UrbanUtilities

DRINKING WATER SERVICE ANNUAL REPORT

2022-2023

TABLE OF CONTENTS

1. INTRODUCTION

This is Urban Utilities' Drinking Water Quality Management Plan Report for the financial year 2022-23 (FY23).

1.1 SERVICE PROVIDER DETAILS

Name	Central SEQ Distributor-Retailer Authority trading as Urban Utilities
Service Provider ID	521
Address	GPO Box 2765 Brisbane QLD 4001
Telephone	13 26 57 (8am to 5pm weekdays)
Website	www.urbanutilities.com.au
Local Government Areas	Brisbane City Council (BCC), Ipswich City Council (ICC), Lockyer Valley Regional Council (LVRC), Scenic Rim Regional Council (SRRC) and Somerset Regional Council (SRC).

This report serves as the drinking water service annual report for the purposing of meeting the requirements Section 142 of the *Water Supply (Safety and Reliability) Act 2008* ('Act') and contains the following:

- Reported drinking water quality and compliance data,
- Actions Urban Utilities took to implement the Drinking Water Quality Management Plan (DWQMP),
- DWQMP review outcomes,
- Any non-compliances and incidents under Sections 102 and 102A of the Act,
- Details of the provider's compliance with 'water quality criteria' for drinking water, and
- Details of any complaints to the provider about the provider's drinking water service.

As per the Act this report must be submitted to the regulator within 120 business days from the end of the financial year and for completeness should be read in conjunction with Appendix A.

The report aligns with the requirements of the reporting template published by the Regulator and addresses the reporting requirements under Section 142(3) of the Act (Table 1).

Table 1: Sections of report that address reporting requirement under Section 142(3) of the Act

Section Ref #	Legislative Requirement Under Section 142(3) Of The Act	Content Guide	Heading Of This Report
142(3)(a)	the information required under the latest report requirement given to the provider;	Required contents for the report	Part 1.
-	Overview of operations (optional)	Contextual information of the water supply schemes that this annual report relates to	Part 2.
142(3)(b)	Actions taken to implement the DWQMP	Description of activities undertaken during the reporting period to implement the DWQMP: • Pathway to zero water quality incident • Progress in implementing the risk management improvement program (RMIP)	Part 3.
142(3)(f)	Compliance with water quality criteria for drinking water	Verification monitoring results summary for the reporting period	Part 4. & (Appendix A)
142(3)(e)	Notifications to the Regulator under Sections 102 and 102A of the Act	Non-compliances with the water quality criteria including corrective and preventive actions undertaken Prescribed incidents or events reported to the Regulator and corrective and preventive actions undertaken	Part 5.
142(3)(g)	Customer complaints related to drinking water service	Summary of water quality complaints	Part 6.
142(3)(c)	Outcome of the DWQMP review and how issues raised have been addressed	Update to Information Notice dated 27 April 2022 Condition 7.10, provision of quarterly reporting.	Part 7.
142(3)(d)	Findings and recommendations of the DWQMP auditor	Not Applicable	
142(3)(h)	If the provider has reviewed a customer service standard during the financial year—the outcome of the review and how the provider has addressed matters raised in the review.	Not Applicable	

I.2 ACCESSING THIS REPORT

This report is available on Urban Utilities website: urbanutilities.com.au/publications

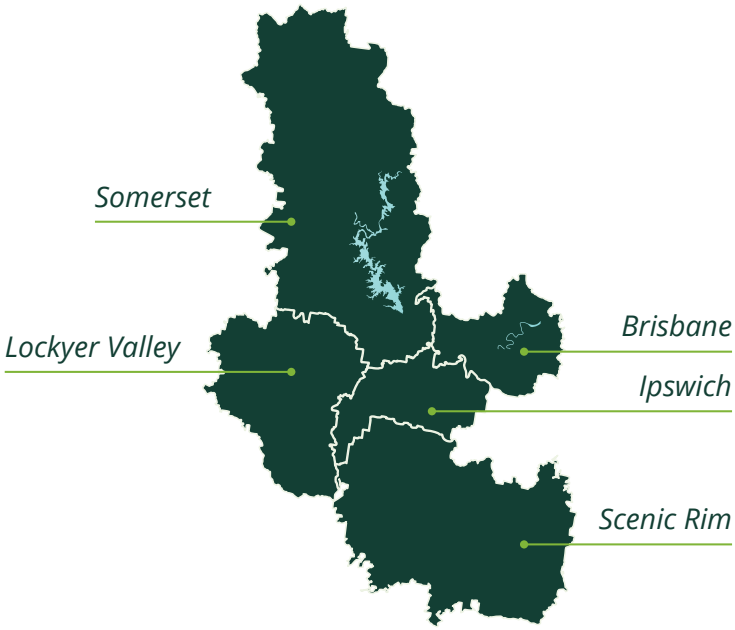
2. SUMMARY OF SCHEMES OPERATED

Urban Utilities provides drinking water services to 1.6 million people residing within a 14,384km^2 geographic area, which stretches from Cape Moreton in the east to the foot of the Toowoomba Range in the west, and from the Yabba State Forest in the north to the New South Wales border in the south.

Urban Utilities receives treated water from the bulk water supplier Seqwater. The Urban Utilities service area during the FY23 had 5 supply Local Government Areas (LGAs), which are then broken down into 12 schemes. These LGAs include:

- Brisbane City Council (BCC),
- Ipswich City Council (ICC),
- Lockyer Valley Regional Council (LVRC),
- Scenic Rim Regional Council (SRRC) and
- Somerset Regional Council (SRC).

