



Drinking Water Quality Management Plan Report

Balonne Shire Council

SPID: 6

2017-18

This report has been prepared in accordance with the Drinking Water Quality Management Plan Report Guidance Note.

Table of contents

1	Introduction.....	1
2	Summary of scheme/s operated.....	1
3	DWQMP implementation.....	2
4	Verification monitoring - water quality information and summary	5
5	Incidents reported to the regulator.....	19
6	Customer complaints.....	20
7	DWQMP review outcomes	21
8	DWQMP audit findings.....	23

Table of tables

Table 1 – Summary of schemes	1
Table 2 – Risk management improvement program implementation status	3
Table 3 – Drinking water quality performance - verification monitoring.....	5
Table 4. E. coli compliance with annual value	13
Table 5 – Incidents reported to the regulator	19
Table 6 – Example: customer complaints about water quality	20
Table 7 – DWQMP review outcomes.....	21
Table 8 – DWQMP audit findings and status	24

1 Introduction

This report documents the performance of Balonne Shire Council's drinking water service with respect to water quality and performance in implementing the actions detailed in the Drinking Water Quality Management Plan (DWQMP) as required under the *Water Supply (Safety and Reliability) Act 2008* (the Act).

The report assists the Regulator to determine whether the approved DWQMP and any approval conditions have been complied with and provides a mechanism for providers to report publicly on their performance in managing drinking water quality.

2 Summary of scheme/s operated

Table 1 – Summary of schemes

Scheme	Water Source	Treatment processes	Treatment capacity	Towns supplied
St George	GAB Bore	N/A	N/A	St George
Dirranbandi	Balonne River / GAB Bore	Flocculation, Clarification, Filtration, Disinfection	1.0 ML/day	Dirranbandi
Bollon	GAB Bore	N/A	N/A	Bollon
Thallon	GAB Bore	N/A	N/A	Thallon
Hebel	GAB Bore	N/A	N/A	Hebel
Mungindi	Barwon River	Treated Water provided by Moree Plains Shire Council.	N/A	Mungindi

3 DWQMP implementation

The actions undertaken to implement the DWQMP are summarised below.

The adopted aesthetic and health limits for all drinking water schemes managed by the Balonne Shire Council are based on the physical, chemical and microbial limits set out in the ADWG 2011. Testing of physical and chemical parameters are undertaken quarterly. Testing for E. coli is undertaken weekly for the St George Water supply and monthly for all other schemes. A full list of the tested parameters can be found in table 3.

- **Progress in implementing the risk management improvement program**

Refer to Table 2 for a summary of progress in implementing each of the Improvement Program actions.

The actions undertaken to implement the risk management improvement program are discussed in Table 2.

Table 2 – Risk management improvement program implementation status

Scheme name	Ref	Component	Improvement actions	Target date	Actions taken to date	Status and revised target date	Responsible Officer / Position
St George, Dirranbandi		Reservoirs	Establish periodic cleaning program,	Ongoing	Ongoing water quality monitoring. Cleaning done on reactive basis. Regular cleaning to be included in asset management plan	In progress.	Project Engineer – Water, Sewerage and Infrastructure
All		Distribution	Establish periodic mains flushing program with focus on areas with long detention times or dead ends	Ongoing	Ongoing water quality monitoring. Flushing done on reactive basis. Regular flushing to be included in asset maintenance plan	In progress.	Project Engineer – Water, Sewerage and Infrastructure
All		Distribution	Recommendation from audit. Backflow prevention	June 18	Non return valves installed on tanker filling points. Ongoing risk managed by procedures	Ongoing	Project Engineer – Water, Sewerage and Infrastructure
All		Distribution	Monitor network for opportunistic bacteria.	Ongoing	Testing for Neagleria floweri and legionella included in monitoring program	Ongoing	Environmental Health Officer
All		Whole system	Develop operational and maintenance procedures with focus on hygiene.	June 17	Procedures established and reviewed annually	Ongoing	Project Engineer – Water, Sewerage and Infrastructure
Dirranbandi		Treatment	Upgrade low lift pump station to control treatment flow rates	June 17	Low lift pump station upgraded	Completed	Project Engineer – Water, Sewerage and Infrastructure
Dirranbandi		Treatment	Recommendation from audit, turbidity to be sampled directly after filtration .	June 17	Sample location adjusted as per audit recommendation	Completed	Project Engineer – Water, Sewerage and Infrastructure
Dirranbandi		Treatment	Monitor disinfection effectiveness	Ongoing	Target chlorination break point. Chlorination monitor connected to SCADA	Ongoing monitoring of effectiveness	Project Engineer – Water, Sewerage and Infrastructure

