DRINKING WATER SERVICE ANNUAL REPORT 2023/2024

Service Provider Identification Number	**SP485**
Name	**Gympie Regional Council**
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Telephone	**1300 307 800**
Website	**www.gympie.qld.gov.au**
Local Government Area covered by this plan	**Gympie Regional Council**
Water Supply Schemes covered by this plan	**Amamoor, Cooloola Cove, Goomeri, Gympie, Imbil, Kandanga, Kilkivan and Rainbow Beach**

GYMPIE REGIONAL COUNCIL

Revision	Revision Date	Details	Authorised
0.0	18/11/2024	Draft	Rhonda Otto
	13/12/2024	Review	Peter Willey
	24/12/2024	Final Copy	Emma Fisher

About this report

The Gympie Regional Council 2023/2024 Drinking Water Service Annual Report documents the performance of Council's drinking water service with respect to water quality, and implementation of the DWQMP as required under the *Water Supply (Safety and Reliability) Act 2008*, and demonstrates how we have been implementing key improvement actions detailed in our approved DWQMP.

This report assists the regulator to determine whether the approved DWQMP and any approval conditions have been complied with and provides a mechanism to report publicly on our performance in managing drinking water quality. It also allows us to meet our legislative obligations under the *Water Supply (Safety and Reliability) Act 2008*.

Reporting requirements

Under the *Water Supply (Safety and Reliability) Act 2008*, water service providers must prepare a Drinking Water Service Annual Report each financial year. This report must include:

- the actions taken by Gympie Regional Council to implement its DWQMP
- details of Gympie Regional Council's compliance with drinking water quality criteria
- details of any water quality incidents reported to the regulator
- details of any customer complaints related to water service.
- the outcome of any DWQMP Review undertaken
- a summary of DWQMP audit findings and recommendations

Tell us what you think

A copy of this Drinking Water Service Annual report is available to view on Council's website and on PC's at Council Libraries. A copy of the report is also available for purchase at a nominal cost.

If you would like to provide feedback on this report, please contact us via:

Website

www.gympie.qld.gov.au

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Chapter 1: About us

What we do

Gympie Regional Council is responsible for delivering drinking water, recycled water and sewerage services to approximately 35,908 customers in the Gympie Region.

Our 6,898km^2 geographical area includes the towns of Amamoor, Cooloola Cove, Tin Can Bay, Goomeri, Gympie, Imbil, Kandanga, Kilkivan and Rainbow Beach.

We provide water services through the management of an extensive network, including:

- 8 water treatment plants
- 14 active reservoirs and 5 offline reservoirs
- 6 pump stations
- 462 kilometres of pipeline.

Chapter 2: Our service area

Our Network

We supply around 3,973 megalitres of drinking water to approximately 15,234 residential and commercial properties. Drinking water is delivered to our customers via 8 separate network water supply schemes as listed below:

Scheme Name	Water Source	Treatment processes	Treatment capacity	Towns supplied
Amamoor Water Scheme	Amamoor Creek	Coagulation, pre-oxidation, filtration, UV treatment and chlorine disinfection	0.5 ML/day based on 20-hour operation	Amamoor
Cooloola Cove Water Scheme	Teewah Creek	pH adjustment, Coagulation, flocculation, filtration, chlorine disinfection and fluoridation	3.6ML/day based on 20-hour operation	Cooloola Cove and Tin Can Bay
Goomeri Water Scheme	Kinbombi Off-Stream Ponds 4 x Bores within Mary Basin	Coagulation, flocculation, ozone treatment, BAC filter, UV treatment and chlorine disinfection	0.2 ML/day based on 20-hour operation	Goomeri

Gympie Water Scheme	Mary River (3464ML per annum Borumba Dam)	Coagulation, flocculation, filtration, chlorine disinfection and fluoridation	18ML/day based on 20-hour operation	Gympie
Imbil Water Scheme	Yabba Creek (160ML per annum Borumba Dam)	Coagulation, pre-oxidation UV treatment and chlorine disinfection	0.230 ML/day based on 20-hour operation	Imbil
Kandanga Water Scheme	Kandanga Creek	Coagulation, pre-oxidation, UV treatment and chlorine disinfection	0.5 ML/day based on 20-hour operation	Kandanga
Kilkivan Water Scheme	5 x Production Bores located within Burnett Basin	Filtration, reverse osmosis and chlorine disinfection	0.14 ML/day based on 20-hour operation	Kilkivan
Rainbow Beach Water Scheme	4 production bores located within the Cooloola Sand Mass	pH adjustment, filtration, chlorine disinfection	2.52 ML/day based on 20-hour operation	Rainbow Beach

The schemes begin at raw water source (surface and groundwater) and include water treatment, water storage, trunk and distribution pipe networks, pumps, chlorination systems and water meters. Gympie is the largest scheme, supplying 66 per cent of the customers.

Chapter 3: Drinking water quality performance

Legislative requirements

The supply of safe and reliable drinking water in Queensland is regulated by various state legislation, including the *Water Supply (Safety and Reliability) Act 2008* and the *Public Health Act 2005*.

Under the *Water Supply (Safety and Reliability) Act 2008*, 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*, Queensland Health has regulated the standards for drinking water quality related to *E. coli* and fluoride. These standards, together with the health guideline levels in the 'Australian Drinking Water Guidelines 2011' – updated September 2022 (ADWG), have been incorporated under the *Water Supply (Safety and Reliability) Act 2008* as water quality criteria for drinking water in Queensland.

Water quality performance summary

For the 2023/24 reporting period, Gympie Regional Council met the prescribed microbiological standards for all eight drinking water schemes.

Table 1 summarises how our drinking water schemes performed over 1 July 2023 to 30 June 2024, against each category of water quality performance:

Water Quality Performance		
Scheme	**Microbiological**	**Chemical**
Amamoor	✓	×
Cooloola Cove	✓	✓
Goomeri	✓	✓
Gympie	✓	✓
Imbil	✓	×
Kandanga	✓	×
Kilkivan	✓	×
Rainbow Beach	✓	✓

Table 1: Drinking water performance summary: 1 July 2023 – 30 June 2024

Microbiological assessment (*E. coli*)

Over 2023/24 eight drinking water schemes achieved 100 per cent compliance with legislative *E. coli* requirements. The standard for drinking water in Queensland requires no detection of E. coli in 98 per cent of samples collected over a 12 month period. The minimum number of samples required to be taken is detailed in the *Queensland Public Health Regulation 2005 Schedule 3A*.

E. coli water quality compliance details are provided in Appendix A, including the month-by-month performance.

Health-related chemical assessment

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. The verification monitoring program analyses these substances which are continuously assessed against ADWG health-related limits and operational control triggers.

Four of the eight water schemes complied with all of the health-related chemical limit values defined in the ADWG. The exceptions were the below levels of trihalomethanes (THMs):

Water supply	Date	THMs (mg/L) range
Goomeri	8 February 2024	300
Amamoor	8 February 2024	400
Kandanga	3 April 2024	340
Imbil	7 May 2024	290

Health assessment water quality compliance details are provided in Appendix B.

Verification monitoring program

To verify that we deliver safe drinking water, Council's Environmental Health Department collects samples from the respective networks and sends the samples to a National Association of Testing Authorities (NATA) accredited laboratory for water analyses. These samples are collected from 31 dedicated sample points across the service region. The water quality data is reviewed and compared against prescribed requirements in the legislation and the ADWG.

Aesthetic assessment

Our routine verification monitoring program is important for us to verify that we provide safe drinking water to our customers. We take advantage of the program to continuously assess

non-health related parameters which contribute to the way our water tastes, smells and appears. We aim to meet the ADWG aesthetic guidelines where possible, however providing safe drinking water is our overriding priority.

Chapter 4: Notifying the regulator

Under sections 102 and 102A of the *Water Supply (Safety and Reliability) Act 2008*, Gympie Regional Council is required to immediately inform the Regulator if the quality of water supplied from its drinking water service does not comply with the water quality criteria as specified in the ADWG.

In the event that Gympie Regional Council becomes aware of a reportable incident, we notify the Regulator within the required timeframe.

On detection of a water quality issue, Council will:

- initiate further sampling in the affected zone
- undertake a comprehensive investigation to determine the factors that may have attributed to the event, and
- initiate responsive corrective actions e.g. flushing of water mains.

Reportable events

For the 2023/2024 year the 12 reportable events were

1. THM exceedance in Goomeri water scheme on 25 September 2023 to 3 October 2023 with range of 300 μg/L to 260 μg/L.

Immediate actions:	Kinbombi Pond 2 was isolated and removed as a raw water source with raw water for the Goomeri Water Supply. Water sourced from Kinbombi Pond 1. Commenced weekly testing and monitoring of the treatment process during unfavorable weather conditions.
Preventative actions:	Council will continue observations of raw water monitoring schedule, ozonation & chlorine dosing. Council had programmed for completion in first quarter of 2024 the implementation of new filters to better increase filtration of organics as filters were in poor media condition.

2. Kilkivan Water Scheme imported water from Gympie Water Scheme from 12 October 2023 to 17 October 2024 to supplement supply due to operational issue with Kilkivan Water Treatment Plant. Decision to supplement the current water production and ensure continuity of water supply was due to weekly events booked at the Showgrounds which attracted a large number of visitors leading to increased water demand.

Immediate actions:	Commenced importing water from the Gympie Water Scheme to ensure continuity of supply to scheme. Investigation commenced to identify cause of reduced water production. Initial thought was sand filter media had become bound, and an emergent bypass fitting was ordered to enable plant to operate while addressing the perceived

	sand filter media issue.
Preventative actions:	During disassembling of pipework, a blocked unidentified static mixer was located. As no chemical is dosed at this location the static mixer was removed from within the pipework on 23 October 2023.

3. THM exceedance in Goomeri water scheme on 19 December 2023 to 28 February 2024 with range of 270 μg/L to 260 μg/L. Further THM exceedances occurred on 30 April & 7 May 2024 with range of 270 μg/L to 290 μg/L.

Immediate actions:	Commenced weekly testing and monitoring of the treatment process during unfavorable weather conditions.
Preventative actions:	Council will continue observations of raw water monitoring schedule, ozonation & chlorine dosing. Council had programmed the implementation of new filters to commence on 15 January 2024 with commissioning by end of February 2024. This will further improve the filtration process at the water treatment plant.

