref	What to Measure or Observe	How Often	What to Do With the results	Responsibility
	Reactive flushing	As required		Network Operations Team
	Reservoir detailed cleaning and inspection	As per reservoir register list	Cleaning, maintenance as required	
	Pipe and other network asset renewals programme.	As planned		Infrastructure Development Team
	Medium and high-risk backflow protection device testing	Annually	Repair/replacement as required.	External contractor/ Network Operations Team
Performance Monitoring	Drinking water compliance and operational monitoring schedule	Various	Short and long-term evaluation of results. Follow Water Quality Incident Response Plan as required.	Water Quality Scientist Watercare lab
	Network modelling Modelling in place for large urban areas.	Calibrated/updated every 5-10 and as required due to growth/ change of use.	Infrastructure planning	Infrastructure Development Team
	Water balance/loss calculation	Annually	Infrastructure planning	Customer care Team/ Water Quality Science

Control Systems

Key elements of Watercare Waikato's WTPs are fully automated using a SCADA system, which provides control under normal operating conditions. Control is available locally at each WTP via HMIs, and remotely through secure networked computers accessible by Watercare Operators and Production staff. This system significantly reduces response time to operational events.

Plants can operate in automated, remote manual, or local manual modes, as outlined in *Table 10.*

Table 10: Water Treatment Plant Operational Modes

Control Mode	Description
Automated	The control system has full control over plant operations, automatically adjusting various components to manage controlled variables. The operation of the plant may be interlocked to other events and alarms to safeguard the affected process.
Remote Manual	The plant can be manually operated using the SCADA system to issue commands, either from the WTP control room or remote operator terminals. Equipment not set to 'manual' remains under system control, generating alarms in response to interactions with manually controlled components.
Local Manual	The plant is controlled locally by WTP staff, without interlocks, meaning staff are fully responsible for ensuring processes and equipment are safeguarded. Equipment not set to 'local' remains connected to the control system, which continues to generate alarms in response to interactions with locally controlled equipment.

4. Verification Monitoring Programme

Watercare monitors water quality parameters throughout the treatment process and distribution network using both continuous online analysers connected to SCADA and scheduled physical sampling. This monitoring ensures compliance with the DWSNZ, the DWQAR, Bulk Supply Agreements and resource consent conditions, while also supporting process efficiency and optimisation.

Operational monitoring provides early warning of potential issues, allowing corrective actions to be taken before compliance limits are breached. Watercare's risk management strategy is informed by a detailed understanding of water quality and quantity, gained through extensive compliance and operational monitoring. Where risk assessments indicate a need for action, such as when determinands without DWSNZ Maximum Acceptable Values (MAVs) or Guideline Values (GVs) are detected, response plans have been developed in line with international best practice. These plans are used in conjunction with the DWSP, and associated findings and strategies are available for review at the Watercare Waikato office.

Drinking Water Quality Compliance Monitoring Plan

Drinking water quality sampling and laboratory analysis programmes have been developed for all water sources, treatment plants, and distribution networks based on risk assessments, compliance requirements, and process monitoring needs. These programmes are reviewed annually or as needed in response to operational changes (see *Appendix 9*). Detailed sampling schedules are available via the link provided in *Appendix 17*.

In rare cases, such as extreme weather or health and safety concerns affecting sampling staff, alternative arrangements will be made to meet DWSNZ and DWQAR requirements. If sampling cannot proceed, Taumata Arowai will be notified in advance where possible, or at the earliest convenience.

Watercare Waikato's compliance monitoring plan consist of the following components:

- Compliance Overview
- Laboratory monitoring schedule of monitoring for source, treatment plan and distribution
- Frequency and calendar schedules
- Sample point database and maps
- Reservoir Register and storage management plan
- Accredited laboratory and accredited sampling
- Water Quality Incident Response Plan

Laboratory Service Provider

Watercare Laboratory Services, a business unit of Watercare, is contracted to carry out all drinking-water sampling and testing. The laboratory is IANZ accredited to NZS/ISO/IEC 17025 for chemical and biological examination of water, wastewater, and environmental samples, and is approved by Taumata Arowai for compliance testing. All accredited methods are verified through IANZ audits, and laboratory staff undergo regular training to maintain compliance with the NZS/ISO/IEC 17025 standard.