Additional information including water quality and continuous improvement items can be located in the accompanying Annual Drinking Water Performance Report (Appendix A).



Urban Utilities South Bank Free Water Station

3. DWQMP IMPLEMENTATION

The Drinking Water Quality Management Plan (DWQMP) is central to how Urban Utilities provides customers with safe and clean drinking water.

Urban Utilities continuously improves and updates its DWQMP and Risk Management Improvement Program (RMIP) with the most recent version submitted to the Regulator in early 2022 and approved on 29 April 2022.

Further progressing the work commenced last financial year, throughout FY23 implementation of the DWQMP has been enhanced by continuing to apply Urban Utilities Pathway to Zero Water Quality Incident Roadmap and the approved Risk Management Improvement Program (RMIP).

3.1 PATHWAY TO ZERO WATER QUALITY INCIDENT ROADMAP

Urban utilities effectively manage the drinking water supply to provide safe drinking water that consistently meets the requirements of the *Water Supply (Safety and Reliability) Act 2008* (Qld) and the *Public Health Regulations 2018 (Qld) (the Act).*

Pathway to Zero Water Quality Incident Roadmap (Table 2) demonstrates Urban Utilities' developed actions plan enabling delivery of our core strategic vision of enhancing the liveability of our communities. The action plans implementation commenced in FY22 and requires effective planning and execution to successfully deliver the ultimate Pathway to Zero Water Quality incidents by FY26.

Additional information regarding the improvement actions implemented in FY23 in line with the roadmap is available in the Annul Drinking Water Quality Performance Report 2022-23 (Appendix A).

Table 2: Pathway to Zero Water Quality Incident Roadmap

Work Stream	FY23	FY24	FY25
Reservoir Integrity	Enhanced Reservoir Water Quality Plan (RWQP). Live Reservoir Risk Model.	Partnered Specialist Reservoir Inspectors. Maintenance assurance balanced with operational risk.	Reservoir inspections driven by asset health and performance.
	Implementation and continuous improvement of strategy (Operations and Maintenance (O&M) asset renewals, and business processes).	100% Detection of Organic Load Strategy.	
Disinfection Residual	Disinfection Strategy Implementation/Continuous Improvement.		pH stabilisation of monochloramine supply (Regional Secondary Disinfection Optimisation Project (RSDOP))
	Imbed intervention plans across speeds of operation.	Optimisation of interventions and risk appetite balancing water quality and supply.	
	Urban Utilities disinfection performance projects – Capital interventions / solutions (Chemical Dosing Unit (CDU), Reservoir inlet/outlets, Operational technology (OT) Internet of Things (IoT))		
Operational Monitoring	Food Safety International Standard (ISO22000) Framework Gap Analysis.	ISO22000 Project.	
	Assess options for operating "at risk or challenging" reservoirs and networks differently (operation and configuration changes).	Optimise operations of reservoirs and networks.	
	Endorsed Reservoir Operational Philosophy. Operating Protocols for Water Quality Outcomes. Improved data insights (Business Insights Reports). Improved protocol and process control.	Improved data insights (technology).	
	IoT Strategy Approval.	Enhanced Operational Intelligence and Continuous Improvement.	
Predicative Modelling	Optimised chloramine decay modeling.	Off-grid scheme decay models Integrate operational modeling.	Predictive modelling and OT verification.
Improve Supplied Water	Collaboration with Seqwater to ensure ongoing alignment between Seqwater operational and capital activities with customer water quality outcomes.		

3.2 RISK MANAGEMENT

Urban Utilities utilises its approved Risk Management Improvement Program (RMIP) to identify, track and control water quality risks related to the DWQMP and the provision of drinking water. It is a key tool to ensure the objectives of the DWQMP are tracked and implemented. Regular reviews of the RMIP are conducted to ensure it is communicated, implemented and effective at controlling water quality risks. Table 3 highlights improvements implemented during FY23 as part of the RMIP.

Table 3: RMIP actions undertaken

Core Theme	Number Of Risks	Actions Implemented
Disinfection	10	Develop protocol to inform decision for reservoirs & return to service RTS.
		VMP improvements to Lowood Scheme (THMs).
		Chlorate protocol development.
		Work on continuous improvement with active management across the business.
		Collaborated with key supply partner Seqwater to establish a new service level agreement to improve the reliability of bulk water quality.
Physical Integrity of Reservoirs	2	Define online analyser management maintenance strategy.
		Improved physical water quality control barriers through reservoir inspection, testing and maintenance water quality process conducted at 109 of our reservoir sites.
Network Planning	1	Continued focus on Integrated Zone Planning process to further ensure water quality is a mandatory criterion in our planning process.
		Follow up to ensure notification is received for power outages.
Cyber Security	2	Improved data backup technologies and cyber security controls for water quality equipment.

4. VERIFICATION MONITORING PROGRAM

The supply of safe drinking water is Urban Utilities' greatest public health responsibility.

A critical component of water quality management is verifying our product continues to meet the stringent standards articulated in the relevant legislation and regulations. We assure the quality of the drinking water supply through Drinking Water Quality Verification Monitoring Program (VMP). The VMP is a comprehensive program designed to maximise visibility of drinking water quality as it travels through the 9,642km of water mains that service our communities.

The VMP is routinely performed throughout the year and used to authenticate drinking water quality performance. Insights from the VMP inform the continuous improvement of our procedures and processes, and guides capital and operational investment decisions. The VMP alerts us to emergent changes or sudden occurrences which may impact the drinking water, allowing us to proactively manage the quality of the product we supply to our customers. The VMP provides us with confidence in managing drinking water quality and supports our commitment to maintain protection barriers and prevent contamination.