4. Blue Green algae bloom event in Kinbombi Storage Pond 1 was identified from monitoring samples collected on 19 December 2023, these samples returned high BGA Total Cells and Biovolume but indicated there was no presences of potentially toxic cells.

Immediate actions:	Commenced twice weekly sampling and commenced discussion with the regulators seeking approval to dose Pond with EarthTec.
Preventative actions:	Create a BGA Management Plan containing actions on identifying, monitoring, an escalation process, defining trigger points and establishing procedures to respond to outbreaks including action and treatment strategy.

5. UV system at Amamoor Water Treatment Plant was off-line due to electrical fault

Immediate actions:	Contacted supplier to arrange for technician attend site where the wiper motor was unjammed and debris was removed from reactor, along with scale on lamp.
Preventative actions:	Intensity sensor be replaced during the 6-monthly service scheduled in March 2024.

6. Chlorine Dioxide generator at Kandanga WTP was off-line due to unknown fault for a period of three (3) days. Fault was identified as a level switch on chemical tank activating when tank was full.

Immediate actions:	Operators activated the standby Sodium hypochlorite dosing and contacted the supplier and arranged a technician to attend site on 30 December 2023.
Preventative actions:	As the generator is part of a trial the supplier is responsible for equipment and chemical supplies. Technician adjusted interlock

	setting with the required replacement part sourced and replaced.

7. THM exceedance in Amamoor water scheme on 9 January 2024 to 14 February 2024 with range of 260 μg/L to 400 μg/L. Further THM exceedances occurred on 28 February, 5 & 21 March and 3 & 11 April 2024 with range of 260 μg/L to 310 μg/L.

Immediate actions:	Commenced weekly testing and monitoring of the treatment process during weather conditions.
Preventative actions:	Council reviewed the chlorine dioxide trial and options for the three Mary Valley Plants (Amamoor, Kandanga, Imbil) to develop a brief for additional treatment upgrades which is part of the capital program. Council has also further developed the Water Security Strategy which considers these upgrades and also a pipeline to combine the Gympie and Mary Valley schemes, the business cases and feasibility studies are progressing to confirm timing.

8. THM exceedance in Imbil water scheme on 9 January 2024 to 9 February 2024 with range of 260 μg/L to 280 μg/L. Further THM exceedances occurred on 28 February, 30 April and 7 May 2024 with range of 260 μg/L to 290 μg/L.

Immediate actions:	Commenced weekly testing and monitoring of the treatment process during weather conditions.
Preventative actions:	Council reviewed the chlorine dioxide trial and options for the three Mary Valley Plants (Amamoor, Kandanga, Imbil) to develop a brief for additional treatment upgrades which is part of the capital program. Council has also further developed the Water Security Strategy which considers these upgrades and also a pipeline to combine the Gympie and Mary Valley schemes, the business cases and feasibility studies are progressing to confirm timing.

9. Amamoor water scheme import of water on 31 January 2024 to 14 February 2024 due to high levels of turbidity and colour in the raw water source.

Immediate actions:	Treatment Plant was taken off-line with the reservoir at 79% at 9:25am, operators scheduled to retest raw water for useability after 12 noon on 31/01/2024 and standby arrangements for a registered water carrier to tanker 13kL to site from Gympie Water Scheme to Amamoor Reservoir via designated booster pump with online chlorine monitoring. Operators to perform daily test on raw water to determine if water meets quality to enable treatment.
Preventative actions:	No preventive action available.

10. Amamoor water scheme import of water on 18 & 19 February 2024 and 29 March 2024 due to high levels of turbidity and colour in the raw water source.

Immediate actions:	Treatment Plant was taken off-line with the reservoir at 62%, standby arrangements for a registered water carrier to tanker 22.4kL

	to site from Gympie Water Scheme to Amamoor Reservoir via designated booster pump with online chlorine monitoring. Operators to perform daily test on raw water to determine if water meets quality to enable treatment.
Preventative actions:	No preventive action available.

11. THM exceedance in Kandanga water scheme on 3 April 2024 and 27 April 2024 with results of 340 μg/L & 270 μg/L respectively.

Immediate actions:	Commenced weekly testing and monitoring of the treatment process. The trialed chlorine dioxide generator was taken off-line on 7 March 2024 due to issue with colour at Treatment Plant and within reticulation. Commenced pre-dosing with sodium hypochlorite and performed iron and manganese tests within Treatment Plant and reticulation which returned low results. Collected water samples and let sit overnight which returned increased results.
Preventative actions:	Council reviewed the chlorine dioxide trial and options for the three Mary Valley Plants (Amamoor, Kandanga, Imbil) to develop a brief for additional treatment upgrades which is part of the capital program. Council has also further developed the Water Security Strategy which considers these upgrades and also a pipeline to combine the Gympie and Mary Valley schemes, the business cases and feasibility studies are progressing to confirm timing.

12. Kandanga water scheme experienced a Chlorite exceedance on 30 September, 29 November 2023 and 28 February 2024.

Immediate actions:	Chlorine Dioxide generator was taken offline.
Preventative actions:	The generator did reduce the formation of THMs within the water supply, however due to the increase of chlorites Council will not be continuing with chlorine dioxide dosing and requested dismantling and removal of the generator from site. Consultant engaged to review trial report and provide a list of options for consideration on reduction of THMs whilst not creating exceedance of chlorites.

Chapter 5: Managing water safety

Gympie Regional Council is committed to providing safe, reliable drinking water from source to our customers' tap. We endeavor to ensure a consistent and reliable supply of high quality and safe drinking water to our customers through a risk management and robust planning approach.

Drinking Water Quality Management Plan

Gympie Regional Council operates with an approved DWQMP that is reviewed every two years.

The next review is required to be carried out by 6 January 2026.

DWQMP Review Outcomes

The following table describes the review undertaken during 2023-24 leading to the updated Plan approved on 29 May 2024.

Review Component	Findings	Outcomes	Status of actions	Responsible position
Service Description	Scheme populations, connections, water demands, and Stakeholder list required update	DW QMP updated	Complete	Not applicable
Details of infrastructure	Updates required with some changes to water supply schemes	Scheme descriptions have been updated. Schematics have been updated were needed.	Complete	Not applicable
Catchment characteristics and water quality	Update of Catchment characterisation	Inclusion of Source characterisation and update of Groundwater catchment detail	Complete	Not applicable
Hazard identification and risk assessment	Risk assessment reviewed for changes within previous two years	Risk registers updated and included in amended DWQMP	Complete	Not applicable
Documented procedures	Minor changes	Updates included in amended DWQMP	Complete	Not applicable

Information management & records keeping	No changes	Not applicable	Not applicable	Note applicable
Risk Management Improvement Program	RIMP to be updated as per revised risk assessment	Risk Assessment Register and RMIP has been reviewed and updated	Complete	Not applicable
Management of incidents & emergencies	Review completed with updates required.	Cybersecurity Incident reporting has been updated, Incident classification and reporting have been updated. Drinking water quality incident reporting flowchart has been updated	Complete	Not applicable
Operational monitoring	Operational monitoring has been updated.	Included chlorate monitoring where applicable. Associated hazards, target limits and actions if target is exceeded, critical limits and actions if critical limits are exceeded were linked to OCPs and CCPs.	Complete	Not applicable
Verification monitoring	Verification monitoring has been updated.	Including associated hazards, target limits and actions if target is exceeded, critical limits and actions if critical limits are exceeded were linked to OCPs and CCPs.	Complete	Not applicable
Other	Blue Green Algal Management Plan	Included blue green algae management flow chart.	Not applicable	Not applicable

DWQMP implementation

The DWQMP is being implemented by monitoring and adhering to the CCPs which ensure safety of the treated water supply. Water and wastewater staff were involved in the review of the DWQMP. Updated CCP procedures were distributed to the water treatment plants. The approved plan was discussed with operational staff.

Further improvements have been made such as:

- Ongoing training of operators e.g., "Aquacard", Compliance Sampling & Testing and Certificate IV in Water Operations.
- Investigations into feasibility of treatment methods for Blue Green Algae in raw water.
- Risk Assessment was reviewed, and a new suite of improvement actions identified.

Drinking Water Quality Management Plan audit

As required by the *Water Supply (Safety and Reliability) Act 2008*, Gympie Regional Council is operating its drinking water service under an approved DWQMP. No audit was required or conducted during the relevant financial year 01/07/2023 to 30/06/2024.

The next audit is required to be carried out by 30 June 2025.

Chapter 6: Managing the customer's water quality experience

Customer Service Standards

Gympie Regional Council operates with approved Customer Services Standards, the latest version was compiled in December 2024 and is reviewed every five years.

Water Quality Complaints

Gympie Regional Council receives various water quality enquiries throughout the year. When a customer is dissatisfied with the efforts of Gympie Regional Council to address a water quality issue and remedial action is required, these enquiries are classified as 'water quality complaints'.

Water quality complaints are captured, recorded and monitored to help identify any trends and possible areas of improvement in the operation, maintenance and management of the Gympie Regional Council water supply network.

There was nil water quality complaint/s recorded during 2023/24.

Chapter 7: Risk management approach

The approved DWQMP follows industry best practice in that all water quality hazards have been identified, risk assessed, and where necessary, improvements have been committed to.

The risk management improvement program (RMIP) used during this reporting period was the version included with the DWQMP approved on 29 May 2024.

The below dot points and Table 17 (Appendix C) outline the progress against this RMIP.

Significant projects undertaken within this year include:

- Water quality monitoring– installed replacement on-line instruments for chlorine, turbidity and pH monitoring for the Amamoor and Kandanga WTPs. Installed replacement filter turbidity instruments at Gympie WTP. Installed new chlorine cylinder scales at Gympie, Rainbow Beach and Cooloola Cove WTPs.
- Chlorine residual monitoring – completed the installation and commissioning of on-line chlorine residual monitoring instruments on main reservoirs in all towns.
- Pressure control – completed two pressure reducing valve (PRV) installations in Rainbow Beach to create two new controlled zones. Installed new booster pumps for the Lindsay St high zone in Gympie.
- Goomeri WTP – installed replacement multimedia and activated carbon filters at the Goomeri WTP.
- Water reservoirs – commenced construction of a replacement water reservoir at Jones Hill in Gympie.
- Constructed a replacement water fill station at Rainbow Beach.

