UrbanUtilities

2020/21 DRINKING WATER QUALITY MANAGEMENT PLAN REPORT


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OUR PURPOSE

Enrich quality of life.

OUR VISION

We play a valued role in enhancing the liveability of our communities.

OUR VALUES

Participation
Activate. Collaborate. Accelerate.

Customers and Community
Listen. Understand. Respond.

Accountability
See it. Own it. Solve it.

Safety
Everyone. Everywhere. Every day.

Deliver Value
Define it. Create it. Deliver it.

Creativity
Initiate. Create. Inspire.

WELCOME

We are pleased to present Urban Utilities' *Drinking Water Quality Management Plan Report* for 2020/21.

The report showcases our operational performance with respect to drinking water quality and shows how we have been implementing key improvement actions detailed in our *Drinking Water Quality Management Plan* (DWQMP).

This report informs the Department of Regional Development, Manufacturing and Water (the Regulator) on how we complied with our DWQMP and its approval conditions. It also allows us to meet our compliance obligations under the *Water Supply (Safety and Reliability) Act 2008*.

This report also provides our customers with information about the quality of their drinking water.

READERSHIP

The report is intended to provide important information to a broad range of stakeholders including our customers, current and future employees, our shareholders, government departments and agencies, non-government organisations, and our partners.

ACCESSING THIS REPORT

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

INTERPRETER SERVICE STATEMENT

We are committed to providing accessible services to our customers and stakeholders from culturally and linguistically diverse backgrounds. If you have difficulty in understanding this report, please contact us on 13 14 50 and we will arrange an interpreter to communicate the report to you effectively.

当您需要口译员时，请致电 13 14 50。

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Level 2, 15 Green Square Close
Fortitude Valley QLD 4006
(Monday to Friday 8.00am – 5.00pm)

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13 26 57 (8am – 6pm weekdays)

Email us at:
customerservice@urbanutilities.com.au

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ACKNOWLEDGEMENT

We acknowledge the Traditional Owners of the lands on which we operate and recognise their continuing connection to the land, waters and community. We pay our respects to them and their cultures, and to elders both past and present.

CONTENTS

2020/21 IN REVIEW

134,456ML of drinking water delivered through **9,665KM** of water mains

38,090ML of drinking water delivered to **37,344** non-residential properties

117 drinking water reservoirs
63 water pump stations
87 water boosters

96,366ML of drinking water delivered to **620,939** residential properties

116,293 water quality tests conducted (includes samples for health-related compliance)
(see page 18)

16 incident notifications
Of the **116,293** water quality tests, **16** sample results required reporting to the Regulator (see page 20)

Drinking water quality performance

Achieved 100% compliance with the *Australian Drinking Water Guidelines* health-related parameters.

Achieved 100% compliance with the *Australian Drinking Water Guidelines* chemical-related parameters.

Achieved 100% compliance with the *Australian Drinking Water Guidelines* aesthetic-related parameters.

(see page 18)

We successfully completed the second audit of our *Drinking Water Quality Management Plan* and met all legislative requirements

(see page 38)


Urban Utilities

CHAPTER 1: ABOUT US

WHO WE ARE

Urban Utilities is a statutory body under the *South East Queensland Water (Distribution and Retail Restructuring) Act 2009* (Qld), and as a service provider (SPID 521) under the *Water Supply (Safety and Reliability) Act 2008* (Qld). Our shareholders are the councils of Brisbane, Ipswich, Lockyer Valley, Scenic Rim, and Somerset, and we are governed by an independent Board.

WHAT WE DO

We are responsible for delivering drinking water, recycled water and sewerage services to 1.5 million customers in South East Queensland. Our 14,384km^2 geographic area is made up of the five local government areas of our shareholders and equates to around two-thirds of South East Queensland. We operate in a unique environment where we serve the same customers and communities as our shareholders.

We provide our drinking water service through the management of an extensive water distribution system, including:

- 9,665km of potable water pipeline,
- 150 water pump stations & boosters, and
- 117 drinking water reservoirs.

OUR STRATEGIC DIRECTION

Our purpose

Enrich quality of life.

Our vision

We play a valued role in enhancing the liveability of our communities.

Our strategic statement

Our strategic direction is underpinned by our commitment to customer-centricity; every decision we make is considered through the lens of the customer.

As we build on our solid foundations and our constructive culture, we will pursue growth through the development of partnerships that deliver environmental, economic and social benefits.

These outcomes will be valued by our customers, communities and shareholders, and enhance the health, affordability and amenity of our region.

Our strategic goals

Our strategic goals outline where we will focus our efforts to achieve our purpose and vision.

CONSTRUCTIVE CULTURE

We inspire, create and sustain a constructive culture to deliver high performance.

FOUNDATIONAL SUCCESS

We know our business, we know our customers and we deliver value for both.

ENVIRONMENTAL LEADERSHIP

We protect and enhance our environment for current and future generations through excellence in water cycle management.

SOCIAL & ECONOMIC VALUE

We advance the wellbeing and prosperity of society by leveraging our unique capabilities.

OUR STAKEHOLDERS

As a water and sewerage service provider, the important work we do has the ability to, directly and indirectly, impact a wide range of external stakeholders. Equally, external activities such as policy changes, elections or local planning decisions can influence our activities and the way we work. Our key partners in the South East Queensland water and sewerage industry are shown in Figure 1.

Figure 1: Our stakeholders

CHAPTER 2: DELIVERING WATER TO OUR CUSTOMERS

We provide drinking water services to 1.5 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.

Seqwater, the State Government bulk water supply authority, supplies water from the dams, weirs and water treatment plants that it manages. Urban Utilities then distributes this treated water to your property via an extensive network of reservoirs, pumps and pipes, across 12 water supply schemes. See Figure 2.

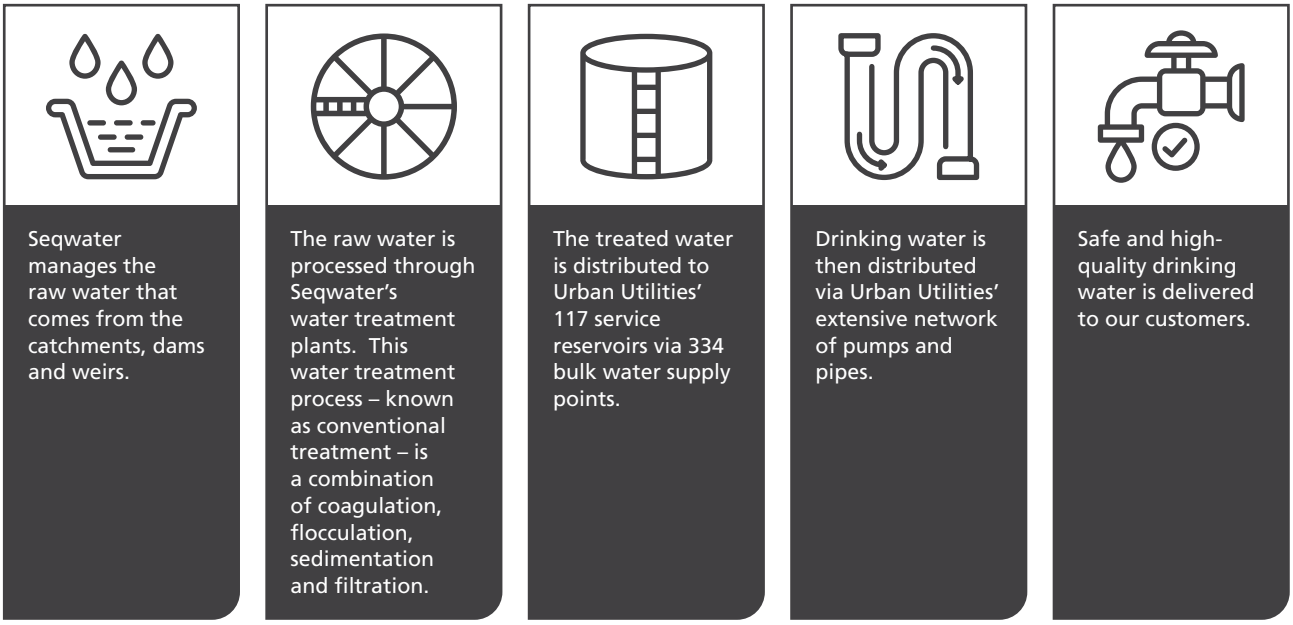


Figure 2: Catchment to consumer – delivering safe drinking water to our customers

Our 12 drinking water supply schemes are the distribution systems within the five local government boundaries of Urban Utilities' shareholders. Each scheme begins at the bulk supply points owned by Seqwater and ends at the customer's meter.

1. Beaudesert
2. Boonah – Kalbar also servicing localities extending out to Mt Alford and Aratula
3. Canungra
4. Esk – Toogoolawah
5. Jimna
6. Kilcoy
7. Kooralbyn
8. Linville
9. Lowood – servicing townships in the Lockyer Valley and Somerset regions of Tarampa, Minden, Prenzlau, Coolana, Lowood, Vernor and Fernvale.
10. Rathdowney
11. Somerset Township
12. South East Queensland (Brisbane and Ipswich) Water Supply System (SEQWSS) including the Scenic Rim townships of Harrisville, Peak Crossing and Warrill View.

Figure 3 shows the location of our water supply schemes across the local government areas (see page 15).

The SEQWSS makes up around 89% of the total water supply network, with schemes in the Lockyer Valley, Scenic Rim and Somerset making up the remaining 11%.

CHAPTER 2: DELIVERING WATER TO OUR CUSTOMERS

Your drinking water supply scheme

If you would like to know which supply scheme services your suburb refer to Appendix A: Suburbs by drinking water supply scheme (see page 40). There are some suburbs which are not connected to our drinking water network, this means that residents in these areas do not receive drinking water directly to their properties via our distribution system.

Figure 3: Urban Utilities' drinking water supply schemes

CHAPTER 3: MANAGING SAFE DRINKING WATER

LEGISLATIVE REQUIREMENTS

The supply of safe and reliable drinking water in Queensland is regulated by various pieces of state legislation, including the *Water Supply (Safety and Reliability) Act 2008* (Qld), the *South-East Queensland Water (Distribution and Retail Restructuring) Act 2009* (Qld), the *Public Health Act 2005* (Qld), the *Public Health Regulation 2018* (Qld), and the *Water Fluoridation Act 2008* (Qld).

Under the *Water Supply (Safety and Reliability) Act 2008* (Qld), a drinking water service provider may only carry out a registered drinking water service in accordance with an approved *Drinking Water Quality Management Plan* (DWQMP).

Under the *Public Health Act 2005* (Qld) and *Water Fluoridation Act 2008* (Qld), Queensland Health (QHealth) regulates the standards for drinking water quality related to *E. coli* and fluoride[1], respectively. These standards, together with the health guideline levels in the *Australian Drinking Water Guidelines* 2011[2] (ADWG), comprise water quality criteria for drinking water in Queensland, as set out in the *Water Supply (Safety and Reliability) Act 2008* (Qld).

OUR APPROACH TO MANAGING DRINKING WATER QUALITY

We use a risk management approach to drinking water quality which allows us to identify the substances that may pose a risk to public health. Our methodology to managing drinking water quality is embedded in our Drinking Water Quality Management System (DWQMS), which is based on the ADWG Framework for Management of Drinking Water Quality. Figure 4 shows the 12 elements of the framework:

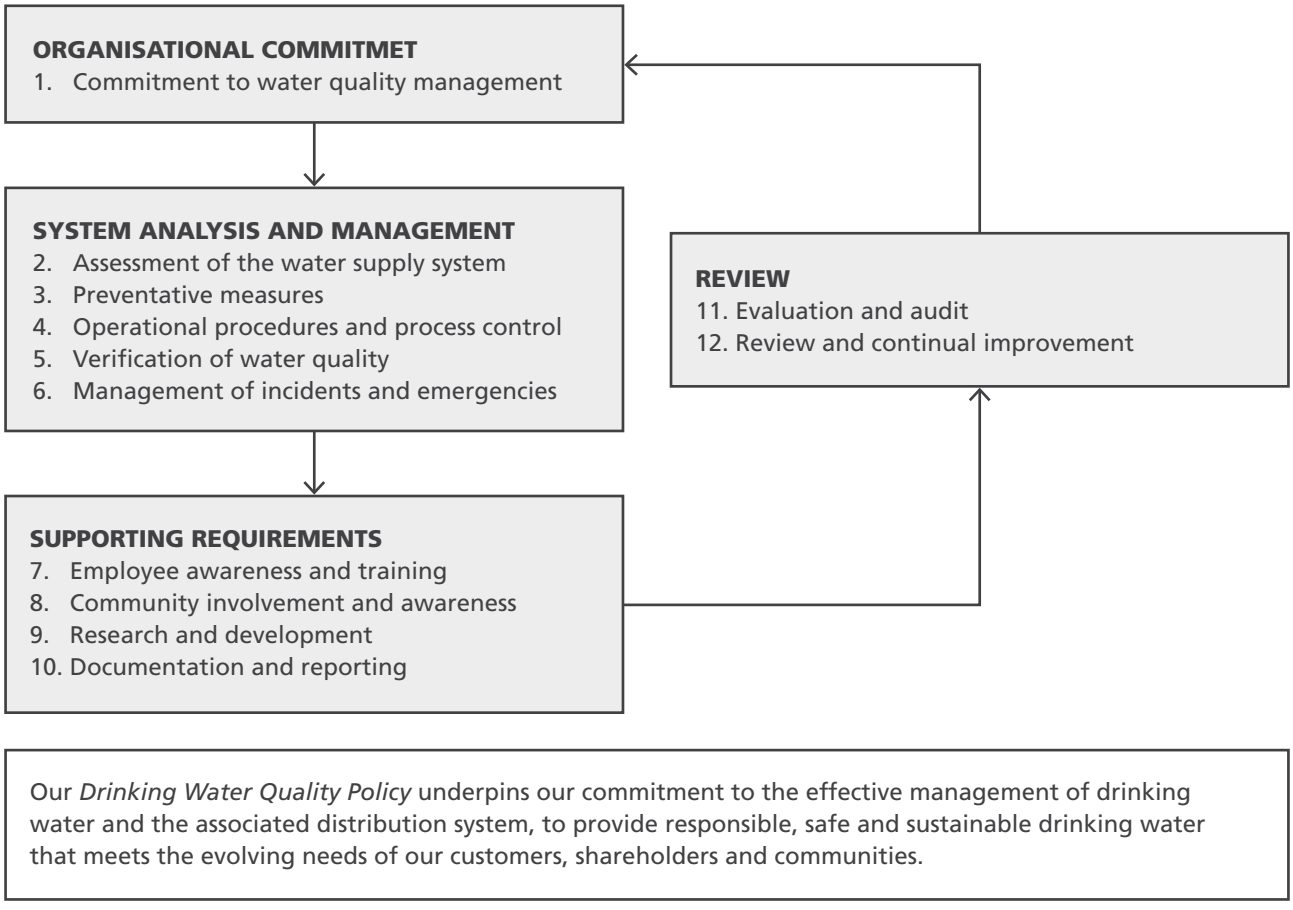


Figure 4: Framework for the management drinking water quality

[1]Low levels of fluoride occur naturally in many water sources. Seqwater adds fluoride to eight of our twelve water supply schemes. For this reason, we are required to test for fluoride in these eight schemes - Beaudesert, Boonah-Kalbar, Canungra, Esk-Toogoolawah, Kilcoy, Kooralbyn, Lowood and the SEQWSS.

[2]Version 3.6, update March 2021

CHAPTER 3: MANAGING SAFE DRINKING WATER

Verification monitoring program

The supply of safe drinking water is our 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 our 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 9,665km of water mains that service our communities.

Monitoring is the final check of drinking water quality performance and is routinely performed throughout the year. 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.

Independent audits are conducted to assure our compliance with the VMP. These audits, completed by a third party managed by our Corporate Affairs group, inform our continuous improvement program and provide oversight to our Board and Executive Leadership Team that the monitoring program is being adhered to and managed appropriately. No concerns were raised from the audits in 2020/21.

SUMMARY ASSESSMENT OF DRINKING WATER COMPLIANCE

The Scientific Analytical Services Laboratory[3] (SAS Lab) is our trusted laboratory service provider and performs our sampling and analytical requirements. In 2020/21, SAS Lab routinely sampled from over 320 dedicated drinking water sample points (SP) collecting over 11,600 samples and performed over 116,000 tests of our drinking water. The drinking water quality parameters were monitored and reviewed in accordance with Queensland legislative requirements and the ADWG.

In 2020/21, we met the prescribed health-related and aesthetic standards for all 12 drinking water supply schemes (see Table 1).