Urban Utilities' provides an annual summary of water quality performance to customers, available on the Urban Utilities website www.urbanutilities.com.au. The Annual Water Quality Performance Report 2022-23 (Appendix A) meets the requirements for the water quality performance aspect of this document. Please note that the reported statistics do not include results derived from repeat samples, from emergency or investigative samples.

The Annual Water Quality Performance Report 2022-23 includes a summary of the verification monitoring results. Key points include:

ACHIEVED COMPLIANCE WITH THE PUBLIC HEALTH REGULATION 2018[1] E.COLI PARAMETER.

ACHIEVED COMPLIANCE[2] WITH THE AUSTRALIAN DRINKING WATER GUIDELINES[3] CHEMICAL-RELATED PARAMETERS[4].

[1] *Public Health Regulation 2018 Part 9 Division 2 Section 52 Quality Standard for Drinking Water (4)(b)*

[2] *Australian Drinking Water Guidelines 2011 (September 2022 Revision) Information Sheet 3.2*

[3] *Australian Drinking Water Guidelines 2011 (September 2022 Revision) Chapter 10 Table 10.6*

[4] *Public Health Regulation 2018 Part 9 Division 2 Section 52 Quality Standard for Drinking Water (5)*

5. NOTIFICATIONS REPORTED TO THE REGULATOR

Under Sections 102 and 102A of the Act, Urban Utilities is required to immediately give notice to the Regulator where service provider becomes aware of a non-compliance with a water quality criteria, where the service provider becomes aware of a prescribed incident or event.

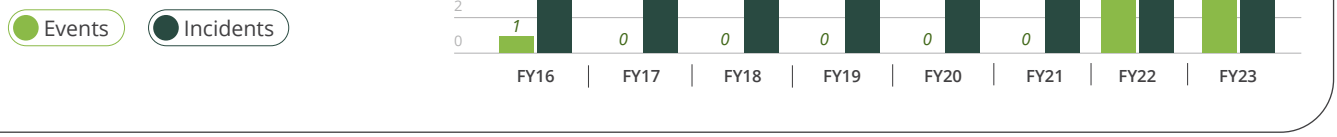
Water quality incidents and events represent the number of times a notification was supplied to the Regulator regarding an incident or event that Urban Utilities believe met the requirements stated under the Act.

In 2022-23, Urban Utilities took over 12,100 water quality samples and conducted over 123,800 water quality tests. Of those samples, six tests did not meet the requirements of the ADWG requiring us to report these as incidents to the Regulator, two test did not meet the requirements of recently issued (received 6 May 2022) Queensland Health Chlorate Position Statement, two taste and odour events were recorded resulting from local network projects via customer enquiry monitoring and an additional event related to the inability to sample non-priority locations for a fourteen-day period as described in the DWQMP had also been notified to the regulator.

Each year, Urban Utilities set itself stretch targets to ensure continuous improvements in operational excellence and the ongoing safety of the drinking water supply. Although we did not achieve our FY23 target, Urban Utilities remained 100% compliant with regulatory obligations for drinking water quality and continued to guarantee the ongoing provision of safe drinking water, the quality of which is world class (see Figure 1).

Figure 1: Notifications to the Regulator FY16 to FY23[5]

Of the 11 notifications, 6 were classified as incidents[6] and 5 events[7] as provided below in Figure 2. The specifics of each incident and event are provided in Figures 3, 4 and Table 4.



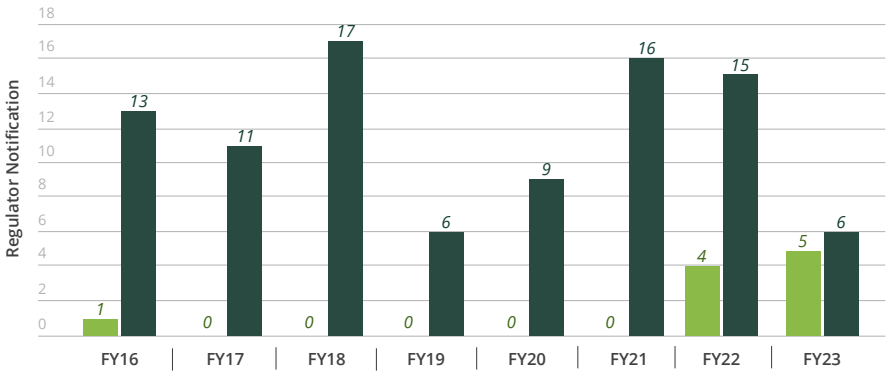


Figure 2: Urban Utilities Incident Notifications breakdown

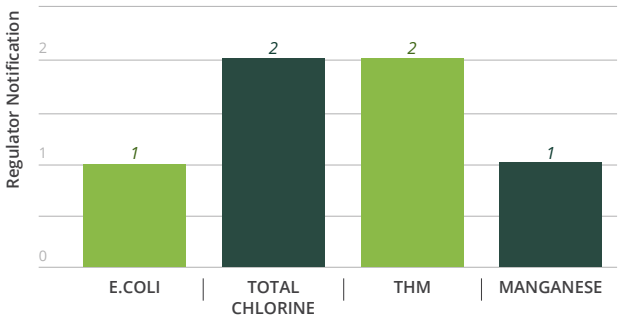
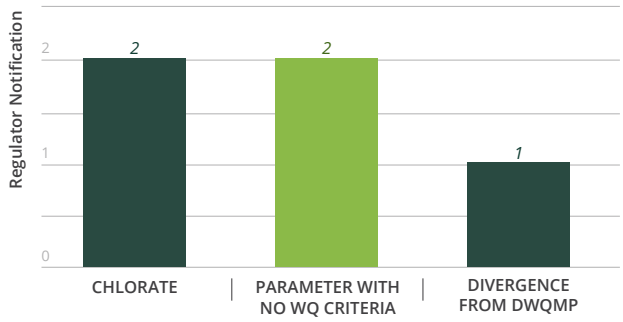