Glossary

<	Less than.
>	Greater than.
ADWG	Australian Drinking Water Guidelines 2011 – updated November 2018 published by the National Health and Medical Research Council of Australia.
Bulk Water	The treated water supplied from the Queensland Bulk Water Authority (Seqwater) to distributor retailers, including Gympie Regional Council.
cfu/100mL	Colony Forming Units per 100 millilitres.
DNRME	Department of Natural Resources Mines and Energy (Queensland Government).
DRDMW	Department of Regional Development Manufacturing and Water (Queensland Government)
Disinfectant	An agent that destroys or inhibits the activity of microorganisms which cause disease. Gympie Regional Council uses chlorine.
DWQMP	Drinking Water Quality Management Plan as required under the *Water Supply (Safety and Reliability) Act 2008*.
E. coli	*Escherichia coli*, a bacterium whose presence 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.
km	Kilometre, which is 1,000 metres.
Megalitre (ML)	One million litres.
mg/L	Milligrams per litre.
MPN/100mL	Most Probable Number per 100 millilitres.
Network	An arrangement or system of pipes, pumps and reservoirs used for distributing water.

NTU	Nephelometric Turbidity Unit- 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.
Reservoir	A water tower or tank used for the storage of treated water within the water distribution system.
QFSS	Queensland Forensic and Scientific Services, Health Support Queensland.
Scheme	The system distributing drinking water to customers.
Seqwater	Queensland Bulk Water Supply Authority, trading as Seqwater. The bulk drinking water provider for Gympie Regional Council.
SCADA	Supervisory Control and Data Acquisition, which are computer-based control systems for water facilities including WTPs.
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	The Chief Executive of Department of Regional Development Manufacturing and Water (DRDMW); previously Department of Natural Resources Mines and Energy (DNRME).
THMs	Total Trihalomethanes – a group of disinfection by-products that generally form when chlorine is used to disinfect drinking water.
WTP	Water Treatment Plant.

Appendices

Appendix A: Water quality compliance – E. coli

Overall						
Scheme	Number of samples required	Actual number of samples	Number of samples *E.coli* detected	Required performance %	Actual performance %	*E. coli* Compliant
Amamoor	12	24	0	98	100	✓
Cooloola Cove	60	107	0	98	100	✓
Goomeri	12	24	0	98	100	✓
Gympie	96	126	0	98	100	✓
Imbil	12	25	0	98	100	✓
Kandanga	12	24	0	98	100	✓
Kilkivan	12	25	0	98	100	✓
Rainbow Beach	60	98	0	98	100	✓

The *Public Health Regulation 2005* (the regulation) requires that 98 per cent of samples taken in a 12-month period should contain no *E. Coli*. This requirement is referred to as the 'annual value' in Schedule 3A of the regulation.

Water Amamoor

Month	Jul 2023	Aug 2023	Sep 2023	Oct 2023	Nov 2023	Dec 2023	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024	Jun 2024
No. of samples collected	2	2	2	2	2	2	2	2	2	2	2	2
No. of samples collected in which E.coli is detected (i.e. a failure)	0	0	0	0	0	0	0	0	0	0	0	0
No. of samples collected in previous 12 month period	24	24	24	24	24	24	24	24	24	24	24	24
No. of failures for previous 12 month period	0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Compliance with 98% annual value	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Water Cooloola Cove

Month	Jul 2023	Aug 2023	Sep 2023	Oct 2023	Nov 2023	Dec 2023	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024	Jun 2024
No. of samples collected	9	7	9	9	9	8	10	9	9	10	9	9
No. of samples collected in which E.coli is detected (i.e. a failure)	0	0	0	0	0	0	0	0	0	0	0	0
No. of samples collected in previous 12 month period	108	106	107	107	106	106	107	107	107	108	107	107
No. of failures for previous 12 month period	0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Compliance with 98% annual value	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Water Goomeri

Month	Jul 2023	Aug 2023	Sep 2023	Oct 2023	Nov 2023	Dec 2023	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024	Jun 2024
No. of samples collected	2	2	2	2	2	2	2	2	2	2	2	2
No. of samples collected in which E.coli is detected (i.e. a failure)	0	0	0	0	0	0	0	0	0	0	0	0
No. of samples collected in previous 12 month period	24	24	24	24	24	24	24	24	24	24	24	24
No. of failures for previous 12 month period	0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Compliance with 98% annual value	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Water Gympie

Month	Jul 2023	Aug 2023	Sep 2023	Oct 2023	Nov 2023	Dec 2023	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024	Jun 2024
No. of samples collected	11	10	10	11	11	9	12	10	10	12	10	10
No. of samples collected in which E.coli is detected (i.e. a failure)	0	0	0	0	0	0	0	0	0	0	0	0
No. of samples collected in previous 12 month period	128	127	127	126	126	125	127	127	127	128	126	126
No. of failures for previous 12 month period	0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Compliance with 98% annual value	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Water Imbil

Month	Jul 2023	Aug 2023	Sep 2023	Oct 2023	Nov 2023	Dec 2023	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024	Jun 2024
No. of samples collected	2	2	2	2	2	2	3	2	2	2	2	2
No. of samples collected in which E.coli is detected (i.e. a failure)	0	0	0	0	0	0	0	0	0	0	0	0
No. of samples collected in previous 12 month period	24	24	24	24	24	24	25	25	25	25	25	25
No. of failures for previous 12 month period	0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Compliance with 98% annual value	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Water Kandanga

Month	Jul 2023	Aug 2023	Sep 2023	Oct 2023	Nov 2023	Dec 2023	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024	Jun 2024
No. of samples collected	2	2	2	2	2	2	2	2	2	2	2	2
No. of samples collected in which E.coli is detected (i.e. a failure)	0	0	0	0	0	0	0	0	0	0	0	0
No. of samples collected in previous 12 month period	24	24	24	24	24	24	24	24	24	24	24	24
No. of failures for previous 12 month period	0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Compliance with 98% annual value	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Water Kilkivan

Month	Jul 2023	Aug 2023	Sep 2023	Oct 2023	Nov 2023	Dec 2023	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024	Jun 2024
No. of samples collected	2	2	2	2	2	2	2	2	2	2	2	2
No. of samples collected in which E.coli is detected (i.e. a failure)	0	0	0	0	0	0	0	0	0	0	0	0
No. of samples collected in previous 12 month period	25	25	25	25	25	25	25	25	25	25	24	24
No. of failures for previous 12 month period	0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Compliance with 98% annual value	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Water Rainbow Beach

Month	Jul 2023	Aug 2023	Sep 2023	Oct 2023	Nov 2023	Dec 2023	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024	Jun 2024
No. of samples collected	7	9	8	7	9	7	9	8	9	9	8	8
No. of samples collected in which E.coli is detected (i.e. a failure)	0	0	0	0	0	0	0	0	0	0	0	0
No. of samples collected in previous 12 month period	97	97	97	96	96	96	97	97	98	99	97	98
No. of failures for previous 12 month period	0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Compliance with 98% annual value	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Appendix B: Water quality compliance – Health Assessment

Table 1 - Amamoor Water Supply – Operational Monitoring

Scheme	Location	Parameter	No. of samples required to be collected	No. of samples tested	Operational criteria	No. of non compliant samples	Comments
Amamoor	WTP	Free Chlorine	366	364	Critical Limits: <1.2mg/L and >4.5mg/L	5	Range 1.03 to 4.76 mg/L
Amamoor	WTP	pH	26	22	ADWG Aesthetic Limit 6.5 - 8.5	0	
Amamoor	WTP	NTU	366	365	Critical Limit : >0.5 NTU	0	
Amamoor	WTP	HU	366	195	ADWG Aesthetic Limit 15 HU	0	
Amamoor	WTP	Hardness	26	25	ADWG Limit Aesthetic 200 mg $CaCO_3$/L	4	Max 220 mg $CaCO_3$/L
Amamoor	WTP	Iron	26	25	ADWG Aesthetic Limit 0.3 mg/L	0	
Amamoor	WTP	Manganese	26	24	ADWG Limit 0.5 mg/L	0	
Amamoor	WTP	Aluminium	26	25	ADWG Aesthetic Limit 0.2 mg/L	0	
Amamoor	Reticulation	Free Chlorine	52	88	ADWG Aesthetic 5 mg/L	56	

Table 2 – Cooloola Cove Water Supply – Operational Monitoring

Scheme	Location	Parameter	No. of samples required to be collected	No. of samples tested	Operational criteria	No. of non compliant samples	Comments
Cooloola Cove	WTP	Free Chlorine	366	366	Critical Limits: <1.2mg/L and >4.5mg/L	0	
Cooloola Cove	WTP	pH	366	366	Critical Limit: <5.4 and >6.3	0	Max 7.3
Cooloola Cove	WTP	NTU	366	366	Critical Limit: >0.5	0	
Cooloola Cove	WTP	HU	366	366	Critical Limit: >15	0	
Cooloola Cove	WTP	Alkalinity	12	12	N/A		
Cooloola Cove	WTP	Fluoride	366	366	Critical Limit 1.3mg/L	0	
Cooloola Cove	WTP	Hardness	12	12	ADWG Limit Aesthetic 200 mg $CaCO_3$/L	0	
Cooloola Cove	Reticulation	Free Chlorine	52	158	ADWG Aesthetic 5 mg/L	0	
Cooloola Cove	Reticulation	Fluoride	52	98	ADWG Limit 1.5mg/L	0	

Table 3 - Goomeri Water Supply – Operational Monitoring

Scheme	Location	Parameter	No. of samples required to be collected	No. of samples tested	Operational criteria	No. of non compliant samples	Comments

Goomeri	WTP	Free Chlorine	366	364	Critical Limits: <0.7mg/L and >4.0mg/L	0	
Goomeri	WTP	pH	366	366	ADWG Aesthetic Limit 6.5 - 8.5	0	
Goomeri	WTP	NTU	366	366	Critical Limit: >0.5	14	Max 1.03 NTU
Goomeri	WTP	HU	366	366	ADWG Limit: >15	0	
Goomeri	WTP	Alkalinity	26	24	N/A		
Goomeri	WTP	Hardness	26	347	ADWG Limit Aesthetic 200 mg $CaCO_3$/L	347	Min 222 mg/L
Goomeri	WTP	Iron	26	22	ADWG Limit 0.3mg/L	0	
Goomeri	WTP	Aluminium	26	24	ADWG Limit 0.2mg/L	0	
Goomeri	Reticulation	Free Chlorine	52	104	ADWG Aesthetic 5 mg/L	0	