Sampling protocols generally follow *Standard Methods for the Examination of Water and Wastewater*, 20th Edition, published by APHA, AWWA, and WEF. Some analytical work is subcontracted to external laboratories, which must also hold appropriate accreditation for the tests performed.

Instrumentation

The WTPs incorporate a number of analysers for the provision of real time information on the system operation to staff. They are used for a number of purposes including:

- Identification of parameter trend changes.
- Operational control.
- Compliance with standards.

The analysers are configured with programmable alarm set points established for key water quality parameters, such as flow, pH, conductivity, and chlorination. When these are breached, alerts are sent to the on-call operator and on-call controller via mobile phone, ensuring prompt remedial action to minimise impact and maintain supply safety, security, and compliance.

Routine validation, calibration and verification procedures are outlined in site-specific SOPs. Calibration and instrument maintenance schedules have been developed and are kept on site and in Water Outlook. Instrument calibrations are carried out by WTP Operators and Chemfeed, a specialist contractor.

Consumer Satisfaction

Monitoring consumer comments and complaints is a vital part of water supply operations. Complaints and information received from consumers is received by WDC and recorded in their Customer Relationship Management system (Tech One). Complaints and information are categorised, prioritised and transferred to Watercare through the works orders system Enterprise Asset Management (EAM). Watercare and their reticulation and maintenance contractors record actions taken in EAM.

Short-Term Evaluation of Results

Watercare is committed to the short-term evaluation of results and ongoing review of operational monitoring, verification monitoring and inspection results. This enables the organisation to assess performance against regulatory requirements, identify emerging issues and trends, and prioritise improvements to drinking-water quality for customers.

The following tools are utilised by Watercare for the ongoing review and evaluation of results:

- Daily monitoring of continuous monitoring via SCADA.
- Working alongside the Customer team to monitor complaints.
- Daily, weekly, monthly, and annual water quality reports by Water Quality Scientist.
- Feedback from the management team.
- Review of the previous water quality incidents via the Incident Investigation Report process.

A review of previous water quality incidents for causes and the effectiveness of responses is part of the internal event investigation process. A link to the Event Investigation Report (EIR) template is listed in *Appendix 10*.

5. Improvement Plan

Preventive measures across Watercare's water treatment plants are based on a multi-barrier approach, engineering controls, and continuous improvement. Risks are continuously evaluated using the Water Supply Risk Tables, with improvements driven by performance reviews, emerging risks, and compliance requirements (see section *9: Oversight, Review and Continual Improvement*). These are detailed in *Appendix 11: Improvement Plan*.

Watercare staff regularly assess the effectiveness of existing measures and address residual risks by identifying and implementing improvements. These may involve enhancing current controls or introducing new ones, with clear responsibilities, timeframes, and actions defined.

Improvements identified during DWSP development or updates are managed through existing Watercare processes, including:

- Major capital projects planned through the *Asset Management Plan* (AMP), delivered by the Project Management team.

- Development or refinement of operational, maintenance, or contingency procedures by relevant functional teams.
- Mitigation works requiring minor capital or operational expenditures funded through various budgets and managed via established project processes.

All improvements are evaluated to ensure they are cost-effective and achieve the intended risk reduction. Each DWSP includes a supply-specific improvement plan outlining priorities, timeframes, responsibilities, interim risk mitigation actions, and cost-benefit assessments.

6. Management of Incidents and Emergencies

Watercare has a hierarchy of response plans for the management of incidents and emergencies:

1. Operational corrective actions set out in Critical Control Points process control summaries.
2. *Water Quality Incident Response Plan* (WQIRP) covering drinking water standards/ compliance responses (see *Appendix 12*).
3. *Incident Management Plan (IMP)*

Other incident response documents include the *Drought Management Plan* and *Cyanobacterial Operational and Contingency Plan* (*Appendix 13* and *Appendix 14*, respectively).