Overall			
Scheme	**E. coli**	**Health**	**Aesthetic**
Beaudesert	☑	☑	☑
Boonah-Kalbar	☑	☑	☑
Canungra	☑	☑	☑
Esk-Toogoolawah	☑	☑	☑
Jimna	☑	☑	☑
Kilcoy	☑	☑	☑
Kooralbyn	☑	☑	☑
Linville	☑	☑	☑
Lowood	☑	☑	☑
Rathdowney	☑	☑	☑
Somerset	☑	☑	☑
SEQWSS	☑	☑	☑

Table 1: Drinking water supply scheme results 1 July 2020 – 30 June 2021

[3]The SAS Lab is accredited by the National Association of Testing Authorities (NATA).

Escherichia coli (*E. coli*)

We continued to achieve excellent health performance in 2020/21 in managing *E. coli* across all drinking water schemes, in accordance with legislative requirements. For each scheme, sampling exceeded the requirements under the regulations. In addition, the standard for drinking water of no detection of *E. coli* in 98% of samples collected over a 12-month period was achieved. *E. coli* was detected in 13 of the 11,600 samples, and on each occasion Urban Utilities provided notification to the Regulator and took the necessary actions to ensure the supply of drinking water was safe.

E. coli water quality compliance details are provided in Appendix B, including the month-by-month performance for each drinking water supply scheme (see page 56).

Health-related chemical assessment

The VMP analyses health-related chemicals which are continuously trended and assessed against ADWG health-related limits and operational control triggers. These include:

Arsenic	Chromium	Manganese
Barium	Copper	Monochloroacetic Acid
Cadmium	Dichloroecetic Acid	Nickel
Chlorine (Free)	Fluoride	Trichloroacetic Acid
Chlorine (Total)	Lead	Trihalomethanes (Total)

All 12 drinking water schemes achieved the performance requirement for health-related chemical limit values defined in the ADWG using the 95th percentile (95th-%ile) calculation.

Health assessment details for each drinking water supply scheme are provided in Appendix C (see page 64).

Aesthetic assessment

Urban Utilities takes advantage of the VMP to continuously assess non-health related parameters which contribute to the way our water tastes, smells and appears. We understand these physical aspects of drinking water are important in enriching the quality of life. In 2020/21, our drinking water schemes performed within the aesthetic guideline values detailed in the ADWG. The aesthetic assessment for each drinking water supply scheme is provided in Appendix D (see page 71).

CHAPTER 4: NOTIFYING THE REGULATOR

Under section 102 of the *Water Supply (Safety and Reliability) Act 2008* (Qld), Urban Utilities is required to immediately inform the Regulator if the quality of water supplied from the drinking water service does not comply with the water quality criteria as specified in the ADWG.

Our water quality incidents represent the number of times a water quality sample did not meet the ADWG parameters, resulting in the immediate notification of the incident to the Regulator.

In 2020/21, we took over 11,600 water samples and conducted in excess of 116,000 water quality tests. Of those samples, 16 tests did not meet the requirements of the ADWG requiring us to report these as incidents to the Regulator.

Of the 16 notifications, 13 related to the detection of *E. coli* in the Brisbane, Ipswich, Scenic Rim and Somerset regions (see Figure 5). Many of these detections can be attributed to reservoir ingress of organic matter entering the water supply during heavy rainfall events. The remaining three notifications related to detections of Trihalomethanes[4] (THM), exceeding the ADWG health limit, in the Somerset local government area which can be related to the level of organic matter in the source water.

On each occasion the investigation of the event found there was no risk to public health.

NOTIFICATIONS TO THE REGULATOR

	E.coli	THMs
Brisbane	7	
Ipswich	4	
Lockyer Valley		
Scenic Rim	1	
Somerset	1	3
Total	**13**	**3**

E.Coli (13) THM (3)

Figure 5: Urban Utilities' notifications to the Regulator 2020/21 by type

[4]A group of by-products that may form under certain conditions when chlorine is used to disinfect drinking water.

Table 2 provides detail regarding each incident, the initial corrective action and investigation outcomes with further actions.

Sample Date	Type	Location/ Supply Scheme	Description	Immediate corrective action	Investigation outcomes and further actions
10/11/20	*E. coli*	Lowood/ Lowood	The non-compliance was a detection of *E. coli* from a routine sample taken from the outlet of R109 Jacqueline Road Reservoir. 1MPN *E. coli* organisms per 100mL was detected. Follow up samples exhibited no continued presence of *E. coli*	The sample exhibited <0.1mg/L Free Chlorine at time of sampling. The reservoir was isolated from supply and network monitoring devices deployed.	The reservoir was isolated for inspection and found to have stormwater ingress issues. These have been resolved and the reservoir is back in service. The low chlorine readings were associated to a change in reservoir operation during a pressure management valve proof of performance testing.

Table 2: Water quality incidents reported to the Regulator 1 July 2020 – 30 June 2021

CHAPTER 4: NOTIFYING THE REGULATOR

Sample Date	Type	Location/ Supply Scheme	Description	Immediate corrective action	Investigation outcomes and further actions
26/11/20	*E. coli*	Seven Hills/ SEQWSS	The non-compliance was a detection of *E. coli* from a routine sample. 41MPN *E. coli* organisms per 100mL was detected. Other samples taken on the same sampling run from the same reservoir zone did not exhibit *E. coli* and follow up samples exhibited no continued presence of *E. coli*.	The sample exhibited 0.8mg/L Total Chlorine at time of sampling demonstrating adequate disinfection. An investigation into SAS Lab procedures was initiated.	Investigations confirmed an error in the SAS Laboratory benchtop process. SAS has introduced additional benchtop controls and improved training/ awareness for new starters. While SAS reissued the laboratory report confirming a nil detection of *E. coli*, the Regulator confirmed that this detection must be included as a notifiable event in the *2020/21 Drinking Water Quality Management Plan Report*, but future statistical analysis can utilise the reissued laboratory report.
15/12/20	*E. coli*	Inala/ SEQWSS	The non-compliance was a detection of *E. coli* from a routine sample. 2MPN E. coli organisms per 100mL was detected. Follow up samples exhibited no continued presence of *E. coli*.	The sample exhibited <0.1mg/L Total Chlorine at time of sampling. The network was flushed, and responsive samples were taken from the relevant sample points in the supply zone.	The Inala reservoir exhibited a minor abnormal operating profile approximately five days prior to the detection. In addition, the local area received 150mm of rainfall in three days leading to the detection. The reservoir was isolated for inspection and found to have stormwater ingress issues. These issues have been resolved and the reservoir is back in service.

Table 2: Water quality incidents reported to the Regulator 1 July 2020 – 30 June 2021

Sample Date	Type	Location/ Supply Scheme	Description	Immediate corrective action	Investigation outcomes and further actions
15/12/20	*E. coli*	Sunnybank Hills/ SEQWSS	The non-compliance was a detection of *E. coli* from a routine sample. 3MPN *E. coli* organisms per 100mL was detected. Follow up samples exhibited no continued presence of *E. coli*.	The sample exhibited 3.2mg/L Total Chlorine at time of sampling demonstrating adequate disinfection. Responsive samples were taken from the relevant sample points in the supply zone.	No conclusive evidence could be found to demonstrate the source of the detection. Verification monitoring continues in accordance with the DWQMP.
17/12/20	*E. coli*	Canungra	The non-compliance was a detection of *E. coli* from a routine sample. 10MPN *E. coli* organisms per 100mL was detected. Follow up samples exhibited no continued presence of *E. coli*.	The sample exhibited 0.5mg/L Free Chlorine at the time of sampling. The network was flushed, and responsive samples were taken from the relevant sample points in the supply zone. Reconfiguration of the Canungra network and manual dosing of the Canungra reservoirs to improve chlorine performance.	256mm rain was detected from the closest weather station the week before the sample was taken. Review of condition assessment reports found concern with the gutter/reservoir overflow arrangement which would facilitate stormwater ingress during extreme rainfall events. These rectification works are planned for delivery in early 2021/22. Verification monitoring continues to demonstrate high performing chlorine residuals in the scheme.
10/2/21	THM	Tabletop/ Lowood	The non-compliance was a detection of Trihalomethanes (THM) from a routine sample. 280ug/L was detected.	Active water displacement within the Tabletop supply zone was conducted in response to receiving the reported THM concentrations. Follow-up samples returned results that were under the ADWG limit of 250ug/L.	An investigation report will be formalised to explore options for THM treatment practices to reduce THM concentrations in the Tabletop Supply Zone. The zone will continue to be managed through our THM Management Plan.

Table 2: Water quality incidents reported to the Regulator 1 July 2020 – 30 June 2021

CHAPTER 4: NOTIFYING THE REGULATOR

Sample Date	Type	Location/ Supply Scheme	Description	Immediate corrective action	Investigation outcomes and further actions
10/2/21	THM	Fernvale/ Lowood	The non-compliance was a detection of Trihalomethanes (THM) from a routine sample. 270ug/L was detected.	Follow-up samples returned results that were under the ADWG limit of 250ug/L.	Urban Utilities' THM Management Plan was being implemented in accordance with the Plan. The zone will continue to be managed through our THM Management Plan.
11/2/21	*E. coli*	Thagoona/ SEQWSS	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 exhibited <0.1mg/L Total Chlorine at the time of sampling. Responsive samples were taken, and the reservoir was isolated from supply.	No rainfall events were recorded in the lead up to the event. The reservoir was isolated for inspection wih only negligible stormwater ingress identified, so this is not considered to be a casual factor. Regardless, this issue has been resolved and the reservoir is back in service. No conclusive evidence could be found to demonstrate the source of the detection. Verification monitoring continues.
26/2/21	*E. coli*	Inala/ SEQWSS	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 exhibited 0.3mg/L Total Chlorine at the time of sampling. Responsive samples were taken, and the reservoir was isolated from supply.	39mm of rain had been recorded at the closest weather station in the days preceding the event. The reservoir was isolated for inspection and found to have stormwater ingress issues. These have been resolved and the reservoir is back in service.

Table 2: Water quality incidents reported to the Regulator 1 July 2020 – 30 June 2021

Sample Date	Type	Location/ Supply Scheme	Description	Immediate corrective action	Investigation outcomes and further actions
23/3/21	*E. coli*	Mitchelton/ SEQWSS	The non-compliance was a detection of *E. coli* from a routine sample. 2MPN *E. coli* organisms per 100mL was detected. Follow up samples exhibited no continued presence of *E. coli.*	The sample exhibited 0.01mg/L Total Chlorine at the time of sampling. Responsive samples were taken, and the reservoir was isolated from supply.	98mm of rain had been recorded at the closest weather station in the 24hrs up to sampling. The reservoir was isolated for inspection and found to have stormwater ingress and blocked downpipes. These have been resolved including improvements to the downpipes to improve inspection. The reservoir is back in service
23/3/21	*E. coli*	Goodna/ SEQWSS	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 exhibited <0.1mg/L Total Chlorine at the time of sampling. Responsive samples were taken, and the reservoir was isolated from supply. A strategic flushing plan was enacted.	There were a number of extreme rain events recorded in the week leading up to the incident. The reservoir was isolated for inspection and found to have stormwater ingress issues. These have been resolved and the reservoir is back in service.
2/4/21	*E. coli*	Yamanto/ SEQWSS	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 exhibited <0.1mg/L Total Chlorine at the time of sampling. The reservoir was isolated from supply, and a responsive flushing plan was enacted. In addition, responsive sampling was conducted.	No rainfall events were recorded in the lead up to the event. The reservoir was isolated for inspection and found stormwater ingress issues and vermin. Vermin were removed from the reservoir, the ingress locations rectified, and the reservoir was cleaned and disinfected before being brought back into service.

Table 2: Water quality incidents reported to the Regulator 1 July 2020 – 30 June 2021

CHAPTER 4: NOTIFYING THE REGULATOR

Sample Date	Type	Location/ Supply Scheme	Description	Immediate corrective action	Investigation outcomes and further actions
7/4/21	*E. coli*	Marburg/ SEQWSS	The non-compliance was a detection of *E.coli* from a routine sample. 2MPN *E. coli* organisms per 100mL was detected. Follow up samples exhibited no continued presence of *E. coli*.	The sample exhibited <0.1mg/L Total Chlorine at the time of sampling. The reservoir was isolated from supply and the zone was then flushed from the upstream supply.	18mm of rain was detected from the closest weather station in the 24hrs leading up to sampling. The reservoir was isolated for inspection and found to have stormwater ingress issues. These have been resolved and the reservoir is back in service.
9/4/21	THM	Jimna/ Jimna	The non-compliance was a detection of Trihalomethanes (THM) from a routine sample. 290ug/L was detected.	Urban Utilities flushed the supply scheme to actively displace drinking water containing high concentrations of THMs as part of the initial response. Follow-up samples returned results that were under the ADWG limit of 250ug/L. Seqwater opted to change the water source by tankering water to the supply scheme and isolate the treatment plant from supply until raw water conditions improved.	A combination of warm ambient temperatures, raw water quality and lower network demands has increased THM formation potential of the treated water in the network. We will continue to collaborate with Seqwater to manage THM formation potential.

Table 2: Water quality incidents reported to the Regulator 1 July 2020 – 30 June 2021

Sample Date	Type	Location/ Supply Scheme	Description	Immediate corrective action	Investigation outcomes and further actions
8/5/21	*E. coli*	Marburg/ SEQWSS	The non-compliance was a detection of *E.coli* from a routine sample. 2MPN *E. coli* organisms per 100mL was detected. Follow up samples exhibited no continued presence of *E. coli*.	The sample exhibited <0.1mg/L Total Chlorine at the time of sampling. As recent corrective works had been carried out, the Marburg reservoir was not considered a contributing factor in the detection. A mains cleaning plan was developed and enacted. Responsive sampling of the zone was undertaken.	14mm of rain was detected from the closest weather station in the 24hrs leading up to sampling. The Haigslea reservoir was dosed with chlorine and inspected. The inspection found stormwater ingress locations. The reservoir is back in service with a local area disinfection management plan in place.
9/6/21	*E. coli*	Bracken Ridge/ SEQWSS	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 exhibited 0.9mg/L Total Chlorine at time of sampling demonstrating adequate disinfection. Responsive samples were taken from the relevant sample points in the supply zone.	No conclusive evidence could be found to demonstrate the source of the detection. The reservoir is scheduled for inspection in Quarter 1 of 2021/22. Verification monitoring continues.

Table 2: Water quality incidents reported to the Regulator 1 July 2020 – 30 June 2021


Daniel
USE
OTHER
FOOTPATH

CHAPTER 5: IMPROVING DRINKING WATER QUALITY

Urban Utilities is committed to continual improvement and innovation in the management of our drinking water supply so that we provide our customers with a safe, high-quality and reliable product. It's how we enrich quality of life.

WATER QUALITY IMPROVEMENTS PROGRAM

Reservoir water safety

During 2020/21, we reviewed our reservoir water safety improvement program and identified improvement opportunities in the way we conduct and assess water quality risks at reservoirs. Through collaborative consultation and strategic partnering, we've implemented an improved inspection methodology, reporting framework and unearthed better ways of working around operational constraints which have historically hampered speed of inspection delivery. By doing so, we have unlocked rapid delivery of 16 comprehensive inspections of reservoirs in less than three months. In addition, we framed our approach to maintenance methodologies at reservoirs to focus on condition, serviceability and risk in achieving better alignment of our generic maintenance programs to asset classifications. Through the reservoir safety program, we are investigating new ways to capture asset attributes in our asset management systems to better assess asset risk to service. Overtime, this will mature our operation and maintenance practices for each site, protect the safety of our drinking water and better inform our cost to serve decisions.

In addition, significant resources have been invested in creating robust asset risk models with a lens on asset condition and asset risk to service. By considering the asset in its ability to maintain product quality as much as asset condition we have created an enhanced asset risk framework for driving more informed asset renewals. In 2020/21, we enhanced the water quality safety of a further 10 reservoirs and commissioned four new reservoirs into service.

We continued to improve reservoir site security through the rollout of CCTV with smart human detection analytics. Last year, we added 24hr control room visibility to seven reservoir sites by installing a further 28 cameras, increasing our remote supervision to 23 reservoir sites via 90 cameras. The utility leading system alerts the control room to any suspicious activity and has resulted in a number of interventions since inception.

Network improvements

Our water mains renewal program replaced a further 15km of water mains. This program proactively targets the replacement of pipes to reduce the likelihood of unplanned disruptions to our customers' water service. Replacement of these assets improves the reliability of our water quality and water supply.

CHAPTER 5: IMPROVING DRINKING WATER QUALITY

Disinfection management

Chlorine-based disinfectants provide the disinfection barrier to control biological activity within drinking water. These disinfectants are simple to add to drinking water, however factors such as water age and temperature impact chlorine longevity. We've continued to work through the balance of network water age and disinfection, constantly tuning our reservoir operation to maximise disinfection performance and maintain supply requirements. During the year, we continued to mature the development of deep cycling interventions and our understanding in terms of risk and disinfection response.