Table 4 - Gympie Water Supply – Operational Monitoring

Scheme	Location	Parameter	No. of samples required to be collected	No. of samples tested	Operational criteria	No. of non-compliant samples	Comments
Gympie	WTP	Free Chlorine	366	365	Critical Limits: <1.5mg/L and >5.0mg/L	0	
Gympie	WTP	pH	366	366	ADWG Aesthetic Limit 6.5 - 8.5	0	
Gympie	WTP	NTU	366	366	Critical Limit: >0.5	0	
Gympie	WTP	HU	366	366	ADWG Aesthetic Limit 15 HU	0	
Gympie	WTP	Hardness	26	22	ADWG Limit Aesthetic 200 mg $CaCO_3$/L	0	
Gympie	WTP	Iron	26	22	ADWG Aesthetic Limit 0.3 mg/L	1	
Gympie	WTP	Manganese	26	22	ADWG Limit 0.5 mg/L	0	
Gympie	WTP	Aluminium	26	22	ADWG Aesthetic Limit 0.2 mg/L	0	
Gympie	WTP	Fluoride	366	366	Critical Limit 1.3 mg/L	0	
Gympie	Reticulation	Free Chlorine	52	556	ADWG Aesthetic 5 mg/L	0	

Table 5 - Imbil Water Supply – Operational Monitoring

Scheme	Location	Parameter	No. of samples required to be collected	No. of samples tested	Operational criteria	No. of non compliant samples	Comments
Imbil	WTP	Free Chlorine	366	366	Critical Limits: <1.2mg/L and >4.5mg/L		
Imbil	WTP	pH	26	19	ADWG Aesthetic Limit 6.5 - 8.5	0	

Imbil	WTP	NTU	366	366	Critical Limit: >0.5	1	Max 0.6 NTU
Imbil	WTP	HU	366	193	ADWG Aesthetic Limit 15 HU	10	Max 20 HU
Imbil	WTP	Hardness	26	25	ADWG Limit 200 mg/L	1	Max 208 mg/L
Imbil	WTP	Iron	26	25	ADWG Limit 0.3mg/L	0	
Imbil	WTP	Manganese	26	25	ADWG Limit 0.5mg/L	0	
Imbil	WTP	Aluminium	26	24	ADWG Limit 0.2mg/L	0	
Imbil	Reticulation	Free Chlorine	52	71	ADWG Aesthetic 5 mg/L	0	

Table 6 - Kandanga Water Supply – Operational Monitoring

Scheme	Location	Parameter	No. of samples required to be collected	No. of samples tested	Operational criteria	No. of non compliant samples	Comments
Kandanga	WTP	Free Chlorine	366	366	Critical Limits: <1.2mg/L and >4.5mg/L	74	All results <5.0 mg/L
Kandanga	WTP	pH	26	25	ADWG Aesthetic Limit 6.5 - 8.5	0	
Kandanga	WTP	NTU	366	366	Critical Limit: >0.5	0	
Kandanga	WTP	HU	366	194	ADWG Aesthetic Limit 15 HU	0	
Kandanga	WTP	Hardness	26	21	ADWG Limit 200 mg/L	6	
Kandanga	WTP	Iron	26	25	ADWG Limit 0.3mg/L	0	
Kandanga	WTP	Manganese	26	25	ADWG Limit 0.5mg/L	0	
Kandanga	WTP	Aluminium	26	25	ADWG Limit 0.2mg/L	0	
Kandanga	Reticulation	Free Chlorine	52	104	ADWG Aesthetic 5 mg/L	0	

Table 7 – Kilkivan Water Supply – Operational Monitoring

Scheme	Location	Parameter	No. of samples required to be collected	No. of samples tested	Operational criteria	No. of non compliant samples	Comments
Kilkivan	WTP	Free Chlorine	366	366	Critical Limits: <0.8mg/L and >2.5mg/L	1	<0.8 mg/L
Kilkivan	WTP	pH	366	366	ADWG Aesthetic Limit 6.5 - 8.5	0	
Kilkivan	WTP	NTU	366	366	Critical Limit: >0.5	0	
Kilkivan	WTP	HU	366	366	ADWG Aesthetic Limit 15 HU	0	
Kilkivan	WTP	Alkalinity	6	23	N/A		

Kilkivan	WTP	Hardness	26	22	ADWG Limit 200 mg/L	1	Max 220 mg/L
Kilkivan	WTP	Iron	26	23	ADWG Limit 0.3mg/L	0	
Kilkivan	WTP	Manganese	26	23	ADWG Limit 0.5mg/L	0	
Kilkivan	WTP	Aluminium	26	23	ADWG Limit 0.2mg/L	0	
Kilkivan	Reticulation	Free Chlorine	52	104	ADWG Aesthetic 5 mg/L	0	

Table 8 – Rainbow Beach Water Supply – Operational Monitoring

Scheme	Location	Parameter	No. of samples required to be collected	No. of samples tested	Operational Criteria	No. of non compliant samples	Comments
Rainbow Beach	WTP	Free Chlorine	366	366	Critical Limits: <0.5mg/L and >4.5mg/L	0	
Rainbow Beach	WTP	pH	366	366	ADWG Aesthetic Limit 6.5 - 8.5	0	
Rainbow Beach	WTP	NTU	366	366	Critical Limit: >0.5	0	
Rainbow Beach	WTP	HU	366	366	ADWG Aesthetic Limit 15 HU	0	
Rainbow Beach	WTP	Alkalinity	12	12	N/A		
Rainbow Beach	WTP	Hardness	12	12	ADWG Limit Aesthetic 200 mg $CaCO_3$/L	0	
Rainbow Beach	WTP	Iron	12	12	ADWG Aesthetic Limit 0.3 mg/L	0	
Rainbow Beach	WTP	Manganese	12	12	ADWG Limit 0.5 mg/L	0	
Rainbow Beach	WTP	Aluminium	12	12	ADWG Aesthetic Limit 0.2 mg/L	0	
Rainbow Beach	Reticulation	Free Chlorine	52	104	ADWG Aesthetic 5 mg/L	0	

Table 9 - Amamoor Water Supply – Verification Monitoring

Scheme	Location	Parameter	No. of samples required to be collected	No. of samples collected and tested	Verification criteria	No. of non compliant samples	Comments
Amamoor	Reticulation	Chlorine Residual	12	24	ADWG Aesthetic 5 mg/L	0	
Amamoor	Reticulation	Total Trihalomethanes	12	24	ADWG Limit 250 µg/L (0.25 mg/L)	10	Max 400 µg/L
Amamoor	Reticulation	pH	2	2	ADWG Aesthetic Limit 6.5 - 8.5	0	
Amamoor	Reticulation	Total Hardness	2	2	ADWG Limit Aesthetic 200 mg $CaCO_3$/L	1	Max 201 mg/L
Amamoor	Reticulation	Silica	2	2	ADWG Aesthetic Limit 80 mg/L	0	
Amamoor	Reticulation	Total Dissolved Solids	2	2	ADWG Aesthetic Limit 600 mg/L	0	
Amamoor	Reticulation	True Colour	2	2	ADWG Aesthetic Limit 15 HU	0	
Amamoor	Reticulation	Turbidity	2	2	ADWG Aesthetic Limit 5 NTU	0	
Amamoor	Reticulation	Sodium	2	2	ADWG Aesthetic Limit 180 mg/L	0	
Amamoor	Reticulation	Chloride	2	2	ADWG Aesthetic 250 mg/L	0	
Amamoor	Reticulation	Fluoride	2	2	ADWG Limit 1.5 mg/L	0	
Amamoor	Reticulation	Nitrate	2	2	ADWG Limit 50 mg/L	0	
Amamoor	Reticulation	Sulphate	2	2	ADWG Aesthetic Limit 500 mg/L	0	
Amamoor	Reticulation	Iron	2	2	ADWG Aesthetic Limit 0.3 mg/L	0	
Amamoor	Reticulation	Manganese	2	2	ADWG Limit 0.5 mg/L	0	
Amamoor	Reticulation	Zinc	2	2	ADWG Aesthetic Limit 3 mg/L	0	
Amamoor	Reticulation	Aluminium	2	2	ADWG Aesthetic Limit 0.2 mg/L	0	
Amamoor	Reticulation	Boron	2	2	ADWG Limit 4 mg/L	0	
Amamoor	Reticulation	Copper	2	2	ADWG Limit 2 mg/L	0	
Amamoor	Reticulation	Annual Aluminium Metals	1	1	ADWG Aesthetic Limit 0.03 mg/L	0	
Amamoor	Reticulation	Annual Arsenic Metals	1	1	ADWG Limit 0.01 mg/L	0	
Amamoor	Reticulation	Annual Cadmium Metals	1	1	ADWG Limit 0.002mg/L	0	
Amamoor	Reticulation	Annual Chromium Metals	1	1	ADWG Limit 0.05 mg/L	0	
Amamoor	Reticulation	Annual Copper Metals	1	1	ADWG Limit 2 mg/L	0	
Amamoor	Reticulation	Annual Iron Metals	1	1	ADWG Aesthetic Limit 0.3 mg/L	0	
Amamoor	Reticulation	Annual Lead Metals	1	1	ADWG Limit 0.01 mg/L	0	
Amamoor	Reticulation	Annual Manganese Metals	1	1	ADWG Limit 0.5 mg/L	0	
Amamoor	Reticulation	Annual Nickel Metals	1	1	ADWG Limit 0.02 mg/L	0	
Amamoor	Reticulation	Annual Zinc Metals	1	1	ADWG Aesthetic Limit 3 mg/L	0	