Scheme name	Ref	Component	Improvement actions	Target date	Actions taken to date	Status and revised target date	Responsible Officer / Position
Dirranbandi		Treatment	Monitor upgrades to coagulation system	June 17	Ongoing monitoring of system. Turbidity monitor connected to SCADA	Completed	Project Engineer – Water, Sewerage and Infrastructure
Dirranbandi		Treatment	Training for operator	Ongoing	Operator completed Cert III in Water Treatment Operations	Completed	Treatment Plant Operator
Mungindi		Distribution	Recommendation from audit, develop communication protocols with MPSC	June 18	Dialogue has commenced with MPSC	In progress	Project Engineer – Water, Sewerage and Infrastructure

4 Verification monitoring - water quality information and summary

This section discusses the compliance with the water quality criteria.

Table 3 – Drinking water quality performance - verification monitoring

Scheme name	Parameter	No. of samples required to be collected (as per the approved DWQMP)	No. of samples actually collected and tested	Water quality criteria (i.e ADWG health guideline value)	No. of non compliant samples	Comments
St George	PH	4	3	6.5-8.5 (Aesth)	1	Some Non-Compliances - ADWG Aesthetic Limit
St George	Total Hardness	4	4	200.00 (Aesth)	Nil	ADWG Compliant
St George	Alkalinity	4	4		Nil	ADWG Compliant
St George	Total Dissolved Ions	4	4		Nil	ADWG Compliant
St George	Total Dissolved Solids	4	4	500.00 (Aesth)	4	Some Non-Compliances - ADWG Aesthetic Limit
St George	Colour	4	4	15.00 (Aesth)	Nil	ADWG Compliant
St George	Turbidity	4	4	5.00 (Aesth)	Nil	ADWG Compliant
St George	Sodium	4	4	180.00 (Aesth)	4	Some Non-Compliances - ADWG Aesthetic Limit
St George	Potassium	4	4		Nil	ADWG Compliant
St George	Calcium	4	4		Nil	ADWG Compliant
St George	Magnesium	4	4		Nil	ADWG Compliant
St George	Chloride	4	4	250.00 (Aesth)	Nil	ADWG Compliant
St George	Fluoride	4	4	1.5 (Health)	Nil	ADWG Compliant

Scheme name	Parameter	No. of samples required to be collected (as per the approved DWQMP)	No. of samples actually collected and tested	Water quality criteria (i.e ADWG health guideline value)	No. of non compliant samples	Comments
St George	Nitrate	4	4	50 (Health)	Nil	ADWG Compliant
St George	Sulphate	4	4	500 (Health)	Nil	ADWG Compliant
St George	Iron	4	4	0.30 (Aesth)	Nil	ADWG Compliant
St George	Manganese	4	4	0.50 (Health)	Nil	ADWG Compliant
St George	Zinc	4	4	3.00 (Aesth)	Nil	ADWG Compliant
St George	Aluminium	4	4	0.20 (Aesth)	Nil	ADWG Compliant
St George	Copper	4	4	2.00 (Health)	Nil	ADWG Compliant
St George	E-coli	52	52	0.00 (Health)	Nil	ADWG Compliant
Dirranbandi	PH	4	3	6.5-8.5 (Aesth)	Nil	ADWG Compliant
Dirranbandi	Total Hardness	4	3	200.00 (Aesth)	Nil	ADWG Compliant
Dirranbandi	Alkalinity	4	3		Nil	ADWG Compliant
Dirranbandi	Total Dissolved Ions	4	3		Nil	ADWG Compliant
Dirranbandi	Total Dissolved Solids	4	3	500.00 (Aesth)	Nil	ADWG Compliant
Dirranbandi	Colour	4	3	15.00 (Aesth)	Nil	ADWG Compliant
Dirranbandi	Turbidity	4	3	5.00 (Aesth)	Nil	ADWG Compliant
Dirranbandi	Sodium	4	3	180.00 (Aesth)	4	ADWG Compliant
Dirranbandi	Potassium	4	3		Nil	ADWG Compliant