The IMP provides a generic process for managing threats to the water supply, irrespective of origin. This includes but is not limited to security breaches, water supply contamination, cyber security incidents, and pandemic events. It is based on the five principles of risk management: risk analysis, reduction, readiness, response and recovery. These principles form a cyclic process that enables Watercare to learn from incidents and implement measures to prevent or mitigate the effects of future incidents.

An Incident Controller and Incident Management Team (IMT) appropriate to the response required and the situational complexity are formed once a fault has been escalated to an incident. The Incident Controller is appointed based on the operational functional area to which the incident is related. They are responsible for managing the incident through to its resolution, including directing resources, coordinating facilities, and delegating tasks to team members to investigate causes and manage impacts. The Incident Management Team reflects Watercare's organisational structure during business hours; after hours resources are mobilised using on-call rostered personnel.

Incident levels are determined by the nature, complexity, and scale of the event:

- Level 1: Minor incidents with localised impacts on consumers and plant processes. These are managed through routine operations and promptly resolved.
- Level 2: More complex incidents that require coordination by senior Watercare management, due to broader impacts and the need for communications and specialist support.
- Level 3: Major incidents managed by the Executive Management Team. These have significant consequences, complex management, and often require multi-agency coordination. Triggers may include regional or national civil defence emergencies or extreme water service events.

The standard process for any event is:

Isolate Dependent on the nature of the event, it may be possible to isolate the cause

Minimise Reduce supply or affected area

Investigate An investigation of the cause of the problem would be undertaken by Operations staff, with technical assistance as required

Remedy Following diagnosis, the issue will be resolved and the process returned to normal

Notify Taumata Arowai would be notified and a communication plan for the customers implemented

Watercare follows the WQIRP for response to transgressions. The WQIRP provides guidelines for managing water quality incidents identified through compliance and operational monitoring. It has been prepared according to compliance rules and is utilised in conjunction with DWSPs and Watercare's IMP.

Watercare's IMP addresses water quality transgressions that are notified by exception reporting from the laboratory to the Water Quality Compliance and Science team. Each section outlines the relevant DWSNZ Maximum Acceptable Values (MAV), Aesthetic Values (AV) Guideline Values (GV), DWQAR, and Watercare's operational performance criteria. Triggers for escalating a response to the IMP are documented in the WQIRP.

Maintaining supply security during a drought is managed by the *Drought Management Plan* (DMP). The DMP has been developed for the IMT, which is responsible for the declaration and overall management of a drought. The DMP provides Watercare and WDC with a decision-making framework used for the management of water resources and demands during drought conditions. It is robust across various scenarios adaptable to specific drought conditions.

7. Documenting and Reporting

Management of Documentation and Records

The following document and records management systems are in place for the WDC supplies:

Table 11: Document and Record Management System

System	Purpose
Microsoft SharePoint	General records management
Enterprise Asset Manager	Asset management system used on all Council owned and operated three water's assets.
WaterOutlook	Compliance reporting, Routine operations and inspections records.
Tech One	WDC Customer Relationship Management software
ICare	Health and Safety Audit application
SCADA	Plant and network control system

Systems listed above have document control aspects built in through individual user accounts, traceability, document/record backup and recovery capability.

Reporting Requirements

Watercare undertakes regular reporting to meet compliance requirements and support continual improvement. Scheduled water quality reports are prepared daily, weekly, monthly, quarterly, or

annually, depending on the focus of the report and its intended audience. Customised reports can also be generated at any time. Event-based reports are prepared in response to transgressions or incidents and shared with senior management, Taumata Arowai, and the Medical Officer of Health.

Under the DWQAR, compliance monitoring results for Level 3 supplies are reported monthly, Level 2 quarterly, and Level 1 annually. Reporting against general and assurance rules are completed annually. Compliance data is transmitted via API from Water Outlook to Taumata Arowai's database, Hinekōrako.