Figure 3: Urban Utilities Event Notification breakdown



[5] *Event classification changed in April 2022 with the latest DWQMP review notice*

[6] *Incidence is defined as any detection of Escherichia coli (E. coli) or exceedance of an ADWG health guideline value.*

[7] ***'an event'** is anything relevant to the drinking water approval that has happened or is likely to imminently happen which you cannot managed under the approved DWQMP and/or which may adversely impact public health.*

Table 4 provides detail regarding each regulator notification, the initial corrective action and investigation outcomes with further actions.

Table 4: Notifications to the Regulator –1 July 2022 – 30 June 2023

Sample Date	Type	Location/ Supply Scheme	Description	Immediate corrective action	Investigation outcomes and further actions
08/11/2022	Incident - Chlorine exceeding ADWG	Ripley HLZ / SEQWSS	The non-compliance was a detection of 8.2mg/L chlorine in the Ripley high level supply zone.	The upstream chlorine dosing unit was isolated and tagged out. The network was flushed with concurrent field testing.	The chlorine dosing unit control logic has been improved to control risk of overdose.
08/12/2022	Event – Notification of taste and odour drinking water event	Indooroopilly / SEQWSS	Localised customer contacts describing petrochemical taste and odour during works.	An offline section of drinking water main opened during works was isolated by air gap. The network was flushed with concurrent field testing.	The cause of the event was due to the incorrect operation of a high-risk valve. Improvements to processes for undertaking complex network shut plans.
17/12/2022	Event – Notification of taste and odour drinking water event	Eastern Heights / SEQWSS	Localised customer contacts describing plastic taste and odour during works.	An offline reservoir recently returned to service was immediately re-isolated. The network was flushed with concurrent field testing.	Process improvements to operational readiness and return to service activities to mitigate aesthetic risks of new and refurbished assets.
8/02/2023	Incident – E. coli exceeding ADWG	Murphy's Creek / Lowood	The non-compliance was a detection of E. coli from a routine sample. 1MPN E. coli organisms per 100mL was detected. Follow up samples exhibited no continued presence of E. coli.	The sample collected exhibited less than 0.1mg/L chlorine at the time of sampling. The reservoir was isolated from supply. Responsive samples were taken in the downstream supply zone.	The cause of the incident could not be determined. The reservoir was returned to service after thorough inspections confirmed confidence in the asset condition.
9/02/2023	Incident - THMs exceeding ADWG	Beaudesert	The non-compliance was the detection of 260ug/L THMs from a routine sample.	The network was flushed, and responsive samples taken from the relevant sample points across the supply scheme. Ongoing water age management was implemented.	Beaudesert supply scheme will see improvement to treated water THMs over FY24. Improvements to THM management practices have been made for the interim period.
13/02/2023	Event - Detection of parameter without ADWG guideline value (chlorate)	Warrill View / SEQWSS	The event was the detection of 1.0mg/L chlorate from routine sample in the Warrill View supply zone.	The upstream chlorine dosing unit tank was emptied and refilled with fresh sodium hypochlorite. The network was flushed with concurrent field testing.	Improvements have been made to sodium hypochlorite management.
23/03/2023	Incident - THMs exceeding ADWG	Murphy's Creek / Lowood	The non-compliance was the detection of 260ug/L THMs from a routine sample.	An offline reservoir recently returned to service was immediately emptied and refilled. The network was flushed with concurrent field testing. Increased THM monitoring frequency was enacted.	Process improvements to return to service activities to control water quality risks of new and refurbished assets.
14/04/2023	Incident - Manganese exceeding ADWG	Springfield Lakes / SEQWSS	The non-compliance was the detection of 1.2mg/L Manganese from a routine sample.	The network was flushed with concurrent field testing.	The sample collection procedure has been reviewed for end-of-line sample points.
5/05/2023	Event - Detection of parameter without ADWG guideline value (chlorate)	Ripley HLZ / SEQWSS	The event was the detection of 1.2mg/L chlorate from routine sample in the Ripley high level supply zone.	The upstream chlorine dosing unit was isolated and tagged out. The network was flushed with concurrent field testing.	Improvements to sodium hypochlorite supply chain and operating protocols.
29/05/2023	Event – Divergence from prescribed monitoring program	System Wide	Laboratory services unable to meet prescribed monitoring requirement for 14-day period. Minimum prescribed sample frequency for E.coli in the Public Health Regulation 2018 continued to be far exceeded.	Monitoring plan contingency plan enacted.	Updating the DWQMP to include the monitoring contingency plan to manage future responses.
26/06/2023	Incident - Chlorine exceeding ADWG	The Summit / SEQWSS	The non-compliance was a detection of 5.3mg/L chlorine in The Summit supply zone.	The upstream chlorine dosing unit dose set point was lowered and maintenance undertaken. The network was flushed with concurrent field testing.	The upstream chlorine dosing unit was calibrated prior to the event. The calibration methodology for this unit requires improvement.

6. CUSTOMER SATISFACTION

Urban Utilities recognises the value of community engagement in building trust in its brand, and the delivery of service excellence.