Scheme name	Parameter	No. of samples required to be collected (as per the approved DWQMP)	No. of samples actually collected and tested	Water quality criteria (i.e ADWG health guideline value)	No. of non compliant samples	Comments
Dirranbandi	Calcium	4	3		Nil	ADWG Compliant
Dirranbandi	Magnesium	4	3			ADWG Compliant
Dirranbandi	Chloride	4	3	250.00 (Aesth)	Nil	ADWG Compliant
Dirranbandi	Fluoride	4	3	1.5 (Health)	Nil	ADWG Compliant
Dirranbandi	Nitrate	4	3	50 (Health)	Nil	ADWG Compliant
Dirranbandi	Sulphate	4	3	500 (Health)	Nil	ADWG Compliant
Dirranbandi	Iron	4	3	0.30 (Aesth)	Nil	ADWG Compliant
Dirranbandi	Manganese	4	3	0.50 (Health)	Nil	ADWG Compliant
Dirranbandi	Zinc	4	3	3.00 (Aesth)	Nil	ADWG Compliant
Dirranbandi	Aluminium	4	3	0.20 (Aesth)	Nil	ADWG Compliant
Dirranbandi	Copper	4	3	2.00 (Health)	Nil	ADWG Compliant
Dirranbandi	E. Coli	52	50	0.00 (Health)	Nil	ADWG Compliant
Bollon	PH	4	4	6.5-8.5 (Aesth)	2	Some Non-Compliances - ADWG Aesthetic Limit
Bollon	Total Hardness	4	4	200.00 (Aesth)	Nil	ADWG Compliant
Bollon	Alkalinity	4	4		Nil	ADWG Compliant
Bollon	Total Dissolved Ions	4	4		Nil	ADWG Compliant
Bollon	Total Dissolved Solids	4	4	500.00 (Aesth)	4	Some Non-Compliances - ADWG Aesthetic Limit

Scheme name	Parameter	No. of samples required to be collected (as per the approved DWQMP)	No. of samples actually collected and tested	Water quality criteria (i.e ADWG health guideline value)	No. of non compliant samples	Comments
Bollon	Colour	4	4	15.00 (Aesth)	Nil	ADWG Compliant
Bollon	Turbidity	4	4	5.00 (Aesth)	Nil	ADWG Compliant
Bollon	Sodium	4	4	180.00 (Aesth)	4	Some Non-Compliances - ADWG Aesthetic Limit
Bollon	Potassium	4	4		Nil	ADWG Compliant
Bollon	Calcium	4	4		Nil	ADWG Compliant
Bollon	Magnesium	4	4		Nil	ADWG Compliant
Bollon	Chloride	4	4	250.00 (Aesth)	Nil	ADWG Compliant
Bollon	Fluoride	4	4	1.5 (Health)	Nil	ADWG Compliant
Bollon	Nitrate	4	4	50 (Health)	Nil	ADWG Compliant
Bollon	Sulphate	4	4	500 (Health)	Nil	ADWG Compliant
Bollon	Iron	4	4	0.30 (Aesth)	Nil	ADWG Compliant
Bollon	Manganese	4	4	0.50 (Health)	Nil	ADWG Compliant
Bollon	Zinc	4	4	3.00 (Aesth)	Nil	ADWG Compliant
Bollon	Aluminium	4	4	0.20 (Aesth)	Nil	ADWG Compliant
Bollon	Copper	4	4	2.00 (Health)	Nil	ADWG Compliant
Bollon	E. Coli	12	12	0.00 (Health)	Nil	ADWG Compliant
Thallon	PH	4	3	6.5-8.5 (Aesth)	1	Some Non-Compliances - ADWG Aesthetic Limit
Thallon	Total Hardness	4	4	200.00 (Aesth)	Nil	ADWG Compliant
Thallon	Alkalinity	4	4		Nil	ADWG Compliant