Watercare Waikato's current Annual Drinking Water Report is available for viewing on the WDC website:

https://www.waikatodistrict.govt.nz/services-facilities/water/waters-plans-and-reports

The following internal reports are created to support the management and operations of the WDC water supplies:

Table 12: Internal Reports

Internal Reporting Type	Purpose
WaterOutlook compliance reports	Daily and monthly compliance reports
Business reporting	Monthly Operational reporting
Enterprise Management Reports	Complaints and work order summaries as required
Production, Networks and infrastructure Teams reports	Weekly and monthly reports
Event Investigation Reports	Debrief records as required
Drinking Water Safety Plan Assessment	Annual summary report for oversight, review and continual improvement

The following external reports are created to support the management and operations of the WDC water supplies:

Table 13: External Reports

External Reporting Type	Purpose
WaterOutlook compliance reports	Submitted to Taumata Arowai for compliance demonstration
Taumata Arowai Compliance reports (Water Outlook)	Monthly, quarterly and annual reports on drinking water compliance and Drinking Water Safety Planning
Business reporting	Operational reports to WDC. Water Governance Board Reporting
Waikato District Council Local Government Reporting	Annual KPI reports
Regional Council	Resource Consent annual compliance reports

8. Investigations

Watercare takes all events related to the quality or quantity of water supplied to its customers and the associated investigations seriously. During reactive investigations, staff follow procedures and protocols to:

- Understand why potentially unsatisfactory performance has occurred and implement corrective measures as appropriate; and
- Ensure that issues are resolved effectively.

Investigation procedures and protocols identify situations that may result in the need for an investigation. The WQIRP provides a detailed step-by-step process to follow in response to each type of water quality situation. This includes the criteria to determine when an investigation is needed; who has responsibility for the investigation; steps to take while it proceeds; and actions to be taken at its completion. A report containing investigation findings is completed for every water quality parameter breach incident.

Reactive investigations also inform planning and continuous improvement processes, identifying the need for future proactive investigations. Such investigations are initiated via the company's business need identification and project planning framework and enable Watercare to stay ahead of emerging issues and provide valuable ideas for the future suitable designs and best practice. Where the performance of equipment, processes or practices is susceptible to variation (e.g. seasonal source water quality change or filter media replacement), process performance is reviewed to ensure that:

- Barriers are operating to achieve their design objectives.
- Supporting process operation is optimised to minimise the risk to drinking-water quality.

'Acceptance to Service' reports refer to the process for initial validation and, where required, routine re-validation of equipment, processes, and practices. Relevant validation documents are referenced within the supply-specific DWSPs.

9. Oversight, Review and Continual Improvement

The prompts for the review of the Drinking Water Safety Plans are as follows:

a) Completion of a major upgrade which would change the risks associated with that supply
b) New issues are identified that would impact on the risks associated with that supply
c) Within 12 months
d) As required by the Water Services Act 2021

For (a) and (b), the scope review is limited to the area that experienced change. For (c), the entire DWSP is reviewed. For (d) the DWSP is submitted to Taumata Arowai.

A DWSP review is co-ordinated by the Water Quality Scientist together with the DWSP development team. Any changes that result from the review shall be formally submitted to the Document Controller for approval. Once approved, the document shall be updated and issued in accordance with the document control procedures described in 'Document Control' section of this document.

Formal reviews of DWSPs are submitted to Taumata Arowai.

Long-Term Evaluation of Results

Watercare and WDC are committed to the long-term evaluation of results and a systematic review of operational monitoring, verification monitoring and inspection results. This process supports performance assessment against regulatory requirements, helps identify emerging issues and trends, and informs priorities for improving drinking-water quality. The following tools are used to support this review process:

- SCADA and compliance platform data.
- Internal and external audits.
- Compliance Reports
- EIRs
- Watercare's Project Management Framework
- Watercare's Contracts Management Framework
- Regulatory assessments undertaken by Taumata Arowai

Watercare Waikato's water supply system is subject to quarterly and annual audits by various regulatory bodies, covering areas such as health and safety, contract management, and finance. These audits provide valuable insights into drinking-water quality management and operational performance, with a focus on compliance with the DWSNZ, DWQAR, and the Water Services Act, as well as DWSP implementation.

