

Drinking Water Quality Management Plan (DWQMP) report

2017/2018

Murweh Shire Council

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Glossary of terms

ADWG 2004	Australian Drinking Water Guidelines (2004). Published by the National Health and Medical Research Council of Australia
ADWG 2011	Australian Drinking Water Guidelines (2011). Published by the National Health and Medical Research Council of Australia
<i>E. coli</i>	<i>Escherichia coli</i> , a bacterium which is considered to indicate the presence of faecal contamination and therefore potential health risk
HACCP	Hazard Analysis and Critical Control Points certification for protecting drinking water quality
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
MPN/100mL	Most probable number per 100 millilitres
CFU/100mL	Colony forming units per 100 millilitres
<	Less than
>	Greater than

1. Introduction

This report documents the performance of Murweh Shire Council 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.

This template has been prepared in accordance with the *Water Industry Regulatory Reform – drinking water quality management plan report factsheet* published by the Department of Energy and Water Supply, Queensland, accessible at www.dews.qld.gov.au.

2. Overview of Operations (optional)

3. Actions taken to implement the DWQMP

Progress in implementing the risk management improvement program.

The water schemes within the Murweh Shire are extremely simple in design with no treatment plant used in Morven and Charleville, and Augathella using only an in-line UV disinfection unit.

The DWQMP was essentially a written report of the three water schemes in place, and in this regard it may be considered that the DWQMP has been fully implemented.

The UV disinfection unit for Morven was purchased following approval in previous budget. This unit has now been installed and is operational. The Risk Management Improvement plan (RMIP) will be amended to reflect this.

Revisions made to the operational monitoring program to assist in maintaining the compliance with water quality criteria¹ in verification monitoring.

No revisions have been made for the 2017/2018 period.

Amendments made to the DWQMP

Following an external audit of the DWQMP, consultants were engaged in February to amend the DWQMP to align with the auditor's recommendations. This has been completed and approved by the regulator.

4. Compliance with water quality criteria for drinking water

Murweh Shire tests the water from the three water schemes for the presence of *E. coli*, and results are reported as most probable number (MPN) in a 100ml sample. The table below presents the results of water sampling for the financial year 2017/18

¹ Refer to *Water Quality and Reporting Guideline for a Drinking Water Service* for the water quality criteria for drinking water.

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total Samples	Non-Compliant
Augathella	6	2	4	5	3	2	6	3	3	5	4	3	46	0
Charleville	4	6	6	6	6	5	6	5	5	5	7	5	66	0
Morven	3	2	3	3	3	2	3	3	3	4	4	3	36	0

There were no non-compliant samples (where *E. coli* was detected) for the 2017/2018 period.

5. Notifications to the Regulator under sections 102 and 102A of the Act

There were no non-compliant samples taken and therefore no notifications were made to the regulator

6. Customer complaints related to water quality

Murweh Shire Council is required to report on the number of complaints, general details of complaints, and the responses undertaken.

Throughout the year the following complaints about water quality were received:

Table 1 - complaints about water quality.

	Suspected Illness	Discoloured water	Taste and odour	Total
Augathella	0	0	0	0
Charleville	0	0	0	0
Morven	0	0	0	0
Total	0	0	0	0

Suspected Illness

Complaints are sometimes received from customers who suspect their water may be associated with an illness they are experiencing. Murweh Shire Council investigates each complaint relating to alleged illness from our water quality, typically by testing the customers tap and closest reticulation sampling point for the presence of *E. coli*.

During 2017/2018, there were no confirmed cases of illness arising from the water supply system.

Discoloured water

No customer complaints were received from within the Murweh Shire relating to dirty water.

Taste and odour

No complaints were received relating to taste and odour of the water provided to users by the Murweh Shire Council

7. Findings and recommendations of the DWQMP auditor

Murweh Shire Council's audit was required to be completed by 9th October 2017. It was decided to perform the audit seven months earlier (March) so that any findings and recommendations from the audit could be budgeted for.

The audit report was provided as an attachment in the DWQMP report for 2016/2017.

8. Outcome of the review of the DWQMP and how issues raised have been addressed

A regular review of the DWQMP was conducted between 1st & 2nd May 2018, and covered the time period from approval of DWQMP until current. The purpose of the review was to ensure that the DWQMP remains relevant, having regard to the operation of the drinking water service. The review was conducted by the Director of Environmental and Health Services.

There have been no hazardous events that affected the quality of drinking water during the year which were not addressed in the DWQMP.

The review was the first to be conducted since the amendments by consultants in February 2018 (subsequently approved by the regulator) and predictably no issues were identified.

Appendix A – Summary of compliance with water quality criteria

The results from the verification monitoring program have been compared against the levels of the water quality criteria specified by the Regulator in the *Water Quality and Reporting Guideline for a Drinking Water Service*.