We recognise that customers or members of the community may need to provide feedback if a service or product fails to meet their expectations or our standards. This feedback is captured, recorded, and monitored to help identify any trends and possible areas of improvement in the operation, maintenance, and management of our drinking water network. This commitment is a key component of our continued pursuit of innovative ways of working.

While various water quality enquiries are received throughout the year, a 'water quality complaint' is registered when a person contacts us and expresses dissatisfaction regarding the quality of our drinking water. Complaint categories are shown in Table 5.

Table 5: Water quality complaint categories

Water quality complaint category	Commentary
Dirty Water	These complaints typically followed maintenance activity on the water distribution network.
Cloudy Water	Water that is milky or cloudy and odourless is caused by fine air bubbles. Milky water is usually caused by maintenance work on the water network, such as a service shutdown during pipe repair. The issue should disappear within a couple of days after the maintenance is completed.
Taste/ odour	Taste and odour complaints can vary widely based on the customer's perception. These were addressed by flushing the water main when required. The most common taste and odour complaint descriptions included chlorine, metallic and chemical tastes.
Health Concern	All calls received from customers who suspect their drinking water may be associated with a health concern they are experiencing are classified as complaints.
Other	This classification captures complaints that do not fall within the standard Urban Utilities' categories.

6.1 WATER QUALITY COMPLAINTS PERFORMANCE 2022-23

In FY23, Urban Utilities received 975 water quality requests and 367 water quality complaints. Requests and complaints are classified and report water quality complaints to align with the Australian /International Standard ISO 10002:2018 Customer satisfaction – guidelines for complaints handling in organizations, and consistency with other water utilities. The breakdown of water quality complaints performance is categorised by type (Figure 4) and region (Figure 5).

This year, Urban Utilities saw an increase in the total number of customer complaints, but the overall water quality complaints standard for the reporting period was met.

While water quality performance has improving across the service area, there was a localised water quality event at Eastern Heights, Ipswich, in December 2022 that cause significant community concern. Though during this event the public health requirements as set out by the ADWG where met, the taste and odour of the water did not meet the community's expectation.

We are striving to continuously learn and improve, and this event provided several valuable lessons, including how we can safely and efficiently bring our infrastructure back online, and how we can effectively communicate with various stakeholders.

Further to this, Table 6 shows Urban Utilities' performance against the Customer Service Standards as published in the Residential and Business Customer Charters. Our Charters outline the commitments, responsibilities, and standards that our customers can expect from us in relation to the water we provide. The water quality complaints result for FY23 translates to 0.55 complaints per 1,000 properties connected, well under the current customer service standard.

Figure 4: Water quality complaints by type

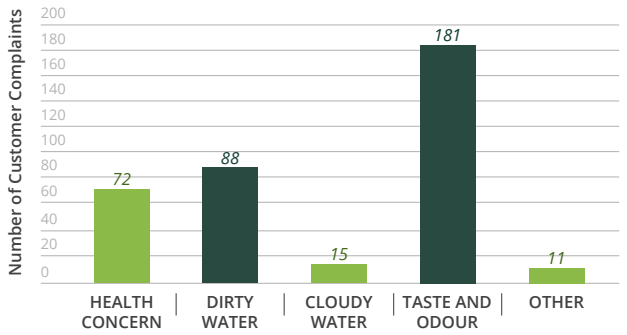


Figure 5: Water quality complaints by service area

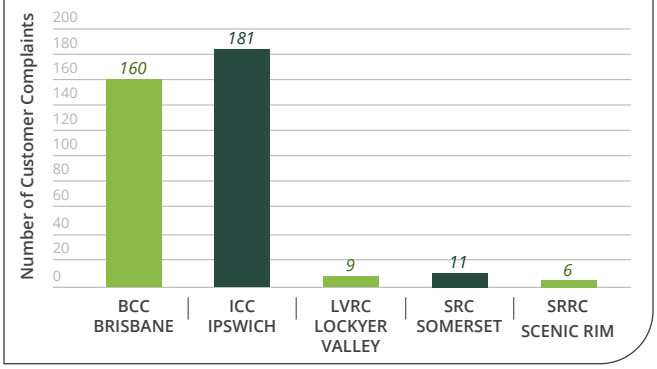


Table 6: Customer water quality complaints by region 1 July 2022 – 30 June 2023

Region	Health Concern	Dirty Water	Cloudy Water	Taste And Odour	Other	Total Complaints	Requests	Customer Property Count	Complaints/ 1000 Properties
BCC Brisbane	35	66	11	43	5	160	662	546,796	0.29
ICC Ipswich	29	19	3	128	2	181	264	88,649	2.04
LVRC Lockyer Valley	3	-	-	4	2	9	17	12,025	0.75
SRC Somerset	3	2	1	4	1	11	19	7,960	1.38
SRRC Scenic Rim	2	1	-	2	1	6	13	8,354	0.72
Total	**72**	**88**	**15**	**181**	**11**	**367**	**975**	**663,784**	**0.55**