Scheme name	Parameter	No. of samples required to be collected (as per the approved DWQMP)	No. of samples actually collected and tested	Water quality criteria (i.e ADWG health guideline value)	No. of non compliant samples	Comments
Thallon	Total Dissolved Ions	4	4		Nil	ADWG Compliant
Thallon	Total Dissolved Solids	4	4	500.00 (Aesth)	4	Some Non-Compliances - ADWG Aesthetic Limit
Thallon	Colour	4	4	15.00 (Aesth)	Nil	ADWG Compliant
Thallon	Turbidity	4	4	5.00 (Aesth)	Nil	ADWG Compliant
Thallon	Sodium	4	4	180.00 (Aesth)	4	Some Non-Compliances - ADWG Aesthetic Limit
Thallon	Potassium	4	4		Nil	ADWG Compliant
Thallon	Calcium	4	4		Nil	ADWG Compliant
Thallon	Magnesium	4	4		Nil	ADWG Compliant
Thallon	Chloride	4	4	250.00 (Aesth)	Nil	ADWG Compliant
Thallon	Fluoride	4	4	1.5 (Health)	Nil	ADWG Compliant
Thallon	Nitrate	4	4	50 (Health)	Nil	ADWG Compliant
Thallon	Sulphate	4	4	500 (Health)	Nil	ADWG Compliant
Thallon	Iron	4	4	0.30 (Aesth)	Nil	ADWG Compliant
Thallon	Manganese	4	4	0.50 (Health)	Nil	ADWG Compliant
Thallon	Zinc	4	4	3.00 (Aesth)	Nil	ADWG Compliant
Thallon	Aluminium	4	4	0.20 (Aesth)	Nil	ADWG Compliant
Thallon	Copper	4	4	2.00 (Health)	Nil	ADWG Compliant
Thallon	E. Coli	12	12	0.00 (Health)	Nil	ADWG Compliant

Scheme name	Parameter	No. of samples required to be collected (as per the approved DWQMP)	No. of samples actually collected and tested	Water quality criteria (i.e ADWG health guideline value)	No. of non compliant samples	Comments
Hebel	PH	4	3	6.5-8.5 (Aesth)	1	Some Non-Compliances - ADWG Aesthetic Limit
Hebel	Total Hardness	4	4	200.00 (Aesth)	Nil	ADWG Compliant
Hebel	Alkalinity	4	4		Nil	ADWG Compliant
Hebel	Total Dissolved Ions	4	4		Nil	ADWG Compliant
Hebel	Total Dissolved Solids	4	4	500.00 (Aesth)	4	Some Non-Compliances - ADWG Aesthetic Limit
Hebel	Colour	4	4	15.00 (Aesth)	Nil	ADWG Compliant
Hebel	Turbidity	4	4	5.00 (Aesth)	Nil	ADWG Compliant
Hebel	Sodium	4	4	180.00 (Aesth)	4	Some Non-Compliances - ADWG Aesthetic Limit
Hebel	Potassium	4	4		Nil	ADWG Compliant
Hebel	Calcium	4	4		Nil	ADWG Compliant
Hebel	Magnesium	4	4		Nil	ADWG Compliant
Hebel	Chloride	4	4	250.00 (Aesth)	Nil	ADWG Compliant
Hebel	Fluoride	4	4	1.5 (Health)	Nil	ADWG Compliant
Hebel	Nitrate	4	4	50 (Health)	Nil	ADWG Compliant
Hebel	Sulphate	4	4	500 (Health)	Nil	ADWG Compliant
Hebel	Iron	4	4	0.30 (Aesth)	Nil	ADWG Compliant
Hebel	Manganese	4	4	0.50 (Health)	Nil	ADWG Compliant