The reported statistics do not include results derived from repeat samples, or from emergency or investigative samples undertaken in response to an elevated result.

Table 2 - Verification monitoring results

Scheme name	Scheme component	Parameter	Units	Frequency of sampling	Total No. samples collected	No. of samples in which parameter was detected	No. of samples exceeding water quality criteria	Min	Max	Average (Mean)	Limit of reporting	Laboratory name
Augathella Water Supply	Reticulation	<i>E. coli</i>	mg/L	Monthly	46	0	0	0.0	1.0			In-house
Charleville Water Supply	Reticulation	<i>E. coli</i>	mg/L	Weekly	66	0	0	0.0	1.0			In-house
Morven Water Supply	Reticulation	<i>E. coli</i>	mg/L	Monthly	36	0	0	0.0	1.0			In-house
Augathella Water Supply	Reticulation	Chemicals		Ad-Hoc	1	Details of full chemical analysis may be found in table 4.						Qld Health
Charleville Water Supply	Reticulation	Chemicals		Ad-Hoc	1							Qld Health
Morven Water Supply	Reticulation	Chemicals		Ad-Hoc	1							Qld Health

Testing for *E. coli* is conducted in house because it is not possible to deliver samples to the closest NATA accredited laboratory within the 18 hour timeframe that guarantees accuracy of subsequent testing.

Table 3 – Reticulation *E. coli* verification monitoring 2016/2017

Augathella

Month	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
No. of samples collected	6	2	4	5	3	2	6	3	3	5	4	3
No. of samples collected in which <i>E. coli</i> was 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	48	44	46	48	45	45	48	48	45	47	45	46
No. of failures for previous 12 month period	0	3	3	3	3	3	3	3	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											

Charleville

Month	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
No. of samples collected	4	6	6	6	6	5	6	5	5	5	7	5
No. of samples collected in which <i>E. coli</i> was 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	57	58	60	60	61	62	62	63	63	64	66	66
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											

Morven

Month	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
No. of samples collected	3	2	3	3	3	2	3	3	3	4	4	3
No. of samples collected in which <i>E. coli</i> was 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	29	27	28	29	30	30	35	35	34	35	35	36
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											

Table 4 – Results of Chemical Analysis of Reticulated Water Supplies – Sample Date 19th December 2017

Parameter	Augathella		Charleville		Morven	
Conductivity (µS/cm at 25°C)	853	✓	496	✓	300	✓
pH at 22°C	8.82	✓	8.55	✓	8.04	✓
Total Hardness (as CaCO ₃)	6.0	✓	10	✓	2.9	✓
Temporary Hardness (mg/L CaCO ₃)	6.0	✓	10	✓	2.9	✓
Alkalinity (mg/L CaCO ₃)	218	✓	153	✓	147	✓
Residual Alkalinity (meq/L)	4.2	✓	2.9	✓	2.9	✓
Silica (mg/L)	25	✓	29	✓	23	✓
Total Dissolved Ions (mg/L)	604	✓	363	✓	268	✓
Total Dissolved Solids (mg/L)	503	✓	302	✓	201	✓
True Colour (Hazen)	<1	✓	<1	✓	13	✓
Turbidity (NTU)	<1	✓	<1	✓	2	✓
Sodium Na ⁺	190	✓	110	✓	76	✓
Potassium K ⁺	1.0	✓	2.2	✓	1.4	✓
Calcium Ca ⁺⁺	2.3	✓	4.0	✓	1.1	✓
Magnesium Mg ⁺⁺	<0.1	✓	<0.1	✓	<0.1	✓
Hydrogen H ⁺	0.0	✓	0.0	✓	0.0	✓
Bicarbonate HCO ₃ ⁻	248	✓	178	✓	177	✓
Carbonate CO ₃ ⁻⁻	9.0	✓	3.9	✓	1.1	✓
Hydroxide OH ⁻	0.1	✓	0.1	✓	0.0	✓
Chloride Cl ⁻	100	✓	51	✓	11	✓
Fluoride F ⁻	0.16	✓	0.34	✓	0.37	✓
Nitrate NO ₃ ⁻	0.6	✓	<0.5	✓	<0.5	✓
Sulphate SO ₄ ⁻⁻	48	✓	16.0	✓	<1	✓
Iron (Fe)	<0.01	✓	<0.01	✓	0.32	✓
Manganese (Mn)	0.01	✓	<0.01	✓	<0.01	✓
Zinc (Zn)	<0.01	✓	<0.01	✓	0.01	✓
Aluminium (Al)	<0.05	✓	<0.05	✓	<0.05	✓
Boron (B)	0.09	✓	0.04	✓	0.03	✓
Copper (Cu)	<0.03	✓	<0.03	✓	<0.03	✓

Key: ✓ = within required levels
 ✓ = within required levels but outside recommended range