Table 10 – Cooloola Cove Water Supply – Verification Monitoring

Scheme	Location	Parameter	No. of samples required to be collected	No. of samples collected and tested	Verification criteria	No. of non compliant samples	Comments
Cooloola Cove	Reticulation	Chlorine Residual	12	96	ADWG Aesthetic 5 mg/L	0	
Cooloola Cove	Reticulation	Total Trihalomethanes	12	23	ADWG Limit 250 µg/L (0.25 mg/L)	0	
Cooloola Cove	Reticulation	Fluoride	12	11	ADWG Limit 1.5 mg/L	0	
Cooloola Cove	Reticulation	pH	2	4	ADWG Aesthetic Limit 6.5 - 8.5	0	
Cooloola Cove	Reticulation	Total Hardness	2	4	ADWG Limit Aesthetic 200 mg $CaCO_3$/L	0	
Cooloola Cove	Reticulation	Silica	2	4	ADWG Aesthetic Limit 80 mg/L	0	
Cooloola Cove	Reticulation	Total Dissolved Solids	2	4	ADWG Aesthetic Limit 600 mg/L	0	
Cooloola Cove	Reticulation	True Colour	2	4	ADWG Aesthetic Limit 15 HU	0	
Cooloola Cove	Reticulation	Turbidity	2	4	ADWG Aesthetic Limit 5 NTU	0	
Cooloola Cove	Reticulation	Sodium	2	4	ADWG Aesthetic Limit 180 mg/L	0	
Cooloola Cove	Reticulation	Chloride	2	4	ADWG Aesthetic 250 mg/L	0	
Cooloola Cove	Reticulation	Fluoride	2	4	ADWG Limit 1.5 mg/L	0	
Cooloola Cove	Reticulation	Nitrate	2	4	ADWG Limit 50 mg/L	0	
Cooloola Cove	Reticulation	Sulphate	2	4	ADWG Aesthetic Limit 500 mg/L	0	
Cooloola Cove	Reticulation	Iron	2	4	ADWG Aesthetic Limit 0.3 mg/L	0	
Cooloola Cove	Reticulation	Manganese	2	4	ADWG Limit 0.5 mg/L	0	
Cooloola Cove	Reticulation	Zinc	2	4	ADWG Aesthetic Limit 3 mg/L	0	
Cooloola Cove	Reticulation	Aluminium	2	4	ADWG Aesthetic Limit 0.2 mg/L	0	
Cooloola Cove	Reticulation	Boron	2	4	ADWG Limit 4 mg/L	0	
Cooloola Cove	Reticulation	Copper	2	4	ADWG Limit 2 mg/L	0	
Cooloola Cove	Reticulation	Annual Aluminium Metals	1	2	ADWG Aesthetic Limit 0.03 mg/L	0	
Cooloola Cove	Reticulation	Annual Arsenic Metals	1	2	ADWG Limit 0.01 mg/L	0	
Cooloola Cove	Reticulation	Annual Cadmium Metals	1	2	ADWG Limit 0.002mg/L	0	
Cooloola Cove	Reticulation	Annual Chromium Metals	1	2	ADWG Limit 0.05 mg/L	0	
Cooloola Cove	Reticulation	Annual Copper Metals	1	2	ADWG Limit 2 mg/L	0	
Cooloola Cove	Reticulation	Annual Iron Metals	1	2	ADWG Aesthetic Limit 0.3 mg/L	0	
Cooloola Cove	Reticulation	Annual Lead Metals	1	2	ADWG Limit 0.01 mg/L	0	
Cooloola Cove	Reticulation	Annual Manganese Metals	1	2	ADWG Limit 0.5 mg/L	0	
Cooloola Cove	Reticulation	Annual Nickel Metals	1	2	ADWG Limit 0.02 mg/L	0	
Cooloola Cove	Reticulation	Annual Zinc Metals	1	2	ADWG Aesthetic Limit 3 mg/L	0	

Table 11 - Goomeri Water Supply – Verification Monitoring

Scheme	Location	Parameter	No. of samples required to be collected	No. of samples collected and tested	Verification criteria	No. of non compliant samples	Comments
Goomeri	Reticulation	Chlorine Residual	12	24	ADWG Aesthetic 5 mg/L	0	
Goomeri	Reticulation	Total Trihalomethanes	12	20	ADWG Limit 250 µg/L (0.25 mg/L)	5	Max 300 mg/L
Goomeri	Reticulation	pH	2	2	ADWG Aesthetic Limit 6.5 - 8.5	0	
Goomeri	Reticulation	Total Hardness	2	2	ADWG Limit Aesthetic 200 mg $CaCO_3$/L	1	Max 270 mg
Goomeri	Reticulation	Silica	2	2	ADWG Aesthetic Limit 80 mg/L	0	
Goomeri	Reticulation	Total Dissolved Solids	2	2	ADWG Aesthetic Limit 600 mg/L	1	Max 620 mg/L
Goomeri	Reticulation	True Colour	2	2	ADWG Aesthetic Limit 15 HU	0	
Goomeri	Reticulation	Turbidity	2	2	ADWG Aesthetic Limit 5 NTU	0	
Goomeri	Reticulation	Sodium	2	2	ADWG Aesthetic Limit 180 mg/L	0	
Goomeri	Reticulation	Chloride	2	2	ADWG Aesthetic 250 mg/L	0	
Goomeri	Reticulation	Fluoride	2	2	ADWG Limit 1.5 mg/L	0	
Goomeri	Reticulation	Nitrate	2	2	ADWG Limit 50 mg/L	0	
Goomeri	Reticulation	Sulphate	2	2	ADWG Aesthetic Limit 500 mg/L	0	
Goomeri	Reticulation	Iron	2	2	ADWG Aesthetic Limit 0.3 mg/L	0	
Goomeri	Reticulation	Manganese	2	2	ADWG Limit 0.5 mg/L	0	
Goomeri	Reticulation	Zinc	2	2	ADWG Aesthetic Limit 3 mg/L	0	
Goomeri	Reticulation	Aluminium	2	2	ADWG Aesthetic Limit 0.2 mg/L	0	
Goomeri	Reticulation	Boron	2	2	ADWG Limit 4 mg/L	0	
Goomeri	Reticulation	Copper	2	2	ADWG Limit 2 mg/L	0	
Goomeri	Reticulation	Annual Aluminium Metals	1	1	ADWG Aesthetic Limit 0.03 mg/L	0	
Goomeri	Reticulation	Annual Arsenic Metals	1	1	ADWG Limit 0.01 mg/L	0	
Goomeri	Reticulation	Annual Cadmium Metals	1	1	ADWG Limit 0.002mg/L	0	
Goomeri	Reticulation	Annual Chromium Metals	1	1	ADWG Limit 0.05 mg/L	0	
Goomeri	Reticulation	Annual Copper Metals	1	1	ADWG Limit 2 mg/L	0	
Goomeri	Reticulation	Annual Iron Metals	1	1	ADWG Aesthetic Limit 0.3 mg/L	0	
Goomeri	Reticulation	Annual Lead Metals	1	1	ADWG Limit 0.01 mg/L	0	
Goomeri	Reticulation	Annual Manganese Metals	1	1	ADWG Limit 0.5 mg/L	0	
Goomeri	Reticulation	Annual Nickel Metals	1	1	ADWG Limit 0.02 mg/L	0	
Goomeri	Reticulation	Annual Zinc Metals	1	1	ADWG Aesthetic Limit 3 mg/L	0	

Table 12 – Gympie Water Supply – Verification Monitoring

Scheme	Location	Parameter	No. of samples required to be collected	No. of samples collected and tested	Verification criteria	No. of non compliant samples	Comments
Gympie	Reticulation	Chlorine Residual	12	114	ADWG Aesthetic 5 mg/L	0	
Gympie	Reticulation	Total Trihalomethanes	12	12	ADWG Limit 250 µg/L (0.25 mg/L)	0	
Gympie	Reticulation	Fluoride	12	11	ADWG Limit 1.5 mg/L	0	
Gympie	Reticulation	pH	2	4	ADWG Aesthetic Limit 6.5 - 8.5	0	
Gympie	Reticulation	Total Hardness	2	4	ADWG Limit Aesthetic 200 mg $CaCO_3$/L	0	
Gympie	Reticulation	Silica	2	4	ADWG Aesthetic Limit 80 mg/L	0	
Gympie	Reticulation	Total Dissolved Solids	2	4	ADWG Aesthetic Limit 600 mg/L	0	
Gympie	Reticulation	True Colour	2	4	ADWG Aesthetic Limit 15 HU	0	
Gympie	Reticulation	Turbidity	2	4	ADWG Aesthetic Limit 5 NTU	0	
Gympie	Reticulation	Sodium	2	4	ADWG Aesthetic Limit 180 mg/L	0	
Gympie	Reticulation	Chloride	2	4	ADWG Aesthetic 250 mg/L	0	
Gympie	Reticulation	Fluoride	2	4	ADWG Limit 1.5 mg/L	0	
Gympie	Reticulation	Nitrate	2	4	ADWG Limit 50 mg/L	0	
Gympie	Reticulation	Sulphate	2	4	ADWG Aesthetic Limit 500 mg/L	0	
Gympie	Reticulation	Iron	2	4	ADWG Aesthetic Limit 0.3 mg/L	0	
Gympie	Reticulation	Manganese	2	4	ADWG Limit 0.5 mg/L	0	
Gympie	Reticulation	Zinc	2	4	ADWG Aesthetic Limit 3 mg/L	0	
Gympie	Reticulation	Aluminium	2	4	ADWG Aesthetic Limit 0.2 mg/L	0	
Gympie	Reticulation	Boron	2	4	ADWG Limit 4 mg/L	0	
Gympie	Reticulation	Copper	2	4	ADWG Limit 2 mg/L	0	
Gympie	Reticulation	Annual Aluminium Metals	1	2	ADWG Aesthetic Limit 0.03 mg/L	0	
Gympie	Reticulation	Annual Arsenic Metals	1	2	ADWG Limit 0.01 mg/L	0	
Gympie	Reticulation	Annual Cadmium Metals	1	2	ADWG Limit 0.002mg/L	0	
Gympie	Reticulation	Annual Chromium Metals	1	2	ADWG Limit 0.05 mg/L	0	
Gympie	Reticulation	Annual Copper Metals	1	2	ADWG Limit 2 mg/L	0	
Gympie	Reticulation	Annual Iron Metals	1	2	ADWG Aesthetic Limit 0.3 mg/L	0	
Gympie	Reticulation	Annual Lead Metals	1	2	ADWG Limit 0.01 mg/L	0	
Gympie	Reticulation	Annual Manganese Metals	1	2	ADWG Limit 0.5 mg/L	0	
Gympie	Reticulation	Annual Nickel Metals	1	2	ADWG Limit 0.02 mg/L	0	
Gympie	Reticulation	Annual Zinc Metals	1	1	ADWG Aesthetic Limit 3 mg/L	0	