In some instances, we manage disinfection through chlorine dosing. In 2020/21, we invested further into our disinfection management units by improving data acquisition and process visibility. We also enhanced our dosing process across the fleet of chlorine dosing units to improve our operations and the consistency of drinking water quality. In 2020/21, we also saw further development of our drinking water chlorine dosing unit standards with our first prototype design due for install early 2021/22. We made further improvements to the way we monitor and manage chlorine used in the network specifically aimed at reducing the likelihood of by-products associated with chlorine addition.

Urban Utilities continues to monitor its disinfection performance through verification monitoring and operationally through a fleet of portable online analysers. We continue to leverage our in-house service and maintenance calibration rig to ensure the ongoing data acquisition performance of the units.

Trihalomethane management

In 2020/21, we implemented minor changes to the way we monitor trihalomethanes[5] (THM) by increasing the monitoring frequency of high likelihood locations. Doing so allows us to identify emerging THM trends and enables us to activate our THM management plan more effectively. Our THM management plan has a series of escalation triggers which prompts operational actions intended to mitigate further THM formation or rapidly reduce THM concentrations in the drinking water. In conjunction with operational actions, messaging protocols are enacted to enable identification and management of impacted customers.

DRIVING CHANGE THROUGH COLLABORATION

Driving resilience in our drinking water

During 2020/21, we continued to collaborate with our bulk water supplier to develop water quality service standards intended to better define water quality expectations of the bulk water received by Urban Utilities customers. This is a milestone achievement welcomed by both parties, with Urban Utilities customers being beneficiaries of more consistent and higher performing bulk water. The initiative will be ratified in the next revision of the *Bulk Water Supply Agreement* with Seqwater.

During the summer period, a collaborative effort amongst the Grid[6] connected partners saw the secondary disinfection targets of the bulk water increased in efforts to improve the disinfection in the Brisbane and Ipswich distribution network. The data acquired through this period will inform future summer operating profiles.

In Beaudesert, we continued to work with Seqwater to improve resilience of water supply and enhanced drinking water quality to the township through implementation of more resilient operating protocols and treatment options. Further supply resilience will be realised with the 2022 connection of Beaudesert to the Grid. Urban Utilities and Seqwater will continue to work on water quality objectives for the new supply arrangement to achieve best possible outcomes for the Beaudesert community.

We've improved the way we plan and design network projects setting water quality performance objectives and incorporating water quality modelling in water network plans to use science and data to drive decisions. We have used this approach to enhance the water quality outcomes of three key areas being Toohey Mountain, Roles Hill/ Manly and Holland Park water supply zones.

[5]A group of disinfection by-products that generally form when chlorine is used to disinfect drinking water.
[6]Communities supplied through the SEQWSS.

During 2020/21, we continued to collaborate with our water supply partners in South East Queensland by:

- continuing to deliver the regionally endorsed asset infrastructure investment strategy developed with our South East Queensland water supply partners,
- optimising operational efficiencies to improve how we disinfect the drinking water supply across South East Queensland,
- continuing engagement with key customers regarding increasing the pH of the water to enhance the stability of chloramine, and
- collaborating with Seqwater to build more resilience in the Lowood water supply scheme to ensure the continuity of water supply, including consistency in the quality of the drinking water.

Pursing knowledge and innovation

Urban Utilities continues to participate in the following research and development projects:

- *Smart Management of Chloramine:* This Australian Research Council (ARC) funded project aims to develop a real-time control system for chloraminated by quantifying and defining the microbial mechanisms about how chloramine decays in water supply systems
- *Metals at the consumer's tap:* Run by Water Services Association of Australia (WSAA), this study is looking into the effects of internal plumbing on drinking water quality across Australia.
- *Mycobacteria in Water Supplies:* This project funded by the Cystic Fibrosis Foundation (USA), and administered through the University of Queensland, is expected to develop an understanding of the colonisation and contamination of Mycobacterium abscessus[7] in drinking water supplies in South East Queensland and South Australia.

RISK MANAGEMENT

We continue to collaborate with key stakeholders with regard to improvement initiatives identified through recommendations arising from the 2019 review of the *Drinking Water Quality Risk Management Improvement Program*. The risk assessment activity was a comprehensive analysis of the hazardous events which can occur when managing a drinking water supply.

The improvement program addresses risks which fell into four core themes, as shown in Table 3. These actions will be progressed over the next 12-18 months.

Core theme	Number of risks	Focus of Action Plans
Disinfection	5	Implement network models to enhance disinfection performance through the drinking water distribution networks.
		Improve level of disinfection monitoring in key locations.
		Implement standardisation to chemical dosing unit design.
		Undertake R&D projects to further understand risk profile and control measures throughout the supply network.
Physical integrity of reservoirs	2	Enhancement of physical security measures and monitoring at reservoirs.
		Enhancement of reservoir maintenance and inspection processes.
Contract management and workforce capability	4	Improve the management of contracts for supply of materials and services associated with drinking water.
		Develop and formalise drinking water quality training for the construction and maintenance workforce.
Network planning	1	Review network planning process to ensure water quality is a mandatory criterion.

Table 3: Drinking water quality risk categories and focus of action plans

[7]Mycobacterium abscessus is a bacterium distantly related to the ones that cause tuberculosis and leprosy.

CHAPTER 6: CUSTOMER SATISFACTION

We recognise the value of community engagement in building trust in our brand, and the delivery of service excellence. We understand 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. As such, we ensure this feedback is captured, recorded and monitored in order to 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 we receive various water quality enquiries throughout the year, a 'water quality complaint' is registered when a person contacts us and expresses dissatisfaction regarding the quality of our drinking water[8]. Complaint categories are shown in Table 4.

Water quality complaint category	Commentary
Stained	In response to these complaints, Urban Utilities delivers specially formulated laundry powder to remove the staining.
Discoloured	These complaints typically followed maintenance activity on the water distribution network. While a definitive reason for the drop in this category cannot be determined, it is likely that changes to network responsive maintenance procedures have influenced the lower results.
Air	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.
Illness	All calls received from customers who suspect their drinking water may be associated with an illness they are experiencing are classified as complaints.
Other	This classification captures complaints that do not fall within the standard Urban Utilities' categories.

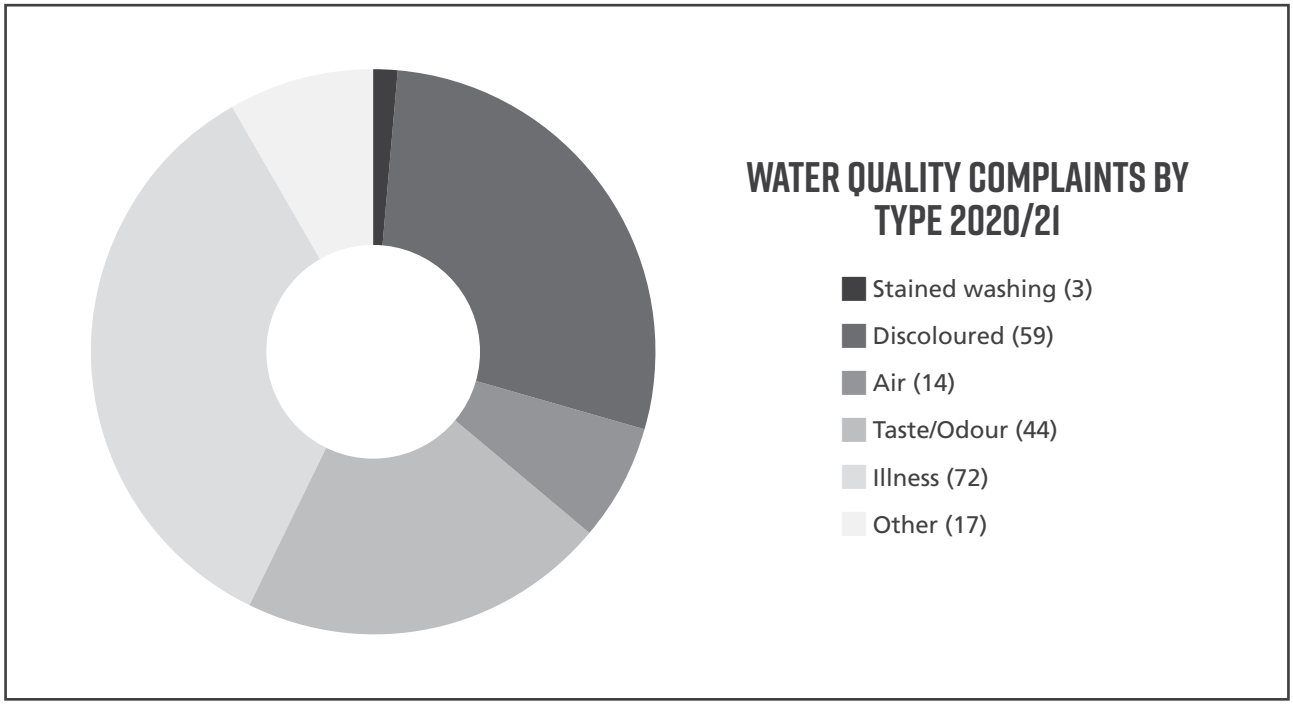
Table 4: Water quality complaint categories

[8]AS ISO 10002-2006 Customer satisfaction – guidelines for complaints handling in organizations

CHAPTER 6: CUSTOMER SATISFACTION

Water quality complaints performance 2020/21

In 2020/21, we received 965 water quality enquiries of which 209 (22%) were classified as water quality complaints. Figure 6 shows water quality complaints by category and region.



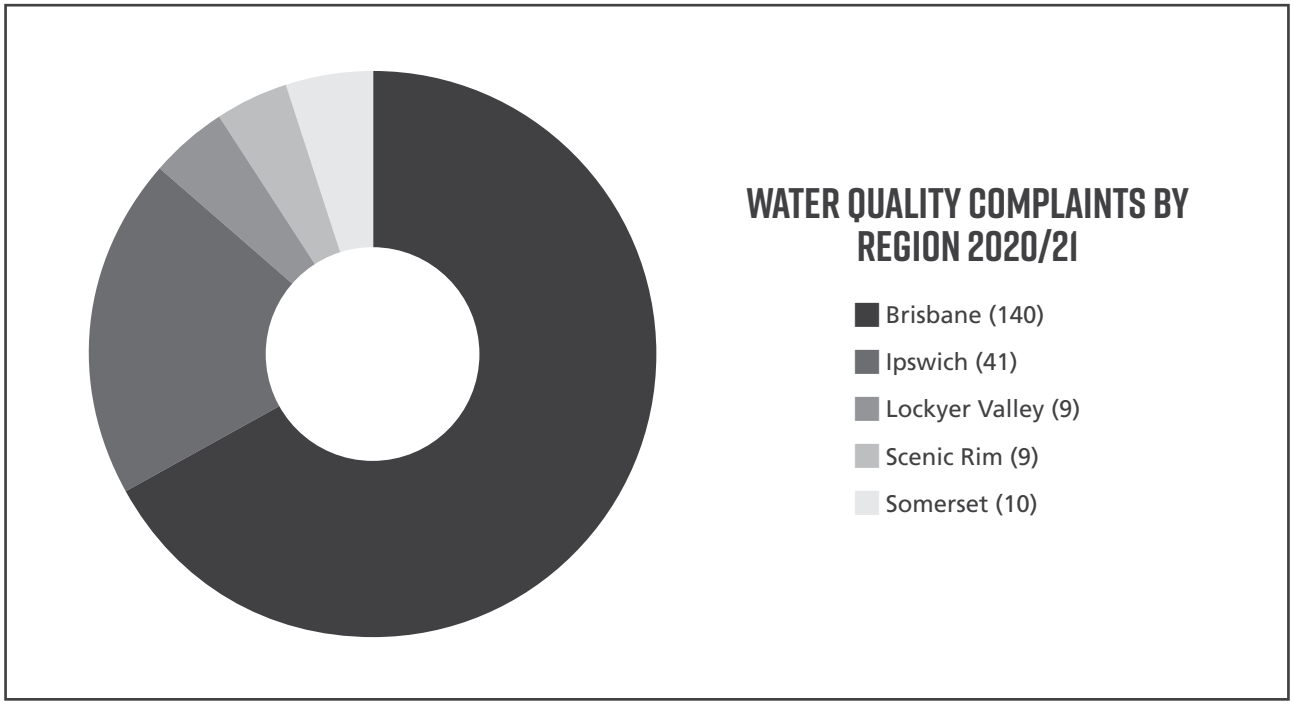


Figure 6: Water quality complaints by category and region 2020/21

The 2020/21 result is a reduction from the 2019/20 result of 932 water quality enquiries of which 289 (31%) were classified as complaints. Figure 7 shows performance with regard to total water quality complaints since 2016/17, with Figure 8 showing performance by category.

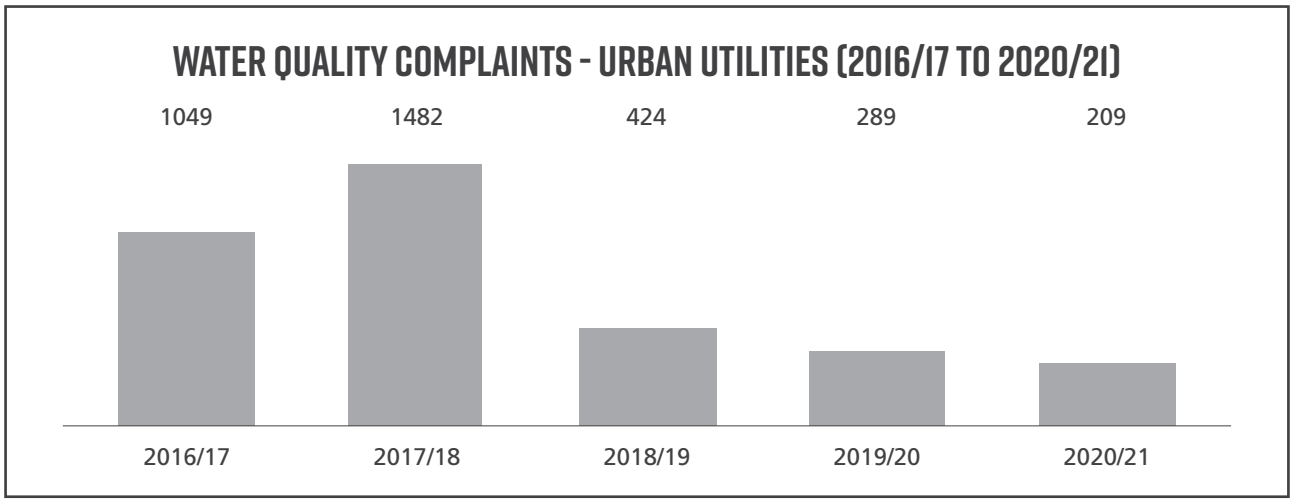


Figure 7: Total water quality complaints 2016/17 to 2020/21

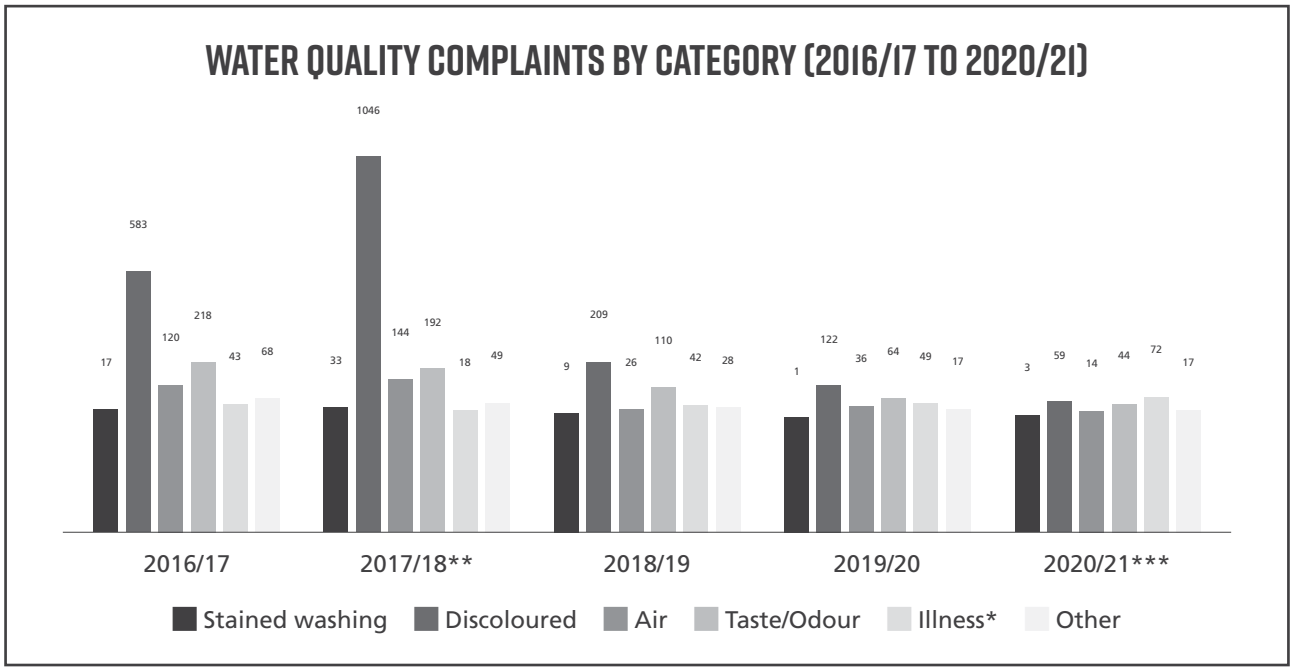


Figure 8: Total water quality complaints 2016/17 to 2020/21

* Water Quality Officers investigated each complaint related to perceived illness 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. Urban Utilities did not find evidence that the drinking water from the water supply network was linked to an illness complaint.
** On 1 July 2018, we changed the way we classify and report water quality complaints to align with the Australian/International Standard 10002-2006 Customer satisfaction – guidelines for complaints handling in organizations, and consistency with other water utilities.
*** In 2020/21, no strong causal factors were identified for the increased illness complaints; however anecdotal evidence, in particular longer periods of being restricted to the home, suggests that the ongoing COVID-19 pandemic has heightened customers' vigilance in regard to health concerns.