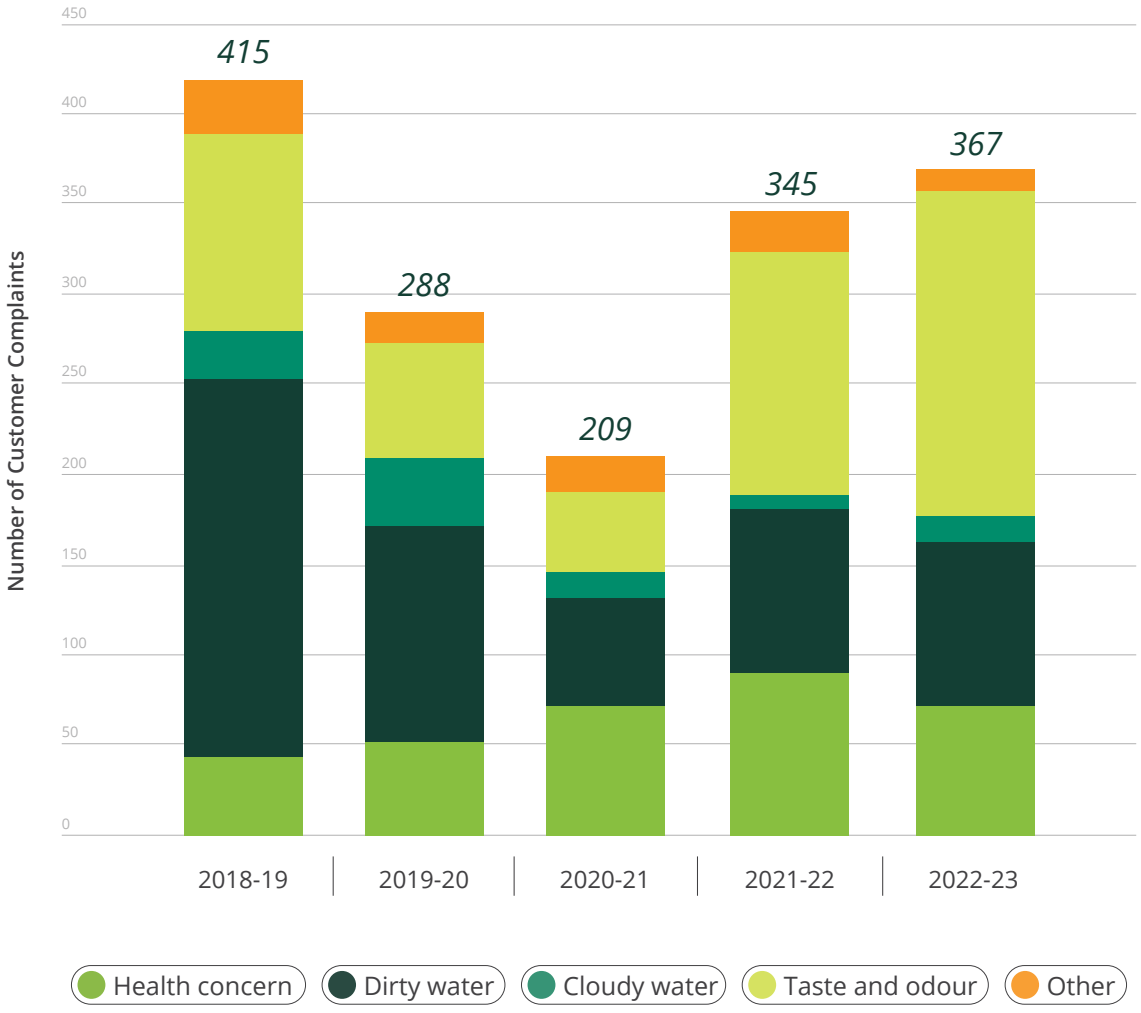
6.I WATER QUALITY COMPLAINTS PERFORMANCE 2022-23 (CONT'D)

Water Quality Officers investigated each complaint related to health concern from the drinking water supply by testing at the customer's tap and/or at selected points in the water distribution system close to the customer's property.

Data reviewed and reported back to the customer with findings.

Urban Utilities has contacts-based trigger for managing emerging local issues, when we receive greater than 15 requests for service of a similar nature in a local area, we enact our emergency management protocols.