Watercare Waikato's senior leadership team regularly reviews consolidated system performance data to support strategic decision-making and continuous improvement.

Internal Audits

The DWSP internal audit process is consistent with WDC organisation-wide internal audit format.

WDC undertakes internal audits to ensure that the drinking-water quality management system is properly implemented and remains effective in ensuring drinking-water quality. Auditing is one of the key functions of the Water Contract Relationship team.

External Audits

External audits of water supply operations undertaken quarterly by Wai Comply Limited. Currently Audit NZ audits compliance with non-financial performance measures rules annually. Taumata Arowai

Review by Senior Leadership

A weekly meeting is held at Watercare's Hamilton office in which the overall system performance is reviewed and reported to the Waikato Operations Manager if required. Events, incidents and issues arising are discussed, and actions are agreed upon.

Water quality performance is reported by the Water Relationship Manager to the Water Governance Board at WDC. This reporting focuses on measures outlined in Watercare's operations and maintenance contract and includes district-wide reporting on water quality and quantity risks.

The Water Governance Board are also involved in the development and approval of funding cases to manage and maintain Watercare's commitment to the supply of safe drinking-water to Auckland and Waikato District communities. Here, decisions regarding operational and capital expenditure are made based on the risk to Watercare's Waikato water supply systems.

An annual report on the performance of drinking water safety and compliance is prepared by the Water Quality Scientist Waikato District. This report outlines compliance, major changes to water supplies, a summary of significant events or near misses, and a summary of planned improvement progress submitted to the Operations Manager Waikato District and changes made to DWSPs. Plans will be re-lodged with Taumata Arowai as soon as practicable if there have been any significant changes to supplies, operations and treatment processes, or risks.

Watercare is responsible for ensuring that any matters requiring attention will be appropriately included into the *Business Plan, Annual Plan* or the *Asset Management Plan for Water Supplies*. If significant capital funding is required, Watercare will include the matter into the Council approval process via the Water Governance Board and the Council Long Term Plan.

APPENDIX 1: COMMITMENT TO DRINKING WATER QUALITY (2025).

Outlines Watercare's commitment to providing safe, high-quality drinking water in accordance with the *Drinking Water Safety Plan Framework, Water Services Act 2021, Drinking Water Standards for New Zealand, Quality Assurance Rules*, and other regulatory and consumer requirements.
Available at: O:\Ops\Watercare Waikato\Water Safety Plans\1. DWSP General

APPENDIX 2: WDC COMMUNITY ENGAGEMENT STRATEGY

The framework for which WDC engages with communities, ensuring inclusive, transparent, and responsive communication to support safe and trusted drinking water services.
Available at: O:\Ops\Watercare Waikato\Water Safety Plans\1. DWSP General

APPENDIX 3: TRAINING MATRIX

Details the competency requirements and training records for personnel involved in the operation and management of WDC owned water supplies, supporting capability development and regulatory compliance.
Available at: O:\Ops\Watercare Waikato\!001 - HEALTH SAFETY AND WELLNESS\006 - TRAINING AND PPE\001 - Training Matrix and PPE Register

APPENDIX 4: SOURCE WATER RISK MANAGEMENT PLAN

Identifies and assesses risks to source water quality across WDC owned supplies, outlining mitigation strategies to protect public health and ensure compliance with regulatory requirements.
Available at: O:\Ops\Watercare Waikato\Water Safety Plans\1. DWSP General

APPENDIX 5: CATCHMENT RISK ASSESSMENTS

Identifies potential sources of contamination within the water supply catchment and assess risks to drinking water quality. Supports proactive risk management and informs mitigation strategies.
Available at: O:\Ops\Watercare Waikato\Water Safety Plans\Catchment Risk Assessment