CHAPTER 6: CUSTOMER SATISFACTION

Figure 9 shows Urban Utilities' performance against the Customer Service Standards as published in its Residential and Business Customer Charters, and a comparison with comparable water service providers across Australia with similar complexities and risks relating to the supply of drinking water.

Our Charters outline the commitments, responsibilities and standards that our customers can expect from us in relation to the water we provide. In 2020/21, our customer service standard for water quality was less than or equal to six water quality complaints per 1,000 property connections. In 2020/21, we remained well under the customer service standard.

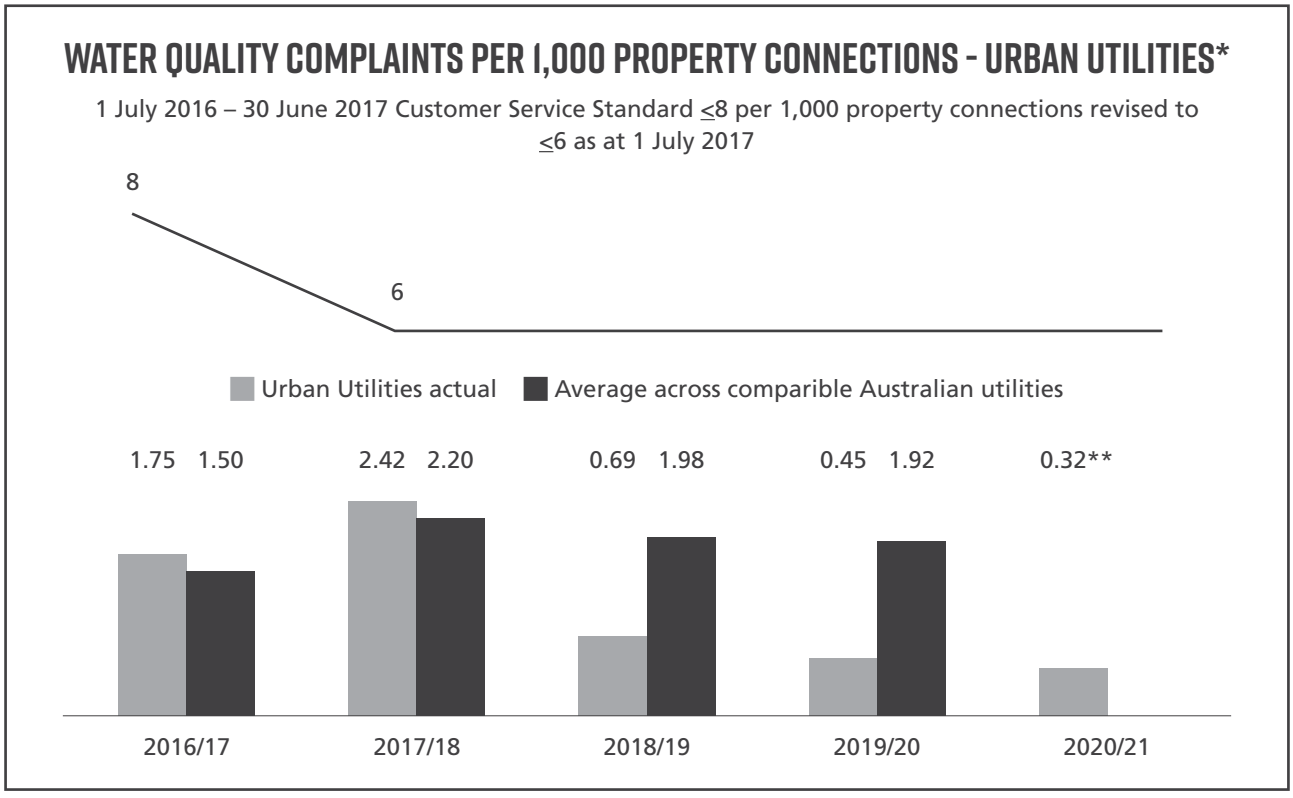


Figure 9: Water quality complaints per 1,000 property connections 2016/17 to 2020/21

*The value for comparable Australian Utilities is sourced from the Bureau of Meteorology's *National performance report (NPR) 2019-20: urban water utilities:* Indicator Code C9 – Number of water quality complaints per 1,000 properties: water supply, by utility size group (100,000+ size group).
**The NPR data for 2020/21 is expected to be available in March/April 2022.

CHAPTER 7: AUDIT OF THE DRINKING WATER QUALITY MANAGEMENT PLAN

In accordance with section 99(2)(c) of the *Water Supply (Safety and Reliability) Act 2008* (Qld) the Regulator requires that audits of Urban Utilities' DWQMP are to be completed every four years. Under section 10.2 of the Information Notice approving Urban Utilities' DWQMP, an audit was required to be completed by 30 January 2021 and was completed by the due date.

The purpose of the regular audit is to:

- verify the accuracy of the monitoring and performance data provided to the Regulator under the DWQMP,
- assess Urban Utilities' compliance with the plan, and
- assess the relevance of the plan in relation to Urban Utilities' drinking water service.

The latest audit concluded that:

- Urban Utilities demonstrated full compliance with the audit requirements,
- there is a high level of awareness in relation to water quality across the organisation, and the implementation of the DWQMP is 'business as usual' which is an indicator of a mature management system,
- significant resources have been allocated to the establishment and implementation of key preventive measures, including reservoir integrity, disinfection management and site security,
- incidents have been managed by a comprehensive framework that includes corrective actions, reporting and investigation, and
- there were no areas of concern regarding the management of water quality.

The auditor did, however, pose three opportunities for improvement (OFI). An OFI is identified for activities which comply but may also be improved. This may be an opportunity for process improvement or comments that may be relevant to the next audit. The OFIs and status are shown in Table 5.

Reference	OFI	Status
OFI-2020-001	Ensure all team members with responsibilities for water quality or requiring access to the reservoirs have undertaken the steps to activate keys and have the required access permissions.	This action is complete. The Urban Utilities key system has been updated to reflect relevant permissions.
OFI-2020-002	Update the risk assessment to correctly reference the preventive measures in two procedures, REF201 Drinking Water Rechlorination Management - Chemical Dosing Units and FS70 Hand Dosing Fact Sheet for the manual dosing of chlorine.	This action is complete.
OFI-2020-003	Update the existing procedure or develop a new procedure that identifies the requirements for flushing mains after a repair, and criteria for determining acceptance for bringing the main back into service.	Operations & Maintenance Planning and Field Services are collaborating to establish a flushing standard based on leading practice. The standard will be communicated to the field crews via Toolbox Talks and in-field training as required. This activity is due for completion in 2021/22.

Table 5: Opportunities for improvement identified though the DWQMP audit


QUEENSLAND
UrbanUtilities

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APPENDIX A: SUBURBS BY WATER SUPPLY SCHEMES

Suburb	P/Code	Local Government Area	Water Supply Scheme
Acacia Ridge	4110	Brisbane	South East Queensland Water Supply Scheme
Adare	4343	Lockyer Valley	Lowood
Albion	4010	Brisbane	South East Queensland Water Supply Scheme
Alderley	4051	Brisbane	South East Queensland Water Supply Scheme
Algester	4115	Brisbane	South East Queensland Water Supply Scheme
Allandale	4310	Scenic Rim	Boonah-Kalbar
Allenview	4285	Scenic Rim	Not connected to the Urban Utilities network[11]
Amberley	4306	Ipswich	South East Queensland Water Supply Scheme
Annerley	4103	Brisbane	South East Queensland Water Supply Scheme
Anstead	4070	Brisbane	South East Queensland Water Supply Scheme
Anthony	4310	Scenic Rim	Not connected to the Urban Utilities network
Aratula	4309	Scenic Rim	Boonah-Kalbar
Archerfield	4108	Brisbane	South East Queensland Water Supply Scheme
Ascot	4007	Brisbane	South East Queensland Water Supply Scheme
Ashgrove	4060	Brisbane	South East Queensland Water Supply Scheme
Ashwell	4340	Ipswich	South East Queensland Water Supply Scheme
Aspley	4034	Brisbane	South East Queensland Water Supply Scheme
Atkinson Dam	4311	Lockyer Valley	Not connected to the Urban Utilities network
Auchenflower	4066	Brisbane	South East Queensland Water Supply Scheme
Augustine Heights	4300	Ipswich	South East Queensland Water Supply Scheme
Avoca Vale	4305	Somerset	Not connected to the Urban Utilities network
Bald Hills	4036	Brisbane	South East Queensland Water Supply Scheme
Ballard	4352	Lockyer Valley	Not connected to the Urban Utilities network
Balmoral	4171	Brisbane	South East Queensland Water Supply Scheme
Banks Creek	4306	Somerset	Not connected to the Urban Utilities network
Banyo	4014	Brisbane	South East Queensland Water Supply Scheme
Bardon	4065	Brisbane	South East Queensland Water Supply Scheme
Barellan Point	4306	Ipswich	South East Queensland Water Supply Scheme
Barney View	4287	Scenic Rim	Not connected to the Urban Utilities network
Basin Pocket	4305	Ipswich	South East Queensland Water Supply Scheme
Beaudesert	4285	Scenic Rim	Beaudesert
Beechmont	4211	Scenic Rim	Not connected to the Urban Utilities network
Bellbird Park	4300	Ipswich	South East Queensland Water Supply Scheme
Bellbowrie	4070	Brisbane	South East Queensland Water Supply Scheme
Belmont	4153	Brisbane	South East Queensland Water Supply Scheme
Benobble	4275	Scenic Rim	Not connected to the Urban Utilities network

[11]There are some suburbs which are not connected to our drinking water network, this means that residents in these areas do not receive drinking water directly to their properties via our distribution system.

Suburb	P/Code	Local Government Area	Water Supply Scheme
Berrinba	4117	Brisbane	South East Queensland Water Supply Scheme
Biarra	4313	Somerset	Not connected to the Urban Utilities network
Biddaddaba	4275	Scenic Rim	Not connected to the Urban Utilities network
Binna Burra	4211	Scenic Rim	Not connected to the Urban Utilities network
Birnam	4285	Scenic Rim	Not connected to the Urban Utilities network
Black Duck Creek	4343	Lockyer Valley	Not connected to the Urban Utilities network
Blacksoil	4306	Ipswich	South East Queensland Water Supply Scheme
Blackstone	4304	Ipswich	South East Queensland Water Supply Scheme
Blanchview	4352	Lockyer Valley	Not connected to the Urban Utilities network
Blantyre	4310	Scenic Rim	Not connected to the Urban Utilities network
Blenheim	4341	Lockyer Valley	Lowood
Boonah	4310	Scenic Rim	Boonah-Kalbar
Boondall	4034	Brisbane	South East Queensland Water Supply Scheme
Booval	4304	Ipswich	South East Queensland Water Supply Scheme
Borallon	4306	Somerset	Not connected to the Urban Utilities network
Bowen Hills	4006	Brisbane	South East Queensland Water Supply Scheme
Boyland	4275	Scenic Rim	Not connected to the Urban Utilities network
Bracken Ridge	4017	Brisbane	South East Queensland Water Supply Scheme
Braemore	4313	Somerset	Not connected to the Urban Utilities network
Brassall	4305	Ipswich	South East Queensland Water Supply Scheme
Bridgeman Downs	4035	Brisbane	South East Queensland Water Supply Scheme
Brighton	4017	Brisbane	South East Queensland Water Supply Scheme
Brightview	4311	Lockyer Valley	Lowood
Brightview	4311	Somerset	Lowood
Brisbane	4000	Brisbane	South East Queensland Water Supply Scheme
Brisbane Airport	4008	Brisbane	South East Queensland Water Supply Scheme
Bromelton	4285	Scenic Rim	Not connected to the Urban Utilities network
Brookfield	4069	Brisbane	South East Queensland Water Supply Scheme
Brookwater	4300	Ipswich	South East Queensland Water Supply Scheme
Bryden	4312	Somerset	Not connected to the Urban Utilities network
Buaraba	4311	Somerset	Not connected to the Urban Utilities network
Buaraba South	4343	Lockyer Valley	Not connected to the Urban Utilities network
Bulimba	4171	Brisbane	South East Queensland Water Supply Scheme
Bulwer	4025	Brisbane	South East Queensland Water Supply Scheme
Bunburra	4310	Scenic Rim	Boonah-Kalbar
Bundamba	4304	Ipswich	South East Queensland Water Supply Scheme

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Suburb	P/Code	Local Government Area	Water Supply Scheme
Bunjurgen	4310	Scenic Rim	Boonah-Kalbar
Burbank	4156	Brisbane	South East Queensland Water Supply Scheme
Burnett Creek	4310	Scenic Rim	Not connected to the Urban Utilities network
Caboonbah	4312	Somerset	Not connected to the Urban Utilities network
Caffey	4344	Lockyer Valley	Not connected to the Urban Utilities network
Cainbable	4285	Scenic Rim	Not connected to the Urban Utilities network
Calamvale	4116	Brisbane	South East Queensland Water Supply Scheme
Calvert	4340	Ipswich	South East Queensland Water Supply Scheme
Camira	4300	Ipswich	South East Queensland Water Supply Scheme
Camp Hill	4152	Brisbane	South East Queensland Water Supply Scheme
Cannon Creek	4310	Scenic Rim	Not connected to the Urban Utilities network
Cannon Hill	4170	Brisbane	South East Queensland Water Supply Scheme
Canungra	4275	Scenic Rim	Canungra
Capalaba West	4157	Brisbane	South East Queensland Water Supply Scheme
Carina	4152	Brisbane	South East Queensland Water Supply Scheme
Carina Heights	4152	Brisbane	South East Queensland Water Supply Scheme
Carindale	4152	Brisbane	South East Queensland Water Supply Scheme
Carneys Creek	4310	Scenic Rim	Not connected to the Urban Utilities network
Carole Park	4300	Ipswich	South East Queensland Water Supply Scheme
Carpendale	4311	Lockyer Valley	Not connected to the Urban Utilities network
Carseldine	4034	Brisbane	South East Queensland Water Supply Scheme
Chandler	4155	Brisbane	South East Queensland Water Supply Scheme
Chapel Hill	4069	Brisbane	South East Queensland Water Supply Scheme
Charlwood	4309	Scenic Rim	Boonah-Kalbar
Chelmer	4068	Brisbane	South East Queensland Water Supply Scheme
Chermside	4032	Brisbane	South East Queensland Water Supply Scheme
Chermside West	4032	Brisbane	South East Queensland Water Supply Scheme
Chinghee Creek	4285	Scenic Rim	Not connected to the Urban Utilities network
Christmas Creek	4285	Scenic Rim	Not connected to the Urban Utilities network
Churchable	4343	Lockyer Valley	Not connected to the Urban Utilities network
Churchill	4305	Ipswich	South East Queensland Water Supply Scheme
Chuwar	4306	Brisbane	South East Queensland Water Supply Scheme
Chuwar	4306	Ipswich	South East Queensland Water Supply Scheme
Clarendon	4311	Somerset	Not connected to the Urban Utilities network
Clayfield	4011	Brisbane	South East Queensland Water Supply Scheme
Clumber	4309	Scenic Rim	Not connected to the Urban Utilities network