Scheme name	Parameter	No. of samples required to be collected (as per the approved DWQMP)	No. of samples actually collected and tested	Water quality criteria (i.e ADWG health guideline value)	No. of non compliant samples	Comments
Hebel	Zinc	4	4	3.00 (Aesth)	Nil	ADWG Compliant
Hebel	Aluminium	4	4	0.20 (Aesth)	Nil	ADWG Compliant
Hebel	Copper	4	4	2.00 (Health)	Nil	ADWG Compliant
Hebel	E. Coli	12	12	0.00 (Health)	Nil	ADWG Compliant
Mungindi	PH	4	4	6.5-8.5 (Aesth)	Nil	ADWG Compliant
Mungindi	Total Hardness	4	4	200.00 (Aesth)	Nil	ADWG Compliant
Mungindi	Alkalinity	4	4		Nil	ADWG Compliant
Mungindi	Total Dissolved Ions	4	4		Nil	ADWG Compliant
Mungindi	Total Dissolved Solids	4	4	500.00 (Aesth)	Nil	ADWG Compliant
Mungindi	Colour	4	4	15.00 (Aesth)	Nil	ADWG Compliant
Mungindi	Turbidity	4	4	5.00 (Aesth)	Nil	ADWG Compliant
Mungindi	Sodium	4	4	180.00 (Aesth)	Nil	ADWG Compliant
Mungindi	Potassium	4	4		Nil	ADWG Compliant
Mungindi	Calcium	4	4		Nil	ADWG Compliant
Mungindi	Magnesium	4	4		Nil	ADWG Compliant
Mungindi	Chloride	4	4	250.00 (Aesth)	Nil	ADWG Compliant
Mungindi	Fluoride	4	4	1.5 (Health)	Nil	ADWG Compliant

Scheme name	Parameter	No. of samples required to be collected (as per the approved DWQMP)	No. of samples actually collected and tested	Water quality criteria (i.e ADWG health guideline value)	No. of non compliant samples	Comments
Mungindi	Nitrate	4	4	50 (Health)	Nil	ADWG Compliant
Mungindi	Sulphate	4	4	500 (Health)	Nil	ADWG Compliant
Mungindi	Iron	4	4	0.30 (Aesth)	Nil	ADWG Compliant
Mungindi	Manganese	4	4	0.50 (Health)	Nil	ADWG Compliant
Mungindi	Zinc	4	4	3.00 (Aesth)	Nil	ADWG Compliant
Mungindi	Aluminium	4	4	0.20 (Aesth)	Nil	ADWG Compliant
Mungindi	Copper	4	4	2.00 (Health)	Nil	ADWG Compliant
Mungindi	E. Coli	12	12	0.00 (Health)	Nil	ADWG Compliant

Table 4. E. coli compliance with annual value

Drinking water scheme: St George

Year	2017 – 2018											
Month	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
No. of samples collected	4	5	5	5	4	4	5	3	4	4	4	5
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	50	49	50	50	51	51	51	52	51	51	51	51
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

Drinking water scheme: Dirranbandi

Year	2017 – 2018											
	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
No. of samples collected	4	3	4	5	4	5	5	4	4	4	3	5
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	50	49	49	48	49	48	49	50	50	50	50	49
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

Drinking water scheme: Bollon

Year	2017 – 2018											
	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
No. of samples collected	1	1	1	1	1	1	1	1	1	1	1	1
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	11	11	11	11	11	11	12	12	12	12	12	12
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

Drinking water scheme: Thallon

Year	2017 – 2018											
	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
No. of samples collected	1	1	1	1	1	1	1	1	1	1	1	1
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	1	1	1	1	1	1	1	1	1	1	1	1
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

Drinking water scheme: Hebel

Year	2017 – 2018											
	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
No. of samples collected	1	1	1	1	1	1	1	1	1	1	1	1
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	12	12	12	12	12	12	12	12	12	12	12	12
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

Drinking water scheme: Mungindi

Year	2017 – 2018											
	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
No. of samples collected	1	1	1	1	1	1	1	1	1	1	1	1
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	12	12	12	12	12	12	12	12	12	12	12	12
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

5 Incidents reported to the regulator

The incidents reported to the regulator and management actions undertaken over the financial year are provided in this section.