APPENDIX 6: WATER SUPPLY RISK TABLES – ALL SUPPLIES

Summarises potential risks to drinking water quality for the WDC owned supplies, supporting control prioritisation and improvement planning.
Available at: O:\Ops\Watercare Waikato\Water Safety Plans\1. DWSP General

APPENDIX 7: CRITICAL CONTROL POINTS

Outlines key process barriers and monitoring points to manage drinking water quality risks with defined limits and response protocols to mitigate public health risks.
Available at: O:\Ops\Watercare Waikato\Water Safety Plans\1. DWSP General

APPENDIX 8: INCIDENT MANAGEMENT PLAN

Guides Watercare's response to incidents that may affect operational or strategic objectives, outlining roles and key actions to support effective management.
Available at: O:\Ops\Watercare Waikato\Water Safety Plans\1. DWSP General

APPENDIX 9: DISTRIBUTION NETWORK SAMPLING PLAN

Outlines WDC's distribution network compliance monitoring schedule, reviewed annually per DWQAR D3.18 and D3.28. Available at: O:\Ops\Watercare Waikato\Water Safety Plans\1. DWSP General

APPENDIX 10: EIR TEMPLATE

Available at: O:\Ops\Watercare Waikato\Water Safety Plans\1. DWSP General

APPENDIX 11: IMPROVEMENT PLAN (IMP)

Outlines identified opportunities for improvement across WDC-owned water supplies, including actions, timeframes, and responsibilities to enhance drinking water safety and system performance.
Available at: O:\Ops\Watercare Waikato\Water Safety Plans\1. DWSP General

APPENDIX 12: WATER QUALITY INCIDENT RESPONSE PLAN (WQIRP)

Provides guidelines for managing water quality incidents identified through compliance and operational monitoring. Prepared in line with the DWSNZ (2022) and DWQAR (2022) and used alongside DWSPs and Watercare's IMP. Available at: O:\Ops\Watercare Waikato\Water Safety Plans\1. DWSP General

APPENDIX 13: WATER DEMAND MANAGEMENT PLAN/DROUGHT MANAGEMENT PLAN

Summarises WDC's approach to managing water demand across its supplies, including business-as-usual practices and future improvement options. Includes drought response provisions outlining staged restrictions and actions. Available at: O:\Ops\Watercare Waikato\Water Safety Plans\1. DWSP General

APPENDIX 14: CYANOBACTERIAL OPERATIONAL AND CONTINGENCY PLAN (COCP)

Outlines procedures for monitoring, managing, and responding to cyanobacterial risks in source water, supporting proactive control and contingency planning across WDC-owned supplies.
Available at: O:\Ops\Operations Excellence\Water Quality Science\Resources and References\WSL Procedures\COCP

APPENDIX 15: STANDARD OPERATING PROCEDURES (SOPS)

Step-by-step instructions for routine tasks, maintenance activities, and incident response, ensuring compliance with regulatory requirements and best practice standards.
Available at: O:\Ops\Watercare Waikato\1. CONTROL of WORKS\CONTROL OF WORKS\SOPs\Production\Water

APPENDIX 16: COMPLIANCE OVERVIEW

Available at: O:\Ops\Watercare Waikato\Water Safety Plans\1. DWSP General

APPENDIX 17: SAMPLING SCHEDULE

Available at: O:\Ops\Watercare Waikato\3 Waters Quality Analyst Team\Water Quality Science-Waikato\Laboratory\Watercare Lab\Watercare Lab Schedule

APPENDIX 18: INTERNAL STAKEHOLDER LIST

Available at: O:\Ops\Watercare Waikato\Water Safety Plans\1. DWSP General

APPENDIX 19: WDC SOURCE WATER MONITORING PROGRAMME

Available at: O:\Ops\Watercare Waikato\Water Safety Plans\1. DWSP General