Suburb	P/Code	Local Government Area	Water Supply Scheme
Coal Creek	4312	Somerset	Not connected to the Urban Utilities network
Coalfalls	4305	Ipswich	South East Queensland Water Supply Scheme
Coleyville	4307	Scenic Rim	Not connected to the Urban Utilities network
Colinton	4306	Somerset	Not connected to the Urban Utilities network
College View	4311	Lockyer Valley	Lowood
Collingwood Park	4301	Ipswich	South East Queensland Water Supply Scheme
Coochin	4310	Scenic Rim	Not connected to the Urban Utilities network
Cooeeimbardi	4313	Somerset	Not connected to the Urban Utilities network
Coolana	4311	Somerset	Lowood
Coominya	4311	Somerset	Not connected to the Urban Utilities network
Coopers Plains	4108	Brisbane	South East Queensland Water Supply Scheme
Coorparoo	4151	Brisbane	South East Queensland Water Supply Scheme
Corinda	4075	Brisbane	South East Queensland Water Supply Scheme
Coulson	4310	Scenic Rim	Boonah-Kalbar
Cowan Cowan	4025	Brisbane	South East Queensland Water Supply Scheme
Cressbrook	4313	Somerset	Not connected to the Urban Utilities network
Croftby	4310	Scenic Rim	Not connected to the Urban Utilities network
Crossdale	4312	Somerset	Not connected to the Urban Utilities network
Crowley Vale	4352	Lockyer Valley	Lowood
Cryna	4285	Scenic Rim	Beaudesert
Darlington	4285	Scenic Rim	Not connected to the Urban Utilities network
Darra	4076	Brisbane	South East Queensland Water Supply Scheme
Deagon	4017	Brisbane	South East Queensland Water Supply Scheme
Deebing Heights	4306	Ipswich	South East Queensland Water Supply Scheme
Derrymore	4343	Lockyer Valley	Not connected to the Urban Utilities network
Dinmore	4303	Ipswich	South East Queensland Water Supply Scheme
Doolandella	4077	Brisbane	South East Queensland Water Supply Scheme
Drewvale	4116	Brisbane	South East Queensland Water Supply Scheme
Dugandan	4310	Scenic Rim	Boonah-Kalbar
Dundas	4306	Somerset	Not connected to the Urban Utilities network
Durack	4077	Brisbane	South East Queensland Water Supply Scheme
Dutton Park	4102	Brisbane	South East Queensland Water Supply Scheme
Eagle Farm	4009	Brisbane	South East Queensland Water Supply Scheme
East Brisbane	4169	Brisbane	South East Queensland Water Supply Scheme
East Haldon	4344	Lockyer Valley	Not connected to the Urban Utilities network
East Ipswich	4305	Ipswich	South East Queensland Water Supply Scheme

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Suburb	P/Code	Local Government Area	Water Supply Scheme
Eastern Heights	4305	Ipswich	South East Queensland Water Supply Scheme
Ebbw Vale	4304	Ipswich	South East Queensland Water Supply Scheme
Ebenezer	4304	Ipswich	South East Queensland Water Supply Scheme
Egypt	4352	Lockyer Valley	Not connected to the Urban Utilities network
Eight Mile Plains	4113	Brisbane	South East Queensland Water Supply Scheme
Ellen Grove	4078	Brisbane	South East Queensland Water Supply Scheme
England Creek	4306	Brisbane	South East Queensland Water Supply Scheme
England Creek	4306	Somerset	Not connected to the Urban Utilities network
Enoggera	4051	Brisbane	South East Queensland Water Supply Scheme
Enoggera Reservoir	4520	Brisbane	South East Queensland Water Supply Scheme
Esk	4312	Somerset	Esk-Toogoolawah
Eskdale	4312	Somerset	Not connected to the Urban Utilities network
Everton Park	4053	Brisbane	South East Queensland Water Supply Scheme
Fairfield	4103	Brisbane	South East Queensland Water Supply Scheme
Fairney View	4306	Somerset	Not connected to the Urban Utilities network
Fassifern	4309	Scenic Rim	Boonah-Kalbar
Fassifern Valley	4309	Scenic Rim	Boonah-Kalbar
Fernvale	4306	Somerset	Lowood
Ferny Glen	4275	Scenic Rim	Not connected to the Urban Utilities network
Ferny Grove	4055	Brisbane	South East Queensland Water Supply Scheme
Fifteen Mile	4344	Lockyer Valley	Not connected to the Urban Utilities network
Fig Tree Pocket	4069	Brisbane	South East Queensland Water Supply Scheme
Fitzgibbon	4018	Brisbane	South East Queensland Water Supply Scheme
Flagstone Creek	4343	Lockyer Valley	Not connected to the Urban Utilities network
Flinders	4305	Ipswich	South East Queensland Water Supply Scheme
Flying Fox	4275	Scenic Rim	Not connected to the Urban Utilities network
Fordsdale	4342	Lockyer Valley	Not connected to the Urban Utilities network
Forest Hill	4343	Lockyer Valley	Lowood
Forest Lake	4078	Brisbane	South East Queensland Water Supply Scheme
Fortitude Valley	4006	Brisbane	South East Queensland Water Supply Scheme
Frazerview	4309	Scenic Rim	Not connected to the Urban Utilities network
Frenches Creek	4310	Scenic Rim	Not connected to the Urban Utilities network
Gailes	4300	Ipswich	South East Queensland Water Supply Scheme
Gatton	4341	Lockyer Valley	Lowood
Gaythorne	4051	Brisbane	South East Queensland Water Supply Scheme
Geebung	4034	Brisbane	South East Queensland Water Supply Scheme

Suburb	P/Code	Local Government Area	Water Supply Scheme
Glamorganvale	4306	Somerset	Not connected to the Urban Utilities network
Glen Cairn	4342	Lockyer Valley	Not connected to the Urban Utilities network
Glen Esk	4312	Somerset	Esk-Toogoolawah
Glen Fern	4515	Somerset	Not connected to the Urban Utilities network
Gleneagle	4285	Scenic Rim	Beaudesert
Glenore Grove	4217	Lockyer Valley	Lowood
Goodna	4300	Ipswich	South East Queensland Water Supply Scheme
Goolman	4306	Ipswich	South East Queensland Water Supply Scheme
Gordon Park	4031	Brisbane	South East Queensland Water Supply Scheme
Graceville	4075	Brisbane	South East Queensland Water Supply Scheme
Grandchester	4340	Ipswich	South East Queensland Water Supply Scheme
Grange	4051	Brisbane	South East Queensland Water Supply Scheme
Grantham	4340	Lockyer Valley	Lowood
Greenslopes	4120	Brisbane	South East Queensland Water Supply Scheme
Gregors Creek	4313	Somerset	Not connected to the Urban Utilities network
Gumdale	4154	Brisbane	South East Queensland Water Supply Scheme
Haigslea	4306	Ipswich	South East Queensland Water Supply Scheme
Haigslea	4306	Somerset	Not connected to the Urban Utilities network
Hamilton	4007	Brisbane	South East Queensland Water Supply Scheme
Harlin	4306	Somerset	Not connected to the Urban Utilities network
Harrisville	4307	Scenic Rim	South East Queensland Water Supply Scheme
Hatton Vale	4341	Lockyer Valley	Lowood
Hawthorne	4171	Brisbane	South East Queensland Water Supply Scheme
Hazeldean	4515	Somerset	Not connected to the Urban Utilities network
Heathwood	4110	Brisbane	South East Queensland Water Supply Scheme
Helidon	4344	Lockyer Valley	Lowood
Helidon Spa	4343	Lockyer Valley	Lowood
Hemmant	4174	Brisbane	South East Queensland Water Supply Scheme
Hendra	4011	Brisbane	South East Queensland Water Supply Scheme
Herston	4006	Brisbane	South East Queensland Water Supply Scheme
Highgate Hill	4101	Brisbane	South East Queensland Water Supply Scheme
Hillview	4285	Scenic Rim	Not connected to the Urban Utilities network
Holland Park	4121	Brisbane	South East Queensland Water Supply Scheme
Holland Park West	4121	Brisbane	South East Queensland Water Supply Scheme
Hoya	4310	Scenic Rim	Boonah-Kalbar
Illinbah	4275	Scenic Rim	Not connected to the Urban Utilities network

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Suburb	P/Code	Local Government Area	Water Supply Scheme
Inala	4077	Brisbane	South East Queensland Water Supply Scheme
Indooroopilly	4068	Brisbane	South East Queensland Water Supply Scheme
Ingoldsby	4344	Lockyer Valley	Not connected to the Urban Utilities network
Innisplain	4285	Scenic Rim	Not connected to the Urban Utilities network
Ipswich	4305	Ipswich	South East Queensland Water Supply Scheme
Iredale	4343	Lockyer Valley	Lowood
Ironbark	4306	Ipswich	South East Queensland Water Supply Scheme
Ivory Creek	4313	Somerset	Not connected to the Urban Utilities network
Jamboree Heights	4074	Brisbane	South East Queensland Water Supply Scheme
Jeebropilly	4340	Ipswich	South East Queensland Water Supply Scheme
Jimna	4515	Somerset	Jimna
Jindalee	4074	Brisbane	South East Queensland Water Supply Scheme
Josephville	4285	Scenic Rim	Not connected to the Urban Utilities network
Junction View	4341	Lockyer Valley	Not connected to the Urban Utilities network
Kagaru	4285	Scenic Rim	Not connected to the Urban Utilities network
Kalbar	4309	Scenic Rim	Boonah-Kalbar
Kangaroo Point	4169	Brisbane	South East Queensland Water Supply Scheme
Karalee	4306	Ipswich	South East Queensland Water Supply Scheme
Karana Downs	4306	Brisbane	South East Queensland Water Supply Scheme
Karawatha	4117	Brisbane	South East Queensland Water Supply Scheme
Karrabin	4306	Ipswich	South East Queensland Water Supply Scheme
Kedron	4031	Brisbane	South East Queensland Water Supply Scheme
Kelvin Grove	4059	Brisbane	South East Queensland Water Supply Scheme
Kenmore	4069	Brisbane	South East Queensland Water Supply Scheme
Kenmore Hills	4069	Brisbane	South East Queensland Water Supply Scheme
Kensington Grove	4341	Lockyer Valley	Lowood
Kents Lagoon	4309	Scenic Rim	Not connected to the Urban Utilities network
Kents Pocket	4310	Scenic Rim	Boonah-Kalbar
Kentville	4341	Lockyer Valley	Not connected to the Urban Utilities network
Keperra	4054	Brisbane	South East Queensland Water Supply Scheme
Kerry	4285	Scenic Rim	Not connected to the Urban Utilities network
Kholo	4306	Brisbane	South East Queensland Water Supply Scheme
Kilcoy	4515	Somerset	Kilcoy
Kingaham	4515	Somerset	Not connected to the Urban Utilities network
Knapp Creek	4285	Scenic Rim	Not connected to the Urban Utilities network
Kooralbyn	4285	Scenic Rim	Kooralbyn

Suburb	P/Code	Local Government Area	Water Supply Scheme
Kooringal	4025	Brisbane	South East Queensland Water Supply Scheme
Kulgun	4309	Scenic Rim	Not connected to the Urban Utilities network
Kuraby	4112	Brisbane	South East Queensland Water Supply Scheme
Laidley	4343	Lockyer Valley	Lowood
Laidley Creek West	4341	Lockyer Valley	Not connected to the Urban Utilities network
Laidley Heights	4341	Lockyer Valley	Lowood
Laidley North	4341	Lockyer Valley	Lowood
Laidley South	4341	Lockyer Valley	Lowood
Lake Clarendon	4343	Lockyer Valley	Lowood
Lake Manchester	4306	Brisbane	South East Queensland Water Supply Scheme
Lake Manchester	4305	Somerset	Not connected to the Urban Utilities network
Lake Wivenhoe	4306	Somerset	Not connected to the Urban Utilities network
Lamington	4285	Scenic Rim	Not connected to the Urban Utilities network
Lanefield	4340	Ipswich	South East Queensland Water Supply Scheme
Larapinta	4110	Brisbane	South East Queensland Water Supply Scheme
Laravale	4285	Scenic Rim	Not connected to the Urban Utilities network
Lark Hill	4306	Somerset	Lowood
Lawes	4343	Lockyer Valley	Lowood
Lefthand Branch	4344	Lockyer Valley	Not connected to the Urban Utilities network
Leichhardt	4305	Ipswich	South East Queensland Water Supply Scheme
Lilydale	4342	Lockyer Valley	Not connected to the Urban Utilities network
Limestone Ridges	4305	Scenic Rim	Not connected to the Urban Utilities network
Linville	4306	Somerset	Linville
Lockrose	4344	Lockyer Valley	Lowood
Lockrose	4342	Somerset	Lowood
Lockyer	4311	Lockyer Valley	Lowood
Lockyer Waters	4343	Lockyer Valley	Not connected to the Urban Utilities network
Lota	4179	Brisbane	South East Queensland Water Supply Scheme
Lower Cressbrook	4313	Somerset	Not connected to the Urban Utilities network
Lower Mount Walker	4340	Ipswich	South East Queensland Water Supply Scheme
Lower Mount Walker	4340	Scenic Rim	Not connected to the Urban Utilities network
Lower Tenthill	4341	Lockyer Valley	Lowood
Lowood	4311	Somerset	Lowood
Lutwyche	4030	Brisbane	South East Queensland Water Supply Scheme
Lytton	4178	Brisbane	South East Queensland Water Supply Scheme
Ma Ma Creek	4343	Lockyer Valley	Not connected to the Urban Utilities network

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Suburb	P/Code	Local Government Area	Water Supply Scheme
Macgregor	4109	Brisbane	South East Queensland Water Supply Scheme
Mackenzie	4156	Brisbane	South East Queensland Water Supply Scheme
Manly	4179	Brisbane	South East Queensland Water Supply Scheme
Manly West	4179	Brisbane	South East Queensland Water Supply Scheme
Mansfield	4122	Brisbane	South East Queensland Water Supply Scheme
Marburg	4346	Ipswich	South East Queensland Water Supply Scheme
Marburg	4346	Somerset	Not connected to the Urban Utilities network
Maroon	4310	Scenic Rim	Not connected to the Urban Utilities network
Mcdowall	4053	Brisbane	South East Queensland Water Supply Scheme
Merryvale	4340	Scenic Rim	Not connected to the Urban Utilities network
Middle Park	4074	Brisbane	South East Queensland Water Supply Scheme
Milbong	4310	Scenic Rim	Not connected to the Urban Utilities network
Milford	4310	Scenic Rim	Boonah-Kalbar
Milora	4309	Scenic Rim	Not connected to the Urban Utilities network
Milton	4064	Brisbane	South East Queensland Water Supply Scheme
Minden	4311	Somerset	Lowood
Mitchelton	4053	Brisbane	South East Queensland Water Supply Scheme
Moggill	4070	Brisbane	South East Queensland Water Supply Scheme
Monsildale	4515	Somerset	Not connected to the Urban Utilities network
Moogerah	4309	Scenic Rim	Not connected to the Urban Utilities network
Moombra	4312	Somerset	Not connected to the Urban Utilities network
Moorang	4340	Scenic Rim	Not connected to the Urban Utilities network
Moore	4306	Somerset	Not connected to the Urban Utilities network
Moores Pocket	4305	Ipswich	South East Queensland Water Supply Scheme
Moorooka	4105	Brisbane	South East Queensland Water Supply Scheme
Moreton Island	4025	Brisbane	South East Queensland Water Supply Scheme
Morningside	4170	Brisbane	South East Queensland Water Supply Scheme
Morton Vale	4340	Lockyer Valley	Not connected to the Urban Utilities network
Morwincha	4309	Scenic Rim	Not connected to the Urban Utilities network
Mount Alford	4310	Scenic Rim	Boonah-Kalbar
Mount Archer	4701	Somerset	Not connected to the Urban Utilities network
Mount Barney	4287	Scenic Rim	Not connected to the Urban Utilities network
Mount Beppo	4313	Somerset	Not connected to the Urban Utilities network
Mount Berryman	4341	Lockyer Valley	Not connected to the Urban Utilities network
Mount Edwards	4309	Scenic Rim	Not connected to the Urban Utilities network
Mount Forbes	4340	Ipswich	South East Queensland Water Supply Scheme