Figure 6: Total water quality complaints by type-Financial year comparison



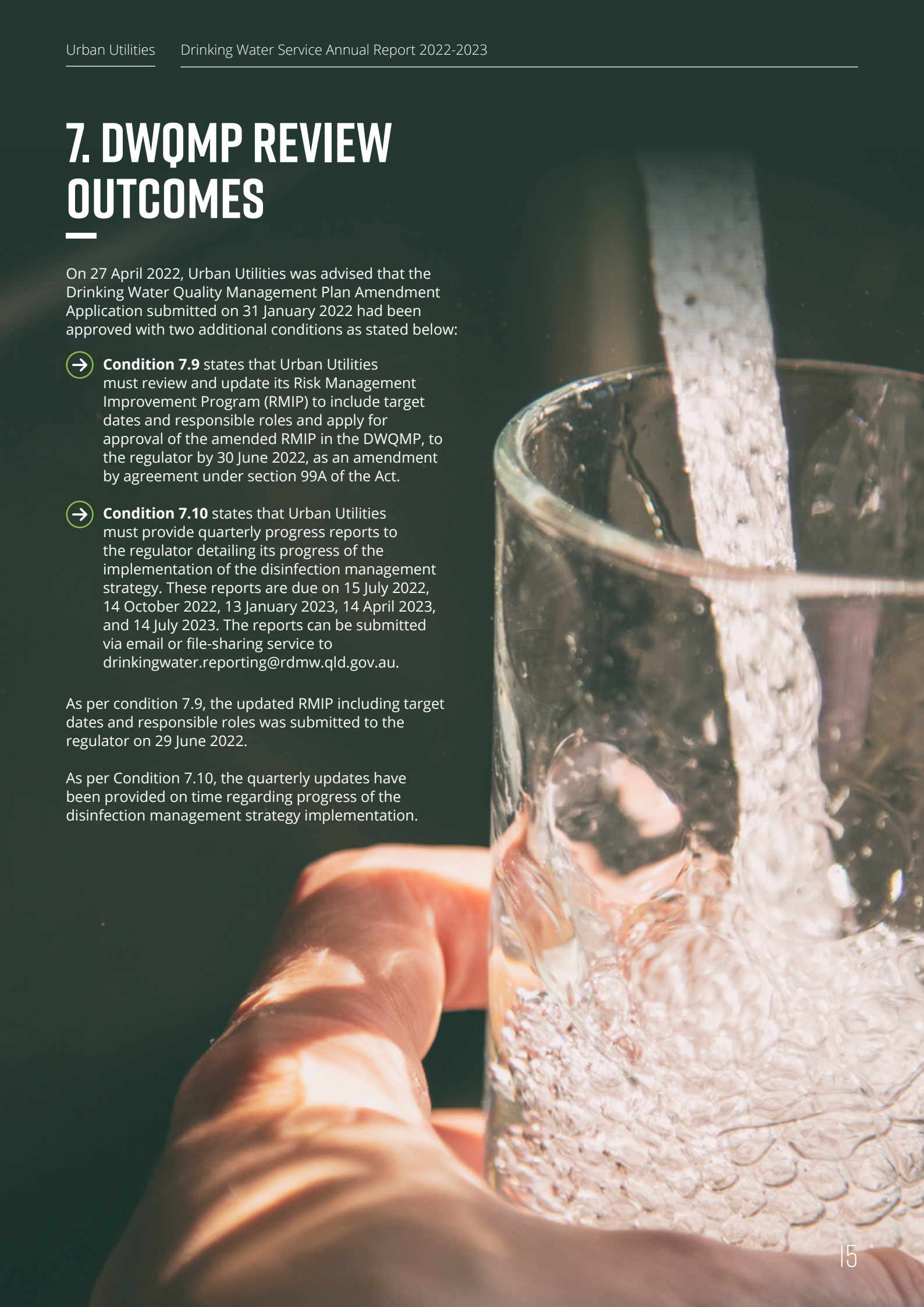
7. DWQMP REVIEW OUTCOMES

On 27 April 2022, Urban Utilities was advised that the Drinking Water Quality Management Plan Amendment Application submitted on 31 January 2022 had been approved with two additional conditions as stated below:

- **Condition 7.9** states that Urban Utilities must review and update its Risk Management Improvement Program (RMIP) to include target dates and responsible roles and apply for approval of the amended RMIP in the DWQMP, to the regulator by 30 June 2022, as an amendment by agreement under section 99A of the Act.
- **Condition 7.10** states that Urban Utilities must provide quarterly progress reports to the regulator detailing its progress of the implementation of the disinfection management strategy. These reports are due on 15 July 2022, 14 October 2022, 13 January 2023, 14 April 2023, and 14 July 2023. The reports can be submitted via email or file-sharing service to drinkingwater.reporting@rdmw.qld.gov.au.

As per condition 7.9, the updated RMIP including target dates and responsible roles was submitted to the regulator on 29 June 2022.

As per Condition 7.10, the quarterly updates have been provided on time regarding progress of the disinfection management strategy implementation.



8. GLOSSARY

<	Less than.
>	Greater than.
2-Methyl isoborneol	A compound produced from algae or bacteria in catchments contributing to taste and odour of water typically described as earthy, musty, swampy or metallic. May become noticeable at greater than 5ng/L.
Aluminium (Al)	A metallic element of some coagulants used for coagulation during drinking water treatment.
Ammonia (NH_3)	A highly soluble compound resulting from the decomposition of organic matter containing nitrogen. Ammonia will be detected in chloraminated water as it is a component of chloramine.
Australian Drinking Water Guidelines 2011 (ADWG)	The guidelines were developed by the National Health and Medical Research Council (NHMRC) and undergo rolling revision to ensure they represent the latest scientific evidence on good quality drinking water.
BCC	Brisbane City Council.
Bulk water	The treated water supplied from the Queensland Bulk Water Authority (Seqwater) to distributor retailers, including Urban Utilities.
CDU	Chemical Dosing Unit.
Chloramination / chloramine	The application of chlorine and ammonia to create monochloramine (NH2Cl), a stable disinfectant that is added to drinking water to inactivate bacteria or to oxidise undesirable compounds. Chloramines persist for a longer time than chlorine and as a result, are used in longer water distribution systems.
Chlorate	A compound resulting from the breakdown of sodium hypochlorite.
Chlorine – Free	The residual formed with chlorine dosage once all the chlorine demand has been satisfied. This chlorine is free to inactivate microorganisms.
Chlorine – Total	Total chlorine is the sum of combined and free chlorine including chloramine.
CFU/mL	Colony Forming Units per 1 millilitre.
Colour (True)	Colour is mainly due to the presence of dissolved substances from organic matter in water, such as decaying leaves and vegetation. True colour refers to the colour of water after particles of organic matter have been removed through filtration and is the measurement of the extent to which light is absorbed by the water.
Department of Regional Development, Manufacturing and Water	The Queensland Government department responsible for overseeing Queensland's water industries to ensure these essential services are provided to Queenslanders in a safe, efficient and reliable way.