Table 13 – Imbil Water Supply – Verification Monitoring

Scheme	Location	Parameter	No. of samples required to be collected	No. of samples collected and tested	Verification criteria	No. of non compliant samples	Comments
Imbil	Reticulation	Chlorine Residual	12	25	ADWG Aesthetic 5 mg/L	0	
Imbil	Reticulation	Total Trihalomethanes	12	25	ADWG Limit 250 µg/L (0.25 mg/L)	7	Max 290 µg/L
Imbil	Reticulation	pH	2	2	ADWG Aesthetic Limit 6.5 - 8.5	0	
Imbil	Reticulation	Total Hardness	2	2	ADWG Limit Aesthetic 200 mg $CaCO_3$/L	0	
Imbil	Reticulation	Silica	2	2	ADWG Aesthetic Limit 80 mg/L	0	
Imbil	Reticulation	Total Dissolved Solids	2	2	ADWG Aesthetic Limit 600 mg/L	0	
Imbil	Reticulation	True Colour	2	2	ADWG Aesthetic Limit 15 HU	0	
Imbil	Reticulation	Turbidity	2	2	ADWG Aesthetic Limit 5 NTU	0	
Imbil	Reticulation	Sodium	2	2	ADWG Aesthetic Limit 180 mg/L	0	
Imbil	Reticulation	Chloride	2	2	ADWG Aesthetic 250 mg/L	0	
Imbil	Reticulation	Fluoride	2	2	ADWG Limit 1.5 mg/L	0	
Imbil	Reticulation	Nitrate	2	2	ADWG Limit 50 mg/L	0	
Imbil	Reticulation	Sulphate	2	2	ADWG Aesthetic Limit 500 mg/L	0	
Imbil	Reticulation	Iron	2	2	ADWG Aesthetic Limit 0.3 mg/L	0	
Imbil	Reticulation	Manganese	2	2	ADWG Limit 0.5 mg/L	0	
Imbil	Reticulation	Zinc	2	2	ADWG Aesthetic Limit 3 mg/L	0	
Imbil	Reticulation	Aluminium	2	2	ADWG Aesthetic Limit 0.2 mg/L	0	
Imbil	Reticulation	Boron	2	2	ADWG Limit 4 mg/L	0	
Imbil	Reticulation	Copper	2	2	ADWG Limit 2 mg/L	0	
Imbil	Reticulation	Annual Aluminium Metals	1	1	ADWG Aesthetic Limit 0.03 mg/L	0	
Imbil	Reticulation	Annual Arsenic Metals	1	1	ADWG Limit 0.01 mg/L	0	
Imbil	Reticulation	Annual Cadmium Metals	1	1	ADWG Limit 0.002mg/L	0	
Imbil	Reticulation	Annual Chromium Metals	1	1	ADWG Limit 0.05 mg/L	0	
Imbil	Reticulation	Annual Copper Metals	1	1	ADWG Limit 2 mg/L	0	
Imbil	Reticulation	Annual Iron Metals	1	1	ADWG Aesthetic Limit 0.3 mg/L	0	
Imbil	Reticulation	Annual Lead Metals	1	1	ADWG Limit 0.01 mg/L	0	
Imbil	Reticulation	Annual Manganese Metals	1	1	ADWG Limit 0.5 mg/L	0	
Imbil	Reticulation	Annual Nickel Metals	1	1	ADWG Limit 0.02 mg/L	0	
Imbil	Reticulation	Annual Zinc Metals	1	1	ADWG Aesthetic Limit 3 mg/L	0	

Table 14 - Kandanga Water Supply – Verification Monitoring

Scheme	Location	Parameter	No. of samples required to be collected	No. of samples collected and tested	Verification criteria	No. of non compliant samples	Comments
Kandanga	Reticulation	Chlorine Residual	12	24	ADWG Aesthetic 5 mg/L	0	
Kandanga	Reticulation	Total Trihalomethanes	12	15	ADWG Limit 250 µg/L (0.25 mg/L)	2	Max 340 mg/L
Kandanga	Reticulation	pH	2	2	ADWG Aesthetic Limit 6.5 - 8.5	0	
Kandanga	Reticulation	Total Hardness	2	2	ADWG Limit Aesthetic 200 mg $CaCO_3$/L	1	Max 215 mg
Kandanga	Reticulation	Silica	2	2	ADWG Aesthetic Limit 80 mg/L	0	
Kandanga	Reticulation	Total Dissolved Solids	2	2	ADWG Aesthetic Limit 600 mg/L	0	
Kandanga	Reticulation	True Colour	2	2	ADWG Aesthetic Limit 15 HU	0	
Kandanga	Reticulation	Turbidity	2	2	ADWG Aesthetic Limit 5 NTU	0	
Kandanga	Reticulation	Sodium	2	2	ADWG Aesthetic Limit 180 mg/L	0	
Kandanga	Reticulation	Chloride	2	2	ADWG Aesthetic 250 mg/L	0	
Kandanga	Reticulation	Fluoride	2	2	ADWG Limit 1.5 mg/L	0	
Kandanga	Reticulation	Nitrate	2	2	ADWG Limit 50 mg/L	0	
Kandanga	Reticulation	Sulphate	2	2	ADWG Aesthetic Limit 500 mg/L	0	
Kandanga	Reticulation	Iron	2	2	ADWG Aesthetic Limit 0.3 mg/L	0	
Kandanga	Reticulation	Manganese	2	2	ADWG Limit 0.5 mg/L	0	
Kandanga	Reticulation	Zinc	2	2	ADWG Aesthetic Limit 3 mg/L	0	
Kandanga	Reticulation	Aluminium	2	2	ADWG Aesthetic Limit 0.2 mg/L	0	
Kandanga	Reticulation	Boron	2	2	ADWG Limit 4 mg/L	0	
Kandanga	Reticulation	Copper	2	2	ADWG Limit 2 mg/L	0	
Kandanga	Reticulation	Annual Aluminium Metals	1	1	ADWG Aesthetic Limit 0.03 mg/L	0	
Kandanga	Reticulation	Annual Arsenic Metals	1	1	ADWG Limit 0.01 mg/L	0	
Kandanga	Reticulation	Annual Cadmium Metals	1	1	ADWG Limit 0.002mg/L	0	
Kandanga	Reticulation	Annual Chromium Metals	1	1	ADWG Limit 0.05 mg/L	0	
Kandanga	Reticulation	Annual Copper Metals	1	1	ADWG Limit 2 mg/L	0	
Kandanga	Reticulation	Annual Iron Metals	1	1	ADWG Aesthetic Limit 0.3 mg/L	0	
Kandanga	Reticulation	Annual Lead Metals	1	1	ADWG Limit 0.01 mg/L	0	
Kandanga	Reticulation	Annual Manganese Metals	1	1	ADWG Limit 0.5 mg/L	0	
Kandanga	Reticulation	Annual Nickel Metals	1	1	ADWG Limit 0.02 mg/L	0	
Kandanga	Reticulation	Annual Zinc Metals	1	1	ADWG Aesthetic Limit 3 mg/L	0	

Table 15 – Kilkivan Water Supply – Verification Monitoring

Scheme	Location	Parameter	No. of samples required to be collected	No. of samples collected and tested	Verification criteria	No. of non compliant samples	Comments
Kilkivan	Reticulation	Chlorine Residual	12	24	ADWG Aesthetic 5 mg/L	0	
Kilkivan	Reticulation	Total Trihalomethanes	12	11	ADWG Limit 250 µg/L (0.25 mg/L)	0	
Kilkivan	Reticulation	pH	2	2	ADWG Aesthetic Limit 6.5 - 8.5	0	
Kilkivan	Reticulation	Total Hardness	2	2	ADWG Limit Aesthetic 200 mg $CaCO_3$/L	0	
Kilkivan	Reticulation	Silica	2	2	ADWG Aesthetic Limit 80 mg/L	0	
Kilkivan	Reticulation	Total Dissolved Solids	2	2	ADWG Aesthetic Limit 600 mg/L	0	
Kilkivan	Reticulation	True Colour	2	2	ADWG Aesthetic Limit 15 HU	0	
Kilkivan	Reticulation	Turbidity	2	2	ADWG Aesthetic Limit 5 NTU	0	
Kilkivan	Reticulation	Sodium	2	2	ADWG Aesthetic Limit 180 mg/L	0	
Kilkivan	Reticulation	Chloride	2	2	ADWG Aesthetic 250 mg/L	0	
Kilkivan	Reticulation	Fluoride	2	2	ADWG Limit 1.5 mg/L	0	
Kilkivan	Reticulation	Nitrate	2	2	ADWG Limit 50 mg/L	0	
Kilkivan	Reticulation	Sulphate	2	2	ADWG Aesthetic Limit 500 mg/L	0	
Kilkivan	Reticulation	Iron	2	2	ADWG Aesthetic Limit 0.3 mg/L	0	
Kilkivan	Reticulation	Manganese	2	2	ADWG Limit 0.5 mg/L	0	
Kilkivan	Reticulation	Zinc	2	2	ADWG Aesthetic Limit 3 mg/L	0	
Kilkivan	Reticulation	Aluminium	2	2	ADWG Aesthetic Limit 0.2 mg/L	0	
Kilkivan	Reticulation	Boron	2	2	ADWG Limit 4 mg/L	0	
Kilkivan	Reticulation	Copper	2	2	ADWG Limit 2 mg/L	0	
Kilkivan	Reticulation	Annual Aluminium Metals	1	1	ADWG Aesthetic Limit 0.03 mg/L	0	
Kilkivan	Reticulation	Annual Arsenic Metals	1	1	ADWG Limit 0.01 mg/L	0	
Kilkivan	Reticulation	Annual Cadmium Metals	1	1	ADWG Limit 0.002mg/L	0	
Kilkivan	Reticulation	Annual Chromium Metals	1	1	ADWG Limit 0.05 mg/L	0	
Kilkivan	Reticulation	Annual Copper Metals	1	1	ADWG Limit 2 mg/L	0	
Kilkivan	Reticulation	Annual Iron Metals	1	1	ADWG Aesthetic Limit 0.3 mg/L	0	
Kilkivan	Reticulation	Annual Lead Metals	1	1	ADWG Limit 0.01 mg/L	0	
Kilkivan	Reticulation	Annual Manganese Metals	1	1	ADWG Limit 0.5 mg/L	0	
Kilkivan	Reticulation	Annual Nickel Metals	1	1	ADWG Limit 0.02 mg/L	0	
Kilkivan	Reticulation	Annual Zinc Metals	1	1	ADWG Aesthetic Limit 3 mg/L	0	