Suburb	P/Code	Local Government Area	Water Supply Scheme
Mount Forbes	4340	Scenic Rim	Not connected to the Urban Utilities network
Mount French	4310	Scenic Rim	Boonah-Kalbar
Mount Gipps	4285	Scenic Rim	Not connected to the Urban Utilities network
Mount Kilcoy	4515	Somerset	Not connected to the Urban Utilities network
Mount Lindesay	4287	Scenic Rim	Not connected to the Urban Utilities network
Mount Marrow	4306	Ipswich	South East Queensland Water Supply Scheme
Mount Mort	4340	Ipswich	South East Queensland Water Supply Scheme
Mount Stanley	4313	Somerset	Not connected to the Urban Utilities network
Mount Tarampa	4311	Somerset	Not connected to the Urban Utilities network
Mount Walker	4340	Scenic Rim	Not connected to the Urban Utilities network
Mount Walker West	4340	Ipswich	South East Queensland Water Supply Scheme
Mount Walker West	4340	Scenic Rim	Not connected to the Urban Utilities network
Mt Byron	4312	Somerset	Not connected to the Urban Utilities network
Mt Coot-tha	4066	Brisbane	South East Queensland Water Supply Scheme
Mt Crosby	4306	Brisbane	South East Queensland Water Supply Scheme
Mt Gravatt	4122	Brisbane	South East Queensland Water Supply Scheme
Mt Gravatt East	4122	Brisbane	South East Queensland Water Supply Scheme
Mt Hallen	4312	Somerset	Not connected to the Urban Utilities network
Mt Ommaney	4074	Brisbane	South East Queensland Water Supply Scheme
Mt Sylvia	4311	Lockyer Valley	Not connected to the Urban Utilities network
Mt Tarampa	4311	Somerset	Somerset
Mt Whitestone	4352	Lockyer Valley	Not connected to the Urban Utilities network
Muirlea	4306	Ipswich	South East Queensland Water Supply Scheme
Mulgowie	4343	Lockyer Valley	Not connected to the Urban Utilities network
Munbilla	4309	Scenic Rim	Not connected to the Urban Utilities network
Murarrie	4172	Brisbane	South East Queensland Water Supply Scheme
Murphys Creek	4341	Lockyer Valley	Lowood
Murrumba	4312	Somerset	Not connected to the Urban Utilities network
Mutdapilly	4307	Scenic Rim	South East Queensland Water Supply Scheme
Mutdapilly	4307	Ipswich	South East Queensland Water Supply Scheme
Nathan	4111	Brisbane	South East Queensland Water Supply Scheme
New Chum	4303	Ipswich	South East Queensland Water Supply Scheme
New Farm	4005	Brisbane	South East Queensland Water Supply Scheme
Newmarket	4051	Brisbane	South East Queensland Water Supply Scheme
Newstead	4006	Brisbane	South East Queensland Water Supply Scheme
Newtown	4305	Ipswich	South East Queensland Water Supply Scheme

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Suburb	P/Code	Local Government Area	Water Supply Scheme
Nindooinbah	4285	Scenic Rim	Not connected to the Urban Utilities network
Norman Park	4170	Brisbane	South East Queensland Water Supply Scheme
North Booval	4304	Ipswich	South East Queensland Water Supply Scheme
North Ipswich	4305	Ipswich	South East Queensland Water Supply Scheme
North Tivoli	4305	Ipswich	South East Queensland Water Supply Scheme
Northgate	4013	Brisbane	South East Queensland Water Supply Scheme
Nudgee	4014	Brisbane	South East Queensland Water Supply Scheme
Nudgee Beach	4014	Brisbane	South East Queensland Water Supply Scheme
Nundah	4012	Brisbane	South East Queensland Water Supply Scheme
Oaky Creek	4285	Scenic Rim	Not connected to the Urban Utilities network
Obum Obum	4309	Scenic Rim	Boonah-Kalbar
One Mile	4305	Ipswich	South East Queensland Water Supply Scheme
O'reilly	4211	Scenic Rim	Not connected to the Urban Utilities network
Ottaba	4313	Somerset	Not connected to the Urban Utilities network
Oxley	4075	Brisbane	South East Queensland Water Supply Scheme
Paddington	4064	Brisbane	South East Queensland Water Supply Scheme
Palen Creek	4287	Scenic Rim	Not connected to the Urban Utilities network
Pallara	4110	Brisbane	South East Queensland Water Supply Scheme
Parkinson	4115	Brisbane	South East Queensland Water Supply Scheme
Patrick Estate	4311	Somerset	Not connected to the Urban Utilities network
Peak Crossing	4306	Scenic Rim	South East Queensland Water Supply Scheme
Petrie Terrace	4000	Brisbane	South East Queensland Water Supply Scheme
Pine Mountain	4306	Ipswich	South East Queensland Water Supply Scheme
Pinjarra Hills	4069	Brisbane	South East Queensland Water Supply Scheme
Pinkenba	4008	Brisbane	South East Queensland Water Supply Scheme
Placid Hills	4352	Lockyer Valley	Lowood
Plainland	4311	Lockyer Valley	Lowood
Port of Brisbane	4178	Brisbane	South East Queensland Water Supply Scheme
Postmans Ridge	4352	Lockyer Valley	Lowood
Prenzlau	4311	Somerset	Lowood
Prenzlau	4311	Somerset	Lowood
Preston	4343	Lockyer Valley	Not connected to the Urban Utilities network
Pullenvale	4069	Brisbane	South East Queensland Water Supply Scheme
Purga	4306	Ipswich	South East Queensland Water Supply Scheme
Raceview	4305	Ipswich	South East Queensland Water Supply Scheme
Radford	4307	Scenic Rim	Not connected to the Urban Utilities network

Suburb	P/Code	Local Government Area	Water Supply Scheme
Ransome	4154	Brisbane	South East Queensland Water Supply Scheme
Rathdowney	4287	Scenic Rim	Rathdowney
Red Hill	4059	Brisbane	South East Queensland Water Supply Scheme
Redbank	4301	Ipswich	South East Queensland Water Supply Scheme
Redbank Creek	4312	Somerset	Not connected to the Urban Utilities network
Redbank Plains	4301	Ipswich	South East Queensland Water Supply Scheme
Regency Downs	4344	Lockyer Valley	Lowood
Richlands	4077	Brisbane	South East Queensland Water Supply Scheme
Rifle Range	4311	Somerset	Lowood
Ringwood	4343	Lockyer Valley	Not connected to the Urban Utilities network
Ripley	4306	Ipswich	South East Queensland Water Supply Scheme
Riverhills	4074	Brisbane	South East Queensland Water Supply Scheme
Riverview	4303	Ipswich	South East Queensland Water Supply Scheme
Roadvale	4310	Scenic Rim	Not connected to the Urban Utilities network
Robertson	4109	Brisbane	South East Queensland Water Supply Scheme
Rochedale	4123	Brisbane	South East Queensland Water Supply Scheme
Rocklea	4106	Brisbane	South East Queensland Water Supply Scheme
Rockmount	4343	Lockyer Valley	Not connected to the Urban Utilities network
Rockside	4340	Lockyer Valley	Not connected to the Urban Utilities network
Ropeley	4344	Lockyer Valley	Not connected to the Urban Utilities network
Rosevale	4340	Scenic Rim	Not connected to the Urban Utilities network
Rosewood	4340	Ipswich	South East Queensland Water Supply Scheme
Runcorn	4113	Brisbane	South East Queensland Water Supply Scheme
Running Creek	4287	Scenic Rim	Not connected to the Urban Utilities network
Sadliers Crossing	4305	Ipswich	South East Queensland Water Supply Scheme
Salisbury	4107	Brisbane	South East Queensland Water Supply Scheme
Sandgate	4017	Brisbane	South East Queensland Water Supply Scheme
Sandy Creek	4570	Somerset	Not connected to the Urban Utilities network
Sarabah	4275	Scenic Rim	Not connected to the Urban Utilities network
Scrub Creek	4313	Somerset	Not connected to the Urban Utilities network
Seven Hills	4170	Brisbane	South East Queensland Water Supply Scheme
Seventeen Mile	4343	Lockyer Valley	Not connected to the Urban Utilities network
Seventeen Mile Rocks	4073	Brisbane	South East Queensland Water Supply Scheme
Sheep Station Creek	4515	Somerset	Kilcoy
Sherwood	4075	Brisbane	South East Queensland Water Supply Scheme
Shorncliffe	4017	Brisbane	South East Queensland Water Supply Scheme

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Suburb	P/Code	Local Government Area	Water Supply Scheme
Silkstone	4304	Ipswich	South East Queensland Water Supply Scheme
Silver Ridge	4344	Lockyer Valley	Not connected to the Urban Utilities network
Silverdale	4307	Scenic Rim	Not connected to the Urban Utilities network
Sinnamon Park	4073	Brisbane	South East Queensland Water Supply Scheme
Somerset Dam	4312	Somerset	Somerset
South Brisbane	4101	Brisbane	South East Queensland Water Supply Scheme
South Ripley	4306	Ipswich	South East Queensland Water Supply Scheme
Southern Lamington	4211	Scenic Rim	Not connected to the Urban Utilities network
Split Yard Creek	4306	Somerset	Not connected to the Urban Utilities network
Spring Creek	4340	Lockyer Valley	Lowood
Spring Hill	4000	Brisbane	South East Queensland Water Supply Scheme
Spring Mountain	4300	Ipswich	South East Queensland Water Supply Scheme
Springfield	4300	Ipswich	South East Queensland Water Supply Scheme
Springfield Central	4300	Ipswich	South East Queensland Water Supply Scheme
Springfield Lakes	4300	Ipswich	South East Queensland Water Supply Scheme
St Lucia	4067	Brisbane	South East Queensland Water Supply Scheme
Stafford	4053	Brisbane	South East Queensland Water Supply Scheme
Stafford Heights	4053	Brisbane	South East Queensland Water Supply Scheme
Stockyard	4344	Lockyer Valley	Not connected to the Urban Utilities network
Stretton	4116	Brisbane	South East Queensland Water Supply Scheme
Summerholm	4341	Lockyer Valley	Not connected to the Urban Utilities network
Sumner	4074	Brisbane	South East Queensland Water Supply Scheme
Sunnybank	4109	Brisbane	South East Queensland Water Supply Scheme
Sunnybank Hills	4109	Brisbane	South East Queensland Water Supply Scheme
Swanbank	4306	Ipswich	South East Queensland Water Supply Scheme
Tabooba	4285	Scenic Rim	Not connected to the Urban Utilities network
Tabragalba	4285	Scenic Rim	Not connected to the Urban Utilities network
Taigum	4018	Brisbane	South East Queensland Water Supply Scheme
Tallegalla	4340	Ipswich	South East Queensland Water Supply Scheme
Tamborine	4270	Scenic Rim	Not connected to the Urban Utilities network
Tamborine Mountain	4272	Scenic Rim	Not connected to the Urban Utilities network
Tamrookum	4285	Scenic Rim	Not connected to the Urban Utilities network
Tamrookum Creek	4285	Scenic Rim	Not connected to the Urban Utilities network
Tarampa	4311	Somerset	Lowood
Taringa	4068	Brisbane	South East Queensland Water Supply Scheme
Tarome	4309	Scenic Rim	Not connected to the Urban Utilities network

Suburb	P/Code	Local Government Area	Water Supply Scheme
Tarragindi	4121	Brisbane	South East Queensland Water Supply Scheme
Templin	4310	Scenic Rim	Boonah-Kalbar
Teneriffe	4005	Brisbane	South East Queensland Water Supply Scheme
Tennyson	4105	Brisbane	South East Queensland Water Supply Scheme
Teviotville	4309	Scenic Rim	Boonah-Kalbar
Thagoona	4306	Ipswich	South East Queensland Water Supply Scheme
The Bluff	4340	Ipswich	South East Queensland Water Supply Scheme
The Gap	4061	Brisbane	South East Queensland Water Supply Scheme
Thornton	4344	Lockyer Valley	Not connected to the Urban Utilities network
Tingalpa	4173	Brisbane	South East Queensland Water Supply Scheme
Tivoli	4305	Ipswich	South East Queensland Water Supply Scheme
Toogoolawah	4313	Somerset	Esk-Toogoolawah
Toowong	4066	Brisbane	South East Queensland Water Supply Scheme
Townson	4352	Lockyer Valley	Not connected to the Urban Utilities network
Undullah	4285	Scenic Rim	Not connected to the Urban Utilities network
Upper Brookfield	4069	Brisbane	South East Queensland Water Supply Scheme
Upper Flagstone	4343	Lockyer Valley	Not connected to the Urban Utilities network
Upper Kedron	4055	Brisbane	South East Queensland Water Supply Scheme
Upper Lockyer	4347	Lockyer Valley	Not connected to the Urban Utilities network
Upper Mt Gravatt	4122	Brisbane	South East Queensland Water Supply Scheme
Upper Tenthill	4343	Lockyer Valley	Not connected to the Urban Utilities network
Veradilla	4359	Lockyer Valley	Lowood
Veresdale	4285	Scenic Rim	Not connected to the Urban Utilities network
Veresdale Scrub	4285	Scenic Rim	Not connected to the Urban Utilities network
Vernor	4306	Somerset	Lowood
Villeneuve	4514	Somerset	Not connected to the Urban Utilities network
Vinegar Hill	4352	Lockyer Valley	Not connected to the Urban Utilities network
Virginia	4014	Brisbane	South East Queensland Water Supply Scheme
Wacol	4076	Brisbane	South East Queensland Water Supply Scheme
Wakerley	4154	Brisbane	South East Queensland Water Supply Scheme
Wallaces Creek	4310	Scenic Rim	Not connected to the Urban Utilities network
Walloon	4306	Ipswich	South East Queensland Water Supply Scheme
Wanora	4306	Somerset	Not connected to the Urban Utilities network
Warrill View	4307	Scenic Rim	South East Queensland Water Supply Scheme
Washpool	4306	Scenic Rim	Not connected to the Urban Utilities network
Wavell Heights	4012	Brisbane	South East Queensland Water Supply Scheme

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Suburb	P/Code	Local Government Area	Water Supply Scheme
West End	4101	Brisbane	South East Queensland Water Supply Scheme
West Haldon	4347	Lockyer Valley	Not connected to the Urban Utilities network
West Ipswich	4305	Ipswich	South East Queensland Water Supply Scheme
Westlake	4074	Brisbane	South East Queensland Water Supply Scheme
White Mountain	4352	Lockyer Valley	Not connected to the Urban Utilities network
White Rock	4306	Ipswich	South East Queensland Water Supply Scheme
Willawong	4110	Brisbane	South East Queensland Water Supply Scheme
Willowbank	4306	Ipswich	South East Queensland Water Supply Scheme
Wilsons Plains	4307	Scenic Rim	Not connected to the Urban Utilities network
Wilston	4051	Brisbane	South East Queensland Water Supply Scheme
Windsor	4030	Brisbane	South East Queensland Water Supply Scheme
Winwill	4343	Lockyer Valley	Not connected to the Urban Utilities network
Winya	4515	Somerset	Kilcoy
Wishart	4122	Brisbane	South East Queensland Water Supply Scheme
Withcott	4343	Lockyer Valley	Lowood
Witheren	4275	Scenic Rim	Not connected to the Urban Utilities network
Wivenhoe Hill	4311	Somerset	Not connected to the Urban Utilities network
Wivenhoe Pocket	4306	Somerset	Not connected to the Urban Utilities network
Wonglepong	4275	Scenic Rim	Not connected to the Urban Utilities network
Woodbine	4343	Lockyer Valley	Not connected to the Urban Utilities network
Woodend	4305	Ipswich	South East Queensland Water Supply Scheme
Woodlands	4343	Lockyer Valley	Not connected to the Urban Utilities network
Woolloongabba	4102	Brisbane	South East Queensland Water Supply Scheme
Woolmar	4515	Somerset	Kilcoy
Woolooman	4310	Scenic Rim	Not connected to the Urban Utilities network
Wooloowin	4030	Brisbane	South East Queensland Water Supply Scheme
Woolshed	4340	Ipswich	South East Queensland Water Supply Scheme
Wulkuraka	4305	Ipswich	South East Queensland Water Supply Scheme
Wyaralong	4310	Scenic Rim	Not connected to the Urban Utilities network
Wynnum	4178	Brisbane	South East Queensland Water Supply Scheme
Wynnum West	4178	Brisbane	South East Queensland Water Supply Scheme
Yamanto	4305	Ipswich	South East Queensland Water Supply Scheme
Yeerongpilly	4105	Brisbane	South East Queensland Water Supply Scheme
Yeronga	4104	Brisbane	South East Queensland Water Supply Scheme
Yimbun	4313	Somerset	Not connected to the Urban Utilities network
Zillmere	4034	Brisbane	South East Queensland Water Supply Scheme

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APPENDIX B: 2020-21 WATER QUALITY COMPLIANCE – *E. COLI*

All water supply schemes						
Scheme	**Number of samples required**	**Actual Number of Samples**	**Number of samples *E.coli* detected**	**Required Performance (%)**	**Actual Performance (%)**	**Compliant**
Beaudesert	65	305	0	98	100	☑
Boonah-Kalbar	53	360	0	98	100	☑
Canungra	53	105	1	98	99	☑
Esk-Toogoolawah	53	156	0	98	100	☑
Jimna	12	52	0	98	100	☑
Kilcoy	53	104	0	98	100	☑
Kooralbyn	53	156	0	98	100	☑
Linville	12	52	0	98	100	☑
Lowood	125	1564	1	98	99.9	☑
Rathdowney	12	52	0	98	100	☑
SEQWSS	1734	8649	13*	98	99.7	☑
Somerset	12	52	0	98	100	☑

*This table is compiled from data that resides in the Treatment Plant Licence Compliance (TPLC) database, which is generated by our VMP. While we recorded seven detections of *E. coli* in the SEWQSS the detections at Mitchelton (2) and Marburg (3) were reported to the Regulator as one incident, respectively (see pages xx and xx).