Dichloroacetic acid	Dichloroacetic acid is a disinfection by-product as a consequence of the reaction of chlorine with natural organic matter and bromide ions in the raw water supply.
Disinfectant	An agent that inactivates microorganisms which cause disease. Urban Utilities uses either chlorine or chloramine.
Disinfection by-products (DBPs)	A group of by-products that may form under certain conditions when chlorine is used to disinfect drinking water.
Drinking water	Water that is suitable for human consumption.
Drinking Water Quality Management Plan (DWQMP).	Drinking Water Quality Management Plan as required by the Water Supply (Safety and Reliability) Act 2008 (Qld). The purpose of a DWQMP is to protect public health by implementing a risk-management system to manage the quality of drinking water.
Drinking Water Quality Management System (DWQMS)	Urban Utilities' DWQMS is used to ensure our drinking water supplies are managed effectively to provide high quality drinking water and to ensure the protection of public health.
Escherichia coli (E. coli)	A bacterium when present in water indicates that the water may be contaminated by faecal matter and therefore there is the potential to cause illness when people drink the water. E. coli can be killed by standard disinfection practices.
Fluoride (F)	Fluoride is regarded as a useful constituent of drinking water, particularly for the prevention of tooth decay. Concentration is maintained within the recommended levels set by Queensland Health.
Geosmin	A compound produced from algae or bacteria in catchments contributing to taste and odour of water typically described as earthy, musty, swampy or metallic. May become noticeable at greater than 5ng/L.
Haloacetic acids	A group of disinfectant by products that are formed when disinfectants, such as chlorine or chloramine, are used to treat water and react with naturally occurring organic and inorganic matter present in source waters.
ICC	Ipswich City Council.
IoT	Internet of Things.
Iron (Fe)	An element which, when found in water, can cause a brownish discolouration. Limits on the amount of iron in water are usually due to taste and appearance factors rather than any detrimental health effects.
ISO22000	Voluntary food safety management standard.
km	A kilometre, which is 1,000 metres.
LVRC	Lockyer Valley Regional Council.
Manganese (Mn)	Manganese in a water supply may affect taste, cause staining of clothes, produce deposits in pipes and contribute to turbidity.
Megalitre (ML)	One million litres or 1,000 kilolitres.

Monochloroacetic acid	One of the groups of five haloacetic acids is formed when chlorine is used to treat drinking water.
mg/L	Milligrams per litre.
MPN/100mL	Most Probable Number per 100 millilitres.
Naturally occurring	Present in the natural environment as minerals, elements, salts and other substances.
ng/L	Nanograms per litre.
Network	A system of pipes, pumps and reservoirs used for distributing water.
Nephelometric Turbidity Unit (NTU)	A measure of turbidity which is the cloudiness or haziness of water caused by suspended matter that are generally invisible to the naked eye.
Nitrate (NO_3)	The most stable form of combined nitrogen in water. Present in surface waters in small amounts generally not removed through treatment. Nitrate can be found in chloraminated water supplies as a result of chloramine breakdown.
O&M	Operations & Maintenance.
OT	Operational Technology.
pH	The pH value indicates if a substance is acidic, neutral or alkaline. It is calculated from the number of hydrogen ions present and is measured on a scale from 0 to 14. A pH greater than seven is alkaline, less than seven is acidic and seven is neutral.
Reservoir	A water tower or tank used for the storage of treated water within the water distribution system.
RMIP	Risk Management Improvement Program.
RWQP	Reservoir Water Quality Plan.
SAS Lab	Scientific Analytical Services Laboratory, Urban Utilities internal laboratory.
Scheme	The drinking water system distributing drinking water to customers.
Seqwater	Queensland Bulk Water Supply Authority, trading as Seqwater. The bulk drinking water provider for Urban Utilities.
Shareholders	Brisbane and Ipswich City Councils, and the Lockyer Valley, Scenic Rim and Somerset Regional Councils.
SRRC	Scenic Rim Regional Council.
SRC	Somerset Regional Council.

Stakeholder	All those who are either affected by or who can affect the activities of an organisation, namely customers, governments, regulators, the media, non-government organisations, local residents and employees.
The Regulator	See Department of Regional Development, Manufacturing and Water.
Total Dissolved Salts (TDS)	A measure of inorganic salts that are dissolved in water. Usually determined by converting electrical conductivity to TDS values.
Total Hardness	Total hardness is the sum of the concentrations of calcium and magnesium ions expressed as calcium carbonate (CaCO3) equivalent. Waters with a high mineral content (a total hardness in excess of 200 mg/L) are considered hard.
Total Trihalomethanes (tTHMs)	A group of disinfection by-products that generally form when chlorine is used to disinfect drinking water.
Trichloroacetic acid	One of the groups of haloacetic acids formed when chlorine or other disinfectants are used to treat drinking water.
Turbidity	Refers to the presence of suspended matter in water causing a cloudiness or haziness appearance. Turbidity is measured in Nephelometric Turbidity Units (NTU).
ug/L	Micro-grams per litre.
Urban Utilities	Trading Name of Central SEQ Distributor-Retailer Authority
Verification Monitoring Program (VMP)	Water quality verification monitoring is used as the final check that the barriers and preventive measures used in protecting the public health from drinking water risks are performing effectively. Verification monitoring is used to verify the quality of drinking water supplied to Urban Utilities' customers as well as collecting data to complement future operational monitoring programs.
Water Treatment Plant (WTP)	A plant that improves water quality by removing impurities through filtration and disinfection.
WQ	Water Quality.

APPENDIX A – ANNUAL DRINKING WATER QUALITY PERFORMANCE REPORT 22-23

This report is available on our website: urbanutilities.com.au/publications

URBANUTILITIES.COM.AU
OR CALL 13 26 57

GPO Box 2765
Brisbane QLD 4001

ABN 86 673 835 011

UrbanUtilities