Refer to section 2.3.5 in the Guidance Note. Table 5 can be used to present a summary of the incidents you have reported to the regulator. Use the examples in Table 5 in the Guidance Note to populate this table.

Table 5 – Incidents reported to the regulator

Incident date	Scheme / location	Parameter / issue	Preventive actions
Nil			

6 Customer complaints

This section discusses details of any complaints received about the drinking water service

Table 6 – Customer complaints about water quality

Scheme	Health concern	Dirty water	Taste and odour	Other
St George	0	1	0	1
Dirranbandi	0	0	0	0
Bollon	0	0	0	0
Thallon	0	0	0	0
Hebel	0	0	0	0
Mungindi	0	0	0	0
Total	0	1	0	1

There were 20 reticulation system leaks/breaks in the reporting period, but only 2 water quality complaints recorded. The dirty water complaint in St George was investigated and found to be an internal plumbing issue. The other complaint related to a drop in pressure.

7 DWQMP review outcomes

A DWQMP amendment application was submitted 7 Dec 2017. The application was approved with conditions on 6 March 2018.

A summary of the outcomes of the review and how issues/changes raised in the review, were actioned is provided in the following table.

Table 7 – DWQMP review outcomes

Review Date: 07/12/117

Review component	Findings	Outcomes	Status of actions	Responsible Officer / Position
Service description	No changes	Not applicable	Not applicable	
Details of infrastructure	For Dirranbandi scheme, include raw surface water bypass, clarify chemical used and dosing locations	DWQMP amended	Amendments included in resubmitted application	Project Engineer – Water, Sewerage and Infrastructure
Water quality and catchment characteristics	No changes	Not applicable	Not applicable	
Risk assessment	No changes	Not applicable	Not applicable	
Operations and maintenance procedures	Need to update section 5.2 to clarify the process used for maintaining document procedures,	Update to section 5.2 required.	To be completed in 2019 review.	Project Engineer – Water, Sewerage and Infrastructure
Management of incidents and emergencies	Need to update Regulator and Queensland Health contact details	Table 5.6 updated with Amended contact details for DNRME and Queensland Health.	Amendments included in resubmitted application	Project Engineer – Water, Sewerage and Infrastructure
Risk management improvement program	Need to review target dates in tables 5.7 and 5.8	Updates to table 5.7 and 5.8 required.	To be completed in 2019 review.	Project Engineer – Water, Sewerage and Infrastructure

Review component	Findings	Outcomes	Status of actions	Responsible Officer / Position
Service wide information management	No changes	Not applicable	Not applicable	
Operational monitoring	Need to update table 6.2 to include all available on-line and other relevant monitoring for Dirranbandi scheme	Updates to table 6.2 required	To be completed in 2019 review.	Project Engineer – Water, Sewerage and Infrastructure
Verification monitoring	Need to consider relocating some operation monitoring parameters to verification monitoring (Table 6.4) , and include THM monitoring.	Appropriate location of parameters to be considered. THM monitoring to be included.	To be completed in 2019 review.	Project Engineer – Water, Sewerage and Infrastructure

8 DWQMP audit findings

No audit was conducted during the reporting period 01/07/17 to 30/06/18.

An audit of Council's DWQMP was undertaken by Viridus Consulting in June 2017. The audit findings and any recommendations and/or opportunities for improvement (OFI), including how these were actioned are detailed in the following table.

The actions undertaken to address the audit recommendations are outlined in Table 8.