Beaudesert *E.coli*						
2020 - 2021 Month	**Number of samples required**	**Actual Number of Samples**	**Number of samples *E.coli* detected**	**Required Performance (%)**	**Actual Performance (%)**	**Compliant**
July	6	29	0	98	100	☑
August	5	23	0	98	100	☑
September	6	29	0	98	100	☑
October	5	22	0	98	100	☑
November	5	23	0	98	100	☑
December	6	29	0	98	100	☑
January	5	23	0	98	100	☑
February	5	23	0	98	100	☑
March	6	23	0	98	100	☑
April	5	28	0	98	100	☑
May	5	24	0	98	100	☑
June	6	29	0	98	100	☑

Boonah-Kalbar *E.coli*						
2020 - 2021 Month	**Number of samples required**	**Actual Number of Samples**	**Number of samples *E.coli* detected**	**Required Performance (%)**	**Actual Performance (%)**	**Compliant**
July	5	28	0	98	100	☑
August	4	30	0	98	100	☑
September	5	27	0	98	100	☑
October	4	33	0	98	100	☑
November	4	28	0	98	100	☑
December	5	35	0	98	100	☑
January	4	28	0	98	100	☑
February	4	28	0	98	100	☑
March	5	34	0	98	100	☑
April	4	28	0	98	100	☑
May	4	27	0	98	100	☑
June	5	34	0	98	100	☑

Canungra *E.coli*						
2020 - 2021 Month	**Number of samples required**	**Actual Number of Samples**	**Number of samples *E.coli* detected**	**Required Performance (%)**	**Actual Performance (%)**	**Compliant**
July	5	10	0	98	100	☑
August	4	8	0	98	100	☑
September	5	10	0	98	100	☑
October	4	8	0	98	100	☑
November	4	8	0	98	100	☑
December	5	10	1	98	99.1	☑
January	4	8	0	98	99	☑
February	4	8	0	98	99	☑
March	5	8	0	98	99	☑
April	4	9	0	98	99	☑
May	4	8	0	98	99	☑
June	5	10	0	98	99	☑

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Esk-Toogoolawah *E.coli*						
2020 - 2021 Month	**Number of samples required**	**Actual Number of Samples**	**Number of samples *E.coli* detected**	**Required Performance (%)**	**Actual Performance (%)**	**Compliant**
July	5	12	0	98	100	☑
August	4	12	0	98	100	☑
September	5	15	0	98	100	☑
October	4	12	0	98	100	☑
November	4	12	0	98	100	☑
December	5	15	0	98	100	☑
January	4	12	0	98	100	☑
February	4	12	0	98	100	☑
March	5	12	0	98	100	☑
April	4	15	0	98	100	☑
May	4	15	0	98	100	☑
June	5	12	0	98	100	☑

Jimna *E.coli*						
2020 - 2021 Month	**Number of samples required**	**Actual Number of Samples**	**Number of samples *E.coli* detected**	**Required Performance (%)**	**Actual Performance (%)**	**Compliant**
July	1	4	0	98	100	☑
August	1	4	0	98	100	☑
September	1	5	0	98	100	☑
October	1	4	0	98	100	☑
November	1	4	0	98	100	☑
December	1	5	0	98	100	☑
January	1	4	0	98	100	☑
February	1	4	0	98	100	☑
March	1	4	0	98	100	☑
April	1	5	0	98	100	☑
May	1	5	0	98	100	☑
June	1	4	0	98	100	☑

Kilcoy *E.coli*						
2020 - 2021 Month	**Number of samples required**	**Actual Number of Samples**	**Number of samples *E.coli* detected**	**Required Performance (%)**	**Actual Performance (%)**	**Compliant**
July	5	8	0	98	100	☑
August	4	8	0	98	100	☑
September	5	10	0	98	100	☑
October	4	8	0	98	100	☑
November	4	8	0	98	100	☑
December	5	10	0	98	100	☑
January	4	8	0	98	100	☑
February	4	8	0	98	100	☑
March	5	8	0	98	100	☑
April	4	10	0	98	100	☑
May	4	10	0	98	100	☑
June	5	8	0	98	100	☑

Kooralbyn *E.coli*						
2020 - 2021 Month	**Number of samples required**	**Actual Number of Samples**	**Number of samples *E.coli* detected**	**Required Performance (%)**	**Actual Performance (%)**	**Compliant**
July	5	12	0	98	100	☑
August	4	15	0	98	100	☑
September	5	12	0	98	100	☑
October	4	12	0	98	100	☑
November	4	12	0	98	100	☑
December	5	15	0	98	100	☑
January	4	12	0	98	100	☑
February	4	12	0	98	100	☑
March	5	12	0	98	100	☑
April	4	15	0	98	100	☑
May	4	12	0	98	100	☑
June	5	15	0	98	100	☑

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Linville *E.coli*						
2020 - 2021 Month	**Number of samples required**	**Actual Number of Samples**	**Number of samples *E.coli* detected**	**Required Performance (%)**	**Actual Performance (%)**	**Compliant**
July	1	4	0	98	100	☑
August	1	4	0	98	100	☑
September	1	5	0	98	100	☑
October	1	4	0	98	100	☑
November	1	4	0	98	100	☑
December	1	5	0	98	100	☑
January	1	4	0	98	100	☑
February	1	4	0	98	100	☑
March	1	4	0	98	100	☑
April	1	5	0	98	100	☑
May	1	5	0	98	100	☑
June	1	4	0	98	100	☑

Lowood *E.coli*						
2020 - 2021 Month	**Number of samples required**	**Actual Number of Samples**	**Number of samples *E.coli* detected**	**Required Performance (%)**	**Actual Performance (%)**	**Compliant**
July	11	150	0	98	99.9	☑
August	10	128	0	98	99.9	☑
September	11	141	0	98	99.9	☑
October	10	119	0	98	99.9	☑
November	10	120	1	98	99.7	☑
December	11	147	0	98	99.7	☑
January	10	116	0	98	99.7	☑
February	10	117	0	98	99.9	☑
March	11	131	0	98	99.9	☑
April	10	125	0	98	99.9	☑
May	10	120	0	98	99.9	☑
June	11	150	0	98	99.9	☑

Rathdowney *E.coli*						
2020 - 2021 Month	**Number of samples required**	**Actual Number of Samples**	**Number of samples *E.coli* detected**	**Required Performance (%)**	**Actual Performance (%)**	**Compliant**
July	1	4	0	98	100	☑
August	1	5	0	98	100	☑
September	1	4	0	98	100	☑
October	1	4	0	98	100	☑
November	1	4	0	98	100	☑
December	1	5	0	98	100	☑
January	1	4	0	98	100	☑
February	1	4	0	98	100	☑
March	1	4	0	98	100	☑
April	1	5	0	98	100	☑
May	1	4	0	98	100	☑
June	1	5	0	98	100	☑

South East Queensland Water Supply *E.coli*						
2020 - 2021 Month	**Number of samples required**	**Actual Number of Samples**	**Number of samples *E.coli* detected**	**Required Performance (%)**	**Actual Performance (%)**	**Compliant**
July	148	753	0	98	99.8	☑
August	142	720	0	98	99.8	☑
September	148	739	0	98	99.8	☑
October	142	698	0	98	99.8	☑
November	142	698	0	98	99.8	☑
December	148	793	2	98	99.8	☑
January	142	668	0	98	99.8	☑
February	142	662	2	98	99.7	☑
March	148	768	2*	98	99.8	☑
April	142	673	3	98	99.7	☑
May	142	736	3*	98	99.7	☑
June	148	741	1	98	99.7	☑

*This table is compiled from data that resides in the Treatment Plant Licence Compliance (TPLC) database, which is generated by our VMP. While we recorded seven detections of *E. coli* in the SEWQSS the detections at Mitchelton (2 in March 2021) and Marburg (3 in May 2021) were reported to the Regulator as one incident, respectively (see pages xx and xx).

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Somerset *E.coli*						
2020 - 2021 Month	**Number of samples required**	**Actual Number of Samples**	**Number of samples *E.coli* detected**	**Required Performance (%)**	**Actual Performance (%)**	**Compliant**
July	1	4	0	98	100	☑
August	1	4	0	98	100	☑
September	1	5	0	98	100	☑
October	1	4	0	98	100	☑
November	1	4	0	98	100	☑
December	1	5	0	98	100	☑
January	1	4	0	98	100	☑
February	1	4	0	98	100	☑
March	1	4	0	98	100	☑
April	1	5	0	98	100	☑
May	1	5	0	98	100	☑
June	1	4	0	98	100	☑


SASLaboratory
QUEENSLAND
Urban Utilities

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APPENDIX C: 2020-21- WATER QUALITY COMPLIANCE – HEALTH ASSESSMENT

Beaudesert Health Assessment

Parameter	Units	ADWG Health Guideline	Number of tests	Exceedence Count	Maximum Result	95th %-ile	Meets ADWG
Arsenic	mg/L	0.01	8	0	<0.001	<0.001	☑
Barium	mg/L	2	8	0	0.039	0.038	☑
Cadmium	mg/L	0.002	8	0	<0.001	<0.001	☑
Chlorine (Free)	mg/L	5	305	0	2.8	2.1	☑
Chlorine (Total)	mg/L	5	305	0	2.9	2.3	☑
Chromium	mg/L	0.05	8	0	<0.001	<0.001	☑
Copper	mg/L	2	8	0	0.014	0.012	☑
Dichloroacetic Acid	ug/L	100	8	0	42	39	☑
Fluoride	mg/L	1.5	14	0	1.0	0.91	☑
Lead	mg/L	0.01	8	0	<0.001	<0.001	☑
Manganese	mg/L	0.5	104	0	0.002	<0.001	☑
Monochloroacetic Acid	ug/L	150	8	0	<10	<10	☑
Nickel	mg/L	0.02	8	0	<0.001	<0.001	☑
Trichloroacetic Acid	ug/L	100	8	0	29	28	☑
Trihalomethanes (Total)	ug/L	250	190	0	220	150	☑

Boonah-Kalbar Health Assessment

Parameter	Units	ADWG Health Guideline	Number of tests	Exceedence Count	Maximum Result	95th %-ile	Meets ADWG
Arsenic	mg/L	0.01	4	0	<0.001	<0.001	☑
Barium	mg/L	2	4	0	0.044	0.043	☑
Cadmium	mg/L	0.002	4	0	<0.001	<0.001	☑
Chlorine (Free)	mg/L	5	360	0	2.8	1.9	☑
Chlorine (Total)	mg/L	5	360	0	3.3	2.4	☑
Chromium	mg/L	0.05	4	0	<0.001	<0.001	☑
Copper	mg/L	2	4	0	<0.001	<0.001	☑
Dichloroacetic Acid	ug/L	100	11	0	36	35	☑
Fluoride	mg/L	1.5	13	0	0.96	0.92	☑
Lead	mg/L	0.01	4	0	<0.001	<0.001	☑
Manganese	mg/L	0.5	128	0	0.012	<0.001	☑
Monochloroacetic Acid	ug/L	150	11	0	<10	<10	☑
Nickel	mg/L	0.02	4	0	<0.001	<0.001	☑
Trichloroacetic Acid	ug/L	100	11	0	32	29	☑
Trihalomethanes (Total)	ug/L	250	51	0	180	160	☑

Canungra Health Assessment

Parameter	Units	ADWG Health Guideline	Number of tests	Exceedence Count	Maximum Result	95th %-ile	Meets ADWG
Arsenic	mg/L	0.01	4	0	<0.001	<0.001	☑
Barium	mg/L	2	4	0	0.007	0.007	☑
Cadmium	mg/L	0.002	4	0	<0.001	<0.001	☑
Chlorine (Free)	mg/L	5	105	0	2.9	2.6	☑
Chlorine (Total)	mg/L	5	105	0	3.1	2.8	☑
Chromium	mg/L	0.05	4	0	<0.001	<0.001	☑
Copper	mg/L	2	4	0	0.001	<0.001	☑
Dichloroacetic Acid	ug/L	150	4	0	27	26	☑
Fluoride	mg/L	1.5	14	0	1.1	0.96	☑
Lead	mg/L	0.01	4	0	<0.001	<0.001	☑
Manganese	mg/L	0.5	53	0	0.011	0.009	☑
Monochloroacetic Acid	ug/L	100	4	0	<10	<10	☑
Nickel	mg/L	0.02	4	0	<0.001	<0.001	☑
Trichloroacetic Acid	ug/L	150	4	0	25	24	☑
Trihalomethanes (Total)	ug/L	250	14	0	92	92	☑

Esk-Toogoolawah Health Assessment

Parameter	Units	ADWG Health Guideline	Number of tests	Exceedence Count	Maximum Result	95th %-ile	Meets ADWG
Arsenic	mg/L	0.01	4	0	<0.001	<0.001	☑
Barium	mg/L	2	4	0	0.035	0.035	☑
Cadmium	mg/L	0.002	4	0	<0.001	<0.001	☑
Chlorine (Free)	mg/L	5	156	0	4	2	☑
Chlorine (Total)	mg/L	5	156	0	4.5	2.4	☑
Chromium	mg/L	0.05	4	0	<0.001	<0.001	☑
Copper	mg/L	2	4	0	0.003	0.003	☑
Dichloroacetic Acid	ug/L	100	4	0	17	16	☑
Fluoride	mg/L	1.5	13	0	0.94	0.93	☑
Lead	mg/L	0.01	4	0	<0.001	<0.001	☑
Manganese	mg/L	0.5	104	0	0.025	0.004	☑
Monochloroacetic Acid	ug/L	150	4	0	<10	<10	☑
Nickel	mg/L	0.02	4	0	<0.001	<0.001	☑
Trichloroacetic Acid	ug/L	100	4	0	<8	<8	☑
Trihalomethanes (Total)	ug/L	250	18	0	150	150	☑

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Jimna Health Assessment							
Parameter	Units	ADWG Health Guideline	Number of tests	Exceedence Count	Maximum Result	95th %-ile	Meets ADWG
Arsenic	mg/L	0.01	4	0	<0.001	<0.001	☑
Barium	mg/L	2	4	0	0.020	0.020	☑
Cadmium	mg/L	0.002	4	0	<0.001	<0.001	☑
Chlorine (Free)	mg/L	5	52	0	2.9	2.4	☑
Chlorine (Total)	mg/L	5	52	0	3.1	2.7	☑
Chromium	mg/L	0.05	4	0	<0.001	<0.001	☑
Copper	mg/L	2	4	0	0.005	0.005	☑
Dichloroacetic Acid	ug/L	100	4	0	34	33	☑
Fluoride	mg/L	1.5	13	0	0.83	0.63	☑
Lead	mg/L	0.01	4	0	<0.001	<0.001	☑
Manganese	mg/L	0.5	52	0	0.024	0.007	☑
Monochloroacetic Acid	ug/L	150	4	0	<10	<10	☑
Nickel	mg/L	0.02	4	0	<0.001	<0.001	☑
Trichloroacetic Acid	ug/L	100	4	0	48	45	☑
Trihalomethanes (Total)	ug/L	250	20	1	290	250	☑

Kilcoy Health Assessment							
Parameter	Units	ADWG Health Guideline	Number of tests	Exceedence Count	Maximum Result	95th %-ile	Meets ADWG
Arsenic	mg/L	0.01	4	0	<0.001	<0.001	☑
Barium	mg/L	2	4	0	0.023	0.022	☑
Cadmium	mg/L	0.002	4	0	<0.001	<0.001	☑
Chlorine (Free)	mg/L	5	104	0	1.8	1.5	☑
Chlorine (Total)	mg/L	5	104	0	2.2	1.9	☑
Chromium	mg/L	0.05	4	0	<0.001	<0.001	☑
Copper	mg/L	2	4	0	0.009	0.008	☑
Dichloroacetic Acid	ug/L	100	4	0	24	23	☑
Fluoride	mg/L	1.5	13	0	0.89	0.88	☑
Lead	mg/L	0.01	4	0	<0.001	<0.001	☑
Manganese	mg/L	0.5	52	0	0.200	0.003	☑
Monochloroacetic Acid	ug/L	150	4	0	<10	<10	☑
Nickel	mg/L	0.02	4	0	0.001	0.001	☑
Trichloroacetic Acid	ug/L	100	4	0	20	19	☑
Trihalomethanes (Total)	ug/L	250	20	0	160	150	☑