Table 16 – Rainbow Beach Water Supply – Verification Monitoring

Scheme	Location	Parameter	No. of samples required to be collected	No. of samples collected and tested	Verification criteria	No. of non compliant samples	Comments
Rainbow Beach	Reticulation	Chlorine Residual		85	ADWG Aesthetic 5 mg/L	0	
Rainbow Beach	Reticulation	Total Trihalomethanes		12	ADWG Limit 250 µg/L (0.25 mg/L)	0	
Rainbow Beach	Reticulation	pH	2	2	ADWG Aesthetic Limit 6.5 - 8.5	0	
Rainbow Beach	Reticulation	Total Hardness	2	2	ADWG Limit Aesthetic 200 mg $CaCO_3$/L	0	
Rainbow Beach	Reticulation	Silica	2	2	ADWG Aesthetic Limit 80 mg/L	0	
Rainbow Beach	Reticulation	Total Dissolved Solids	2	2	ADWG Aesthetic Limit 600 mg/L	0	
Rainbow Beach	Reticulation	True Colour	2	2	ADWG Aesthetic Limit 15 HU	0	
Rainbow Beach	Reticulation	Turbidity	2	2	ADWG Aesthetic Limit 5 NTU	0	
Rainbow Beach	Reticulation	Sodium	2	2	ADWG Aesthetic Limit 180 mg/L	0	
Rainbow Beach	Reticulation	Chloride	2	2	ADWG Aesthetic 250 mg/L	0	
Rainbow Beach	Reticulation	Fluoride	2	2	ADWG Limit 1.5 mg/L	0	
Rainbow Beach	Reticulation	Nitrate	2	2	ADWG Limit 50 mg/L	0	
Rainbow Beach	Reticulation	Sulphate	2	2	ADWG Aesthetic Limit 500 mg/L	0	
Rainbow Beach	Reticulation	Iron	2	2	ADWG Aesthetic Limit 0.3 mg/L	0	
Rainbow Beach	Reticulation	Manganese	2	2	ADWG Limit 0.5 mg/L	0	
Rainbow Beach	Reticulation	Zinc	2	2	ADWG Aesthetic Limit 3 mg/L	0	
Rainbow Beach	Reticulation	Aluminium	2	2	ADWG Aesthetic Limit 0.2 mg/L	0	
Rainbow Beach	Reticulation	Boron	2	2	ADWG Limit 4 mg/L	0	
Rainbow Beach	Reticulation	Copper	2	2	ADWG Limit 2 mg/L	0	
Rainbow Beach	Reticulation	Annual Aluminium Metals	1	1	ADWG Aesthetic Limit 0.03 mg/L	0	
Rainbow Beach	Reticulation	Annual Arsenic Metals	1	1	ADWG Limit 0.01 mg/L	0	
Rainbow Beach6	Reticulation	Annual Cadmium Metals	1	1	ADWG Limit 0.002mg/L	0	
Rainbow Beach	Reticulation	Annual Chromium Metals	1	1	ADWG Limit 0.05 mg/L	0	
Rainbow Beach	Reticulation	Annual Copper Metals	1	1	ADWG Limit 2 mg/L	0	
Rainbow Beach	Reticulation	Annual Iron Metals	1	1	ADWG Aesthetic Limit 0.3 mg/L	0	
Rainbow Beach	Reticulation	Annual Lead Metals	1	1	ADWG Limit 0.01 mg/L	0	
Rainbow Beach	Reticulation	Annual Manganese Metals	1	1	ADWG Limit 0.5 mg/L	0	
Rainbow Beach	Reticulation	Annual Nickel Metals	1	1	ADWG Limit 0.02 mg/L	0	
Rainbow Beach	Reticulation	Annual Zinc Metals	1	1	ADWG Aesthetic Limit 3 mg/L	0	

Appendix C: Risk management improvement plan - progress

Table 17 – Progress against the risk management improvement program in the approved DWQMP

Site	Process Step	Primary hazard	Source of Hazard/Event	Primary Preventive Measure	Other Preventative Measures	RIMP			Updates
						Immediate (30/06/2022)	Short Term (30/06/2023)	Long Term (30/06/2027)	
Amamoor	UV Disinfection	Protozoa (Crypto/ Giardia) (Gympie, Mary Valley, Kinbombi)	UV failure	Fault alarm from UV system will interlock plant	Filtration - online monitoring and auto shutdown; Incident Management Plan		Update operational monitoring and CCP documents for all parameters required for effective disinfection		Interlock in place.
Amamoor	Supernatant return	Protozoa (Crypto/ Giardia) (Gympie, Mary Valley, Kinbombi)	Supernatant return - concentration of oocysts	Filtration and UV	Supernatent return is limited by pump flows.	Investigate local usage of supernatant or return to creek (if allowable)	Develop concept design for excess supernatant disposal and implement.		Council definition of supernatant - QWSR advised "backwash water would be considered wastewater and as such fall under the classification of recycled water under the Water Supply (safety and Reliability) Act 2008"
Amamoor		Disinfection byproducts (surface water)	Reaction with organic matter and chlorine	Chlorination OCP	Control and monitoring of pre-dose to provide Fe and Mn removal without over-dosing	Complete investigation to develop THM control strategy.	Scope and implement upgrade works from preferred strategy	Scope and implement upgrade works from preferred strategy	Council reviewed the chlorine dioxide trial and options for the three Mary Valley Plants (Amamoor, Kandanga, Imbil) to develop a brief for additional treatment upgrades which is part of the capital program. Council has also further developed the Water Security Strategy which considers these upgrades and also a pipeline to combine the Gympie and Mary Valley schemes, the business cases and feasibility studies are progressing to confirm timing.
Amamoor		Chlorate	Sodium hypochlorite breakdown	Twice per week deliveries of chlorine lowers risk of hypochlorite solution breakdown		Initial monitoring of sodium hypochlorite deliveries for chlorate. Water testing	Refer to Whole of System RMIP (Chlorate)		Chlorate sampling scheduled to commence from January 2025.
Amamoor		Loss of Supply	Filter breakthrough	Tankering water from Gympie		Develop strategy for Mary Valley WTP upgrade to operate in dirty raw water events	Develop strategy for Mary Valley WTP upgrade to operate in dirty raw water events		Installation of tanker connection point is completed. Feasibility study is ongoing
Amamoor	Reservoir Storage	Bacteria/ Virus (Reticulation)	Reservoir ingress	Sealed tank	Disinfectant residual	Refer to Whole of System RMIP (Reservoir ingress)	Refer to Whole of System RMIP (Reservoir ingress)	Refer to Whole of System RMIP (Reservoir ingress)	Mary Valley link to Gympie will influence the decision
Amamoor		Protozoa (Crypto/ Giardia) (Retic)	Reservoir ingress	Sealed tank		Refer to Whole of System RMIP (Reservoir ingress)	Refer to Whole of System RMIP (Reservoir ingress)	Refer to Whole of System RMIP (Reservoir ingress)	Mary Valley link to Gympie will influence the decision
Cooloola TCB	Clear Water Storage	Bacteria/ Virus (Reticulation)	Ingress into tank	Sealed storage	Disinfection residual	Refer to Whole of System RMIP (Reservoir ingress); Clean and inspect CWS	Refer to Whole of System RMIP (Reservoir ingress)	Refer to Whole of System RMIP (Reservoir ingress)	Program is progressing but still needs to be formalised.
Cooloola TCB		Protozoa (Crypto/ Giardia) (Retic)	Ingress into tank	Sealed storage		Refer to Whole of System RMIP (Reservoir ingress); Clean and inspect CWS	Refer to Whole of System RMIP (Reservoir ingress)	Refer to Whole of System RMIP (Reservoir ingress)	Program is progressing but still needs to be formalised.

Cooloola TCB		Protozoa (Crypto/ Giardia) (Retic)	Ingress into tank	Sealed storage			Planned to be decommissioned		Ongoing
Cooloola TCB		Protozoa (Crypto/ Giardia) (Retic)	Ingress into tank	Sealed storage			Planned to be decommissioned		Ongoing
Goomeri		Disinfection byproducts (surface water)	Water age, low turnover		Ozone BAC		Investigate options for increasing turnover of reservoir	Investigations into the primary source of bromide/bromine which is contributing to THM levels	Investigation into raw water source of Bromide/Bromines causing high THMs
Goomeri	Bypass	All hazards	Accidental or deliberate use of bypass	Air gapped	Staff training - Not intentionally used	Investigate potential second bypass at WTP - lockout			Plant bypass has been air gapped
Goomeri		Bacteria/ Virus (Gympie, Mary Valley, Kinbombi)	Chlorine underdose	Chlorination OCP			Install additional chlorine monitoring prior to Clear Water Tanks		Investigate
Goomeri		Chlorate	Breakdown of sodium hypochlorite				Refer to Whole of System RMIP (Chlorate)		Chlorate sampling scheduled to commence from January 2025.
Goomeri		Chlorate	Breakdown of sodium hypochlorite				Refer to Whole of System RMIP (Chlorate)		Chlorate sampling scheduled to commence from January 2025.
Goomeri	Goomeri Reservoir	Bacteria/ Virus (Reticulation)	Ingress into Reservoir	Sealed storage, vermin proofed	Monitoring point at the reservoir; tank drained, cleaned and inspected in 2018	Refer to Whole of System RMIP (Reservoir ingress)	Refer to Whole of System RMIP (Reservoir ingress)	Refer to Whole of System RMIP (Reservoir ingress)	Note reservoir has not been in operation since around 2022.
Goomeri		Hardness/TDS	Naturally occurring	N/A	Ion exchange water softener (but not currently used)	Develop long term water supply & security strategy for Goomeri (incl. treatment processes for the available sources)			Project initiation and strategy development still to be completed
Goomeri		Hardness/TDS	Naturally occurring		Ion exchange water softener (but not currently used)	Develop long term water supply & security strategy for Goomeri (incl. treatment processes for the available sources)	Consider installing softener on just bore water - & develop brine disposal	Consider installing softener on just bore water - & develop brine disposal	Ongoing
Goomeri	Water softener	Hardness/TDS	Naturally occurring	N/A	Ion exchange water softener (but not currently used)	Develop long term water supply & security strategy for Goomeri (incl. treatment processes for the available sources)			Ongoing
Gympie	Whole of WTP	Loss of Supply	Asset failure	Plant manned daily	Disaster Management Plan	Replacing flocculation paddles	Repair works for Jones Hill in-ground reservoir		Ongoing
Gympie		Protozoa (Crypto/ Giardia) (Gympie, Mary Valley, Kinbombi)	Failure of backwash procedure allowing dirty water to enter the Clear Water Tank	Operator training and awareness	Backwash Procedure (EWSI1104)		SCADA Lockout to prevent accidental initiation of backwash		Reviewing backwash process and controls
Gympie	Bypass of filter	Protozoa (Crypto/ Giardia) (Gympie, Mary Valley, Kinbombi)	Bypass from sedimentation tank into clear water	Filter bypass - dead plate on the valve - capped.	Not used under normal circumstances	Refer to Whole of System RMIP (Bypass)	Refer to Whole of System RMIP (Bypass)		Gympie WTP currently has air gap on one bypass and a security cover over bypass valve to Jones Hill Res. Investigating air-gap for this line to complete isolation.
Gympie		Bacteria/ Virus (Reticulation)	Ingress into reservoirs - Penny Road and Noosa Road WPS	Sealed storages	Residual disinfection	Refer to Whole of System RMIP (Reservoir ingress)	Refer to Whole of System RMIP (Reservoir ingress)	Refer to Whole of System RMIP (Reservoir ingress)	Undertaking network review which will will confirm if re-onlining is required.
Gympie		Protozoa (Crypto/ Giardia) (Retic)	Ingress into reservoirs - Penny Road and Noosa Road WPS	Sealed storages		Refer to Whole of System RMIP (Reservoir ingress)	Refer to Whole of System RMIP (Reservoir ingress)	Refer to Whole of System RMIP (Reservoir ingress)	Undertaking network review which will will confirm if re-onlining is required.
Gympie		Bacteria/ Virus (Reticulation)	Ingress into reservoirs - other storages	Sealed storages	Residual disinfection	Refer to Whole of System RMIP (Reservoir ingress)	Refer to Whole of System RMIP (Reservoir ingress)	Refer to Whole of System RMIP (Reservoir ingress)	Condition assessment program being drafted.
Gympie		Protozoa (Crypto/ Giardia) (Retic)	Ingress into reservoirs - other storages	Sealed storages		Refer to Whole of System RMIP (Reservoir ingress)	Refer to Whole of System RMIP (Reservoir ingress)	Refer to Whole of System RMIP (Reservoir ingress)	Condition assessment program being drafted.