Table 8 – DWQMP audit findings and status

Item	Recommendation or OFI	Action	Status of actions	Responsible Officer / Position
Ensure that the entire years monitoring program is included in annual report	Recommendation	Entire years monitoring program should be included in annual report	Completed. All available monitoring data included in annual report	Project Engineer Water Sewerage and Infrastructure
Ensure practices and procedures are in place to hygienically repair broken mains.	Recommendation	Hygiene practices and procedures should be developed.	Procedures developed.	Project Engineer Water Sewerage and Infrastructure
Update the Dirranbandi scheme description.	Recommendation	Schematic and description should be updated	Completed. Updated in 2017 DWQMP review	Project Engineer Water Sewerage and Infrastructure
Consider the risk of crews working on water and sewerage when reviewing the plan	Recommendation	Risk of dual purpose crews should be considered.	Ongoing. Risk managed by procedures	Project Engineer Water Sewerage and Infrastructure
Consider the risk of no backflow prevention on tanker filling stations.	Recommendation	Risk of backflow at filling points should be considered	Completed. Non return valves installed on filling points.	Project Engineer Water Sewerage and Infrastructure
Consider the risk of cross connection of dual reticulation in St George	Recommendation	Risk of cross connection should be considered	Ongoing. Risk managed by procedures	Project Engineer Water Sewerage and Infrastructure
Consider the risk of opportunistic pathogens, Naegleria floweri and Legionella in the distribution system.	Recommendation	Risk of opportunistic pathogens should be considered.	Testing added to monitoring program	Environmental Health Officer
Operation control at Dirranbandi WTP to be improved.	Recommendation	Operational control improvements should be addressed	Completed. Audit recommendations implemented.	Project Engineer Water Sewerage and Infrastructure
Develop a communications protocol with MPSC for water supply at Mungindi	Recommendation	Communications protocol should be developed with MPSC	In progress	Project Engineer Water Sewerage and Infrastructure

Item	Recommendation or OFI	Action	Status of actions	Responsible Officer / Position
Ensure DWQMP annual report is submitted on time	OFI	DWQMP annual report should be submitted by deadline.	Ongoing	Project Engineer Water Sewerage and Infrastructure
Develop a reservoir cleaning program for Dirranbandi	OFI	Reservoir cleaning program should be developed.	To be formalised in Asset Management Plan	Project Engineer Water Sewerage and Infrastructure
Ask for certificates of analysis from chemical suppliers	OFI	Certificates of analysis should be provided by suppliers.	Ongoing. Suppliers are providing COA's	Project Engineer Water Sewerage and Infrastructure
Prepare procedures detailing hygiene requirements for crews working on water distribution system	OFI	Hygiene practices and procedures should be developed.	Procedures developed.	Project Engineer Water Sewerage and Infrastructure
No need to include raw water infrastructure maintenance in plan.	OFI	Raw water infrastructure should be removed from plan	Completed. Plan modified	Project Engineer Water Sewerage and Infrastructure
Establish calibration program for online instruments	OFI	A calibration program should be established.	Calibration kits purchased	Project Engineer Water Sewerage and Infrastructure
Remove contact list from plan to enable it to be updated more frequently	OFI	Contact list should be removed from plan.	To be considered in next review.	Project Engineer Water Sewerage and Infrastructure
Consider how reliant the system is on the EHO.	OFI	Should consider how reliant the system is on the EHO	Ongoing	Environmental Health Officer
Suggest BSC and MPSC share water quality data	OFI	BSC and MPSC should share water quality data.	In progress as part of communications protocol.	Project Engineer Water Sewerage and Infrastructure
Consider sending some samples to NATA accredited laboratory for verification	OFI	Some samples should be tested by NATA accredited laboratories	Completed. Samples periodically tested by NATA laboratories	Environmental Health Officer
The RMIP should be revised in upcoming plan review	OFI	The RMIP should be revised in upcoming plan review	Completed.	Project Engineer Water Sewerage and Infrastructure
The plan needs to reference Magiq, and should include all records such as maintenance, calibration and incident records.	OFI	The plan should reference MAGIQ and include all records.	Completed. MAGIQ referred to in plan, and all records accordingly	Project Engineer Water Sewerage and Infrastructure