Kooralbyn Health Assessment

Parameter	Units	ADWG Health Guideline	Number of tests	Exceedence Count	Maximum Result	95th %-ile	Meets ADWG
Arsenic	mg/L	0.01	4	0	<0.001	<0.001	☑
Barium	mg/L	2	4	0	0.029	0.029	☑
Cadmium	mg/L	0.002	4	0	<0.001	<0.001	☑
Chlorine (Free)	mg/L	5	156	0	3.5	2.3	☑
Chlorine (Total)	mg/L	5	156	0	3.6	2.5	☑
Chromium	mg/L	0.05	4	0	<0.001	<0.001	☑
Copper	mg/L	2	4	0	0.002	0.002	☑
Dichloroacetic Acid	ug/L	100	4	0	22	22	☑
Fluoride	mg/L	1.5	13	0	1.1	0.96	☑
Lead	mg/L	0.01	4	0	<0.001	<0.001	☑
Manganese	mg/L	0.5	52	0	0.004	0.003	☑
Monochloroacetic Acid	ug/L	150	4	0	<10	<10	☑
Nickel	mg/L	0.02	4	0	<0.001	<0.001	☑
Trichloroacetic Acid	ug/L	100	4	0	14	14	☑
Trihalomethanes (Total)	ug/L	250	52	0	120	110	☑

Linville Health Assessment

Parameter	Units	ADWG Health Guideline	Number of tests	Exceedence Count	Maximum Result	95th %-ile	Meets ADWG
Arsenic	mg/L	0.01	4	0	<0.001	<0.001	☑
Barium	mg/L	2	4	0	0.031	0.030	☑
Cadmium	mg/L	0.002	4	0	<0.001	<0.001	☑
Chlorine (Free)	mg/L	5	52	0	3.1	2.8	☑
Chlorine (Total)	mg/L	5	52	0	3.2	3.0	☑
Chromium	mg/L	0.05	4	0	<0.001	<0.001	☑
Copper	mg/L	2	4	0	0.007	0.007	☑
Dichloroacetic Acid	ug/L	100	4	0	<10	<10	☑
Fluoride	mg/L	1.5	12	0	0.74	0.60	☑
Lead	mg/L	0.01	4	0	<0.001	<0.001	☑
Manganese	mg/L	0.5	52	0	0.001	<0.001	☑
Monochloroacetic Acid	ug/L	150	4	0	<10	<10	☑
Nickel	mg/L	0.02	4	0	<0.001	<0.001	☑
Trichloroacetic Acid	ug/L	100	4	0	<8	<8	☑
Trihalomethanes (Total)	ug/L	250	20	0	100	76	☑

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Lowood Health Assessment

Parameter	Units	ADWG Health Guideline	Number of tests	Exceedence Count	Maximum Result	95th %-ile	Meets ADWG
Arsenic	mg/L	0.01	32	0	<0.001	<0.001	☑
Barium	mg/L	2	32	0	0.041	0.039	☑
Cadmium	mg/L	0.002	32	0	<0.001	<0.001	☑
Chlorine (Free)	mg/L	5	1571	0	4.3	2.2	☑
Chlorine (Total)	mg/L	5	1571	0	4.4	2.7	☑
Chromium	mg/L	0.05	32	0	<0.001	<0.001	☑
Copper	mg/L	2	32	0	0.031	0.013	☑
Dichloroacetic Acid	ug/L	100	40	0	41	37	☑
Fluoride	mg/L	1.5	112	0	1.1	0.96	☑
Lead	mg/L	0.01	32	0	0.003	0.002	☑
Manganese	mg/L	0.5	613	0	0.030	0.003	☑
Monochloroacetic Acid	ug/L	150	40	0	<10	<10	☑
Nickel	mg/L	0.02	32	0	<0.001	<0.001	☑
Trichloroacetic Acid	ug/L	100	40	0	20	19	☑
Trihalomethanes (Total)	ug/L	250	173	3	280	210	☑

Rathdowney Health Assessment

Parameter	Units	ADWG Health Guideline	Number of tests	Exceedence Count	Maximum Result	95th %-ile	Meets ADWG
Arsenic	mg/L	0.01	4	0	<0.001	<0.001	☑
Barium	mg/L	2	4	0	0.051	0.050	☑
Cadmium	mg/L	0.002	4	0	<0.001	<0.001	☑
Chlorine (Free)	mg/L	5	52	0	1.9	1.8	☑
Chlorine (Total)	mg/L	5	52	0	2.1	1.9	☑
Chromium	mg/L	0.05	4	0	<0.001	<0.001	☑
Copper	mg/L	2	4	0	0.005	0.005	☑
Dichloroacetic Acid	ug/L	100	4	0	17	17	☑
Fluoride	mg/L	1.5	12	0	0.96	0.83	☑
Lead	mg/L	0.01	4	0	<0.001	<0.001	☑
Manganese	mg/L	0.5	52	0	<0.001	<0.001	☑
Monochloroacetic Acid	ug/L	150	4	0	<10	<10	☑
Nickel	mg/L	0.02	4	0	<0.001	<0.001	☑
Trichloroacetic Acid	ug/L	100	4	0	13	13	☑
Trihalomethanes (Total)	ug/L	250	20	0	97	90	☑

South East Queensland Water Supply System (Brisbane and Ipswich) Health Assessment							
Parameter	Units	ADWG Health Guideline	Number of tests	Exceedence Count	Maximum Result	95th %-ile	Meets ADWG
Arsenic	mg/L	0.01	12	0	<0.001	<0.001	☑
Barium	mg/L	2	12	0	0.034	0.033	☑
Cadmium	mg/L	0.002	12	0	<0.001	<0.001	☑
Chlorine (Free)	mg/L	5	1261	0	3.1	1.6	☑
Chlorine (Total)	mg/L	5	8479	0	4.2	3.0	☑
Chromium	mg/L	0.05	12	0	<0.001	<0.001	☑
Copper	mg/L	2	12	0	0.018	0.017	☑
Dichloroacetic Acid	ug/L	100	34	0	16	12	☑
Fluoride	mg/L	1.5	155	0	1.2	0.89	☑
Lead	mg/L	0.01	12	0	<0.001	<0.001	☑
Manganese	mg/L	0.5	2701	0	0.12	0.006	☑
Monochloroacetic Acid	ug/L	150	34	0	<10	<10	☑
Nickel	mg/L	0.02	12	0	<0.001	<0.001	☑
Nitrate	mg/L	50	1785	0	0.96	0.64	☑
Nitrite (as N)	mg/L	3	1785	0	0.76	0.32	☑
Trichloroacetic Acid	ug/L	100	34	0	16	12	☑
Trihalomethanes (Total)	ug/L	250	332	0	160	99	☑

Somerset Health Assessment							
Parameter	Units	ADWG Health Guideline	Number of tests	Exceedence Count	Maximum Result	95th %-ile	Meets ADWG
Arsenic	mg/L	0.01	4	0	<0.001	<0.001	☑
Barium	mg/L	2	4	0	0.024	0.024	☑
Cadmium	mg/L	0.002	4	0	<0.001	<0.001	☑
Chlorine (Free)	mg/L	5	52	0	2.2	1.8	☑
Chlorine (Total)	mg/L	5	52	0	2.6	2.3	☑
Chromium	mg/L	0.05	4	0	<0.001	<0.001	☑
Copper	mg/L	2	4	0	0.004	0.004	☑
Dichloroacetic Acid	ug/L	100	4	0	42	41	☑
Fluoride	mg/L	1.5	13	0	0.56	0.47	☑
Lead	mg/L	0.01	4	0	<0.001	<0.001	☑
Manganese	mg/L	0.5	52	0	0.008	0.006	☑
Monochloroacetic Acid	ug/L	150	4	0	<10	<10	☑
Nickel	mg/L	0.02	4	0	<0.001	<0.001	☑
Trichloroacetic Acid	ug/L	100	4	0	39	36	☑
Trihalomethanes (Total)	ug/L	250	20	0	150	140	☑

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APPENDIX D: 2020-21 WATER QUALITY – AESTHETIC ASSESSMENT

Parameter (Median values)	Units	ADWG Aesthetic Guideline Value	Beaudesert	Boonah-Kalbar	Canungra	Esk-Toogoolawah	Jimna	Kilcoy	Kooralbyn	Linville	Lowood	Rathdowney	SEQ Water Supply Scheme	Somerset Township
2-Methyl isoborneol	ng/L	-	<2	<2	<2	<2	<2	<2	<2	<2	2.2	<2	2.3	5.0
Aluminium	mg/L	0.2	0.023	0.030	0.009	0.069	0.028	0.019	0.017	0.004	0.024	0.012	0.034	0.026
Ammonia (Total, as N)	mg/L	0.5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.3	NT
Chloride	mg/L	250	71	46	23	74	40	42	54	110	77	67	50	46
Colour (Apparent)	PCU	15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Colour (True)	PCU	15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Conductivity	uS/cm	1000	480	480	200	500	450	350	410	700	490	360	450	380
Geosmin	ng/L	-	<2	<2	2.9	<2	2.3	<2	<2	<2	<2	<2	<2	<2
Iron	mg/L	0.3	0.014	0.008	0.002	0.007	0.003	0.021	0.005	0.002	0.013	0.007	0.009	0.022
Langelier Index	-	-	-0.51	-0.49	-0.48	-0.52	-1.2	-0.84	-0.38	-0.02	-0.62	-0.48	-0.6	-0.93
pH	pH Unit	6.5 - 8.5	7.4	7.4	7.8	7.3	7.3	7.4	7.7	7.4	7.3	7.6	7.6	7.5
Silica	mg/L	80	16	4	20	4.2	9	3.6	18	20	3.7	14	4.5	2.3
Sodium	mg/L	180	50	52	17	49	71	38	39	58	42	41	35	45
Sulphate (as SO4)	mg/L	250	54	67	1.0	37	79	41	49	15	36	9.0	27	51
Temperature	deg C	-	23	23	22	25	22	24	23	24	24	22	24	25
Total Dissolved Solids	mg/L	600	300	310	130	320	290	220	260	450	310	230	290	240
Total Hardness	mg/L	200	130	100	59	120	57	74	98	200	130	92	90	69
Turbidity	NTU	5	0.1	0.1	0.1	0.2	0.1	0.1	0.1	<0.1	0.1	0.1	0.2	0.1
Zinc	mg/L	3	0.004	<0.001	<0.001	<0.001	0.003	0.004	0.004	0.003	0.003	0.005	0.001	0.012
Meets ADWG Guideline		☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑

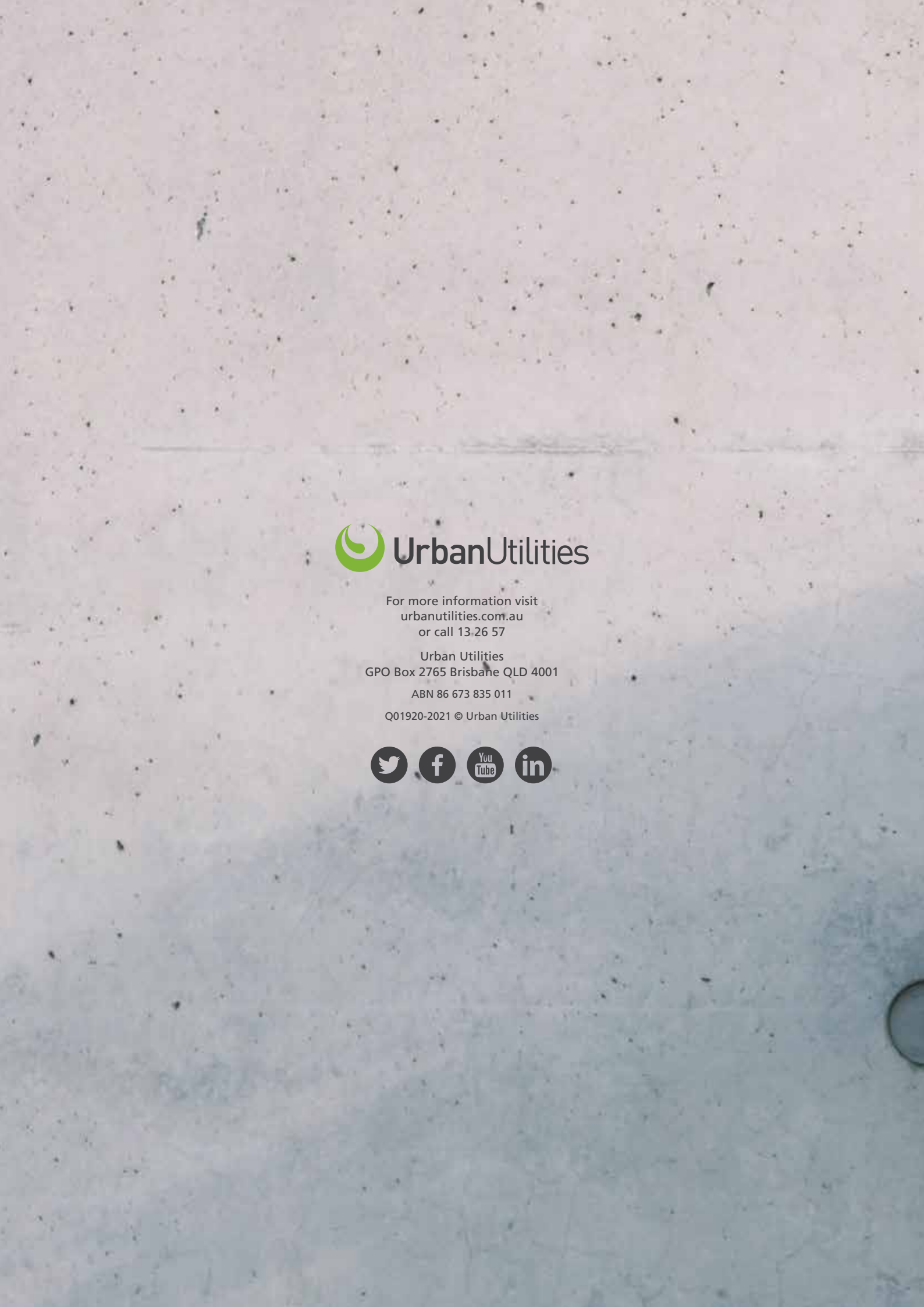
GLOSSARY

<	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.
Ammonia (NH3)	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.
Bulk water	The treated water supplied from the Queensland Bulk Water Authority (Seqwater) to distributor retailers, including Urban Utilities.
Chloramination / chloramine	The application of chlorine and ammonia to create monochloramine (NH_2Cl), 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.
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/100mL	Colony Forming Units per 100 millilitres.
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.
COVID-19	Coronavirus disease 2019 (COVID-19) is an infectious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).
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 QHealth.
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.
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.
km	A kilometre, which is 1,000 metres
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 or other disinfectants are used to treat drinking water.
mg/L	milligrams per litre
MPN/100mL	Most Probable Number per 100 millilitres
Mycobacterium abscessus	A bacterium distantly related to the ones that cause tuberculosis and leprosy
Naturally occurring	Present in the natural environment as minerals, elements, salts and other substances.
ng/L	Nanograms per litre

GLOSSARY

Network	An arrangement or 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 particles that are generally invisible to the naked eye. The measurement of turbidity is a key test of water quality.
Nitrate (NO3)	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.
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 zero to 14. A pH greater than seven is alkaline, less than seven is acidic and seven is neutral. The pH of public water supplies should be slightly alkaline to minimise corrosion and stabilise disinfection.
Reservoir	A water tower or tank used for the storage of treated water within the water distribution system.
SAS Lab	Scientific Analytical Services Laboratory, Urban Utilities.
Scheme	The 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.
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 Solids (TDS)	A measure of inorganic salts and small amounts of organic matter 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 ($CaCO_3$) 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 five haloacetic acids is formed when chlorine or other disinfectants are used to treat drinking water.
Turbidity	Refers to the presence of suspended solids in water causing a muddy or discoloured appearance. Turbidity is measured in Nephelometric Turbidity Units (NTU).
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.



Urban Utilities

For more information visit
urbanutilities.com.au
or call 13 26 57

Urban Utilities
GPO Box 2765 Brisbane QLD 4001

ABN 86 673 835 011