Gympie		Loss of Supply	Asset failure - raw water tunnel	Reservoir storage	Disaster Management Plan	Undertake inspection of intake tunnel	Develop contingency plan for raw water tunnel bypass		Program for condition assessments are in progress, contingency plan need to be finalised.
Imbil	UV Disinfection	Protozoa (Crypto/ Giardia) (Gympie, Mary Valley, Kinbombi)	UV failure	Fault alarm from UV system will interlock plant	Filtration - online monitoring and auto shutdown; Incident Management Plan		Update operational monitoring and CCP documents for all parameters required for effective disinfection		Interlock in place.
Imbil		Chlorate	Sodium hypochlorite breakdown	High frequency deliveries of chlorine lowers risk of hypochlorite solution breakdown		Initial monitoring of sodium hypochlorite deliveries for chlorate. Water testing	Refer to Whole of System RMIP (Chlorate)		Chlorate sampling scheduled to commence from January 2025.
Imbil		Loss of Supply	Filter breakthrough	Tankering water from Gympie		Develop strategy for Mary Valley WTP upgrade to operate in dirty raw water events (linked to THM investigation)	Develop strategy for Mary Valley WTP upgrade to operate in dirty raw water events		Installation of tanker connection point is completed. Feasibility study is ongoing
Imbil		Disinfection byproducts (surface water)	Reaction with organic matter and chlorine	Disinfection CCP	Control and monitoring of pre-dose to provide Fe and Mn removal without over-dosing	Complete investigation to develop THM control strategy.	Scope and implement upgrade works from preferred strategy	Scope and implement upgrade works from preferred strategy	Council reviewed the chlorine dioxide trial and options for the three Mary Valley Plants (Amamoor, Kandanga, Imbil) to develop a brief for additional treatment upgrades which is part of the capital program. Council has also further developed the Water Security Strategy which considers these upgrades and also a pipeline to combine the Gympie and Mary Valley schemes, the business cases and feasibility studies are progressing to confirm timing.
Kandanga	Supernatant return	Protozoa (Crypto/ Giardia) (Gympie, Mary Valley, Kinbombi)	Supernatant return - concentration of oocysts	Filtration and UV	Develop concept design for excess supernatant disposal and implement.	Investigate local usage of supernatant or return to creek (if allowable)	Develop concept design for excess supernatant disposal and implement.		Council definition of supernatant - QWSR advised "backwash water would be considered wastewater and as such fall under the classification of recycled water under the Water Supply (safety and Reliability) Act 2008"
Kandanga		Disinfection byproducts (surface water)	Reaction with organic matter and chlorine	Chlorination OCP	Control and monitoring of pre-dose to provide Fe and Mn removal without over-dosing	Complete investigation to develop THM control strategy.	Scope and implement upgrade works from preferred strategy	Scope and implement upgrade works from preferred strategy	Council reviewed the chlorine dioxide trial and options for the three Mary Valley Plants (Amamoor, Kandanga, Imbil) to develop a brief for additional treatment upgrades which is part of the capital program. Council has also further developed the Water Security Strategy which considers these upgrades and also a pipeline to combine the Gympie and Mary Valley schemes, the business cases and feasibility studies are progressing to confirm timing.
Kandanga		Chlorate	Sodium hypochlorite breakdown	Twice per week deliveries of chlorine lowers risk of hypochlorite solution breakdown		Initial monitoring of sodium hypochlorite deliveries for chlorate. Water testing	Refer to Whole of System RMIP (Chlorate)		Chlorate sampling scheduled to commence from January 2025.

Kandanga		Loss of Supply	Filter breakthrough	Tankering water from Gympie		Develop strategy for Mary Valley WTP upgrade to operate in dirty raw water events (linked to THM investigation)	Develop strategy for Mary Valley WTP upgrade to operate in dirty raw water events		Installation of tanker connection point is completed. Feasibility study is ongoing
Kandanga	UV Disinfection	Protozoa (Crypto/ Giardia) (Gympie, Mary Valley, Kinbombi)	UV failure	Fault alarm from UV system will interlock plant	Filtration - online monitoring and auto shutdown; Incident Management Plan		Update operational monitoring and CCP documents for all parameters required for effective disinfection		Mary Valley link to Gympie will influence the decision
Kilkivan	Bypass	All hazards	Accidental or deliberate use of bypass	Marked (blue); signed on GIS	Staff training - Not intentionally used	Refer to Whole of System RMIP (Bypass) Investigate potential additional bypasses in the network	Refer to Whole of System RMIP (Bypass)		Investigate
Kilkivan	Disinfection (hypo)	Chlorine	Chlorine overdose	Chlorination CCP	Operational monitoring		Installation of chlorine instrumentation		Investigate
Kilkivan		Bacteria/Virus (Running Creek bore - Kilkivan)	Chlorine underdose	Chlorination CCP			Installation of chlorine instrumentation		Investigate
Kilkivan		Chlorate	Breakdown of sodium hypochlorite				Refer to Whole of System RMIP (Chlorate)		Chlorate sampling scheduled to commence from January 2025.
Rainbow	Reservoirs	Bacteria/ Virus (Reticulation)	Ingress into tank	Sealed storages	Residual disinfection	Develop scope for Reservoir No.1 roof replacement	Replacement roof for Reservoir No.1		Program is progressing but still needs to be formalised.
Rainbow		Protozoa (Crypto/ Giardia) (Retic)	Ingress into tank	Sealed storages		Develop scope for Reservoir No.1 roof replacement	Replacement roof for Reservoir No.1		Program is progressing but still needs to be formalised.
Whole of System Risks		Bacteria/ Virus (Reticulation)	Cross contamination between sewer and water maintenance & operations	General staff awareness and training	Disinfectant residual; sewerage maintenance tools and equipment stay at the plant	Aquacard training for all Operations staff	Investigate supply options for 4% hypo		Ongoing
Whole of System Risks		All hazards	Human Error (either due to knowledge/training, resourcing or fatigue)	Staff training, fortnightly head operator/ reticulation meetings	All staff trained to Cert 3, CCPs, ongoing training, other procedures and work instructions; Water hygiene training	-	Roll out Aquacard training; Review all operational procedures listed in the DWQMP	Develop succession plan for operators; Install new verification monitoring locations (focus on reservoir outlets)	Succession Planning Ongoing Chlorine verification monitoring completed (except Jones Hill)
Whole of System Risks		Bacteria/ Virus (Reticulation)	Offline reservoir returned into service, supply of stagnant or potentially contaminated water to customers (with no chlorine residual barrier)	Dose chlorine, and undertake water quality testing before returning a reservoir to service.			Roll out Aquacard training		Ongoing
Whole of System Risks		All hazards	Operation of a bypass valve allowing untreated water into the reticulation	Various (refer to scheme risk assessments)		Cap and clearly mark all bypass valves	Alter bypass pipework to include air gaps		Have been advised that all WTP's have had bypasses air-gapped with exception of Gympie WTP.
Whole of System Risks		Chlorate	Breakdown of sodium hypochlorite (not relevant for the gas chlorine schemes)	Various (refer to scheme risk assessments)	Less stock on hand at smaller schemes (some issues when chlorine usage drops)	Review/implement inventory control and testing of hypo quality at time of purchase. Water testing	Investigative monitoring for chlorate to determine need/frequency for inclusion in verification monitoring		Chlorate sampling scheduled to commence from January 2025.
Whole of System Risks	Whole of System	Bacteria/ Virus (Reticulation)	Reservoir ingress	Reservoir integrity	Preventive maintenance programs (5 yearly cleaning unless required sooner, and external inspection); Draft Reservoir Inspection Procedure Disinfectant Residual	Finalise Reservoir Inspection Procedure	Investigate use of drones to inspect reservoir roofs	Program of reservoir hatch and ladder enclosure replacements (10 year capital program - ongoing)	Program is progressing but still needs to be formalised.
Whole of System Risks		Protozoa (Crypto/ Giardia) (Retic)	Flood	Pressurised network	Repair as soon as possible, disaster management plan, leakage management software		Convert flow/pressure monitoring from external hosting to GRC SCADA		Flow meters in and out of all treatment plants still to be confirmed.
Whole of System Risks		Loss of Supply	PLC failure/ lightning strike/ rough power	Reservoir storage	Incident management plan; Disaster management plan		Review control systems at WTPs and consider additional backup/ protections		PLC has been replaced, treatment plant may be upgraded in the future, replacing SCADA this FY.