



## RICHMOND SHIRE COUNCIL

ABN 47 039 843 844

65 Goldring Street , Richmond, Qld 4822

P.O.Box 18, Richmond, Qld 4822

T (+61) (07) 47 193 377 F (+61) (07) 47 193 372

Email: [enquiries@richmond.qld.gov.au](mailto:enquiries@richmond.qld.gov.au)

Web: [www.richmond.qld.gov.au](http://www.richmond.qld.gov.au)

# DRINKING WATER QUALITY MANAGEMENT PLAN (DWQMP) REPORT 2016 / 2017 SERVICE PROVIDER NO. 111



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## **1 Introduction**

This report documents the performance of Richmond Shire Council's Water Treatment Plant'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 Overview of operations**

Water for the Richmond water supply scheme is obtained from two (2) bores, (Bore 5 and Bore 6) which are drawn from the Great Artesian Basin at depths between 336m and 405m. Water from these two (2) bores is treated by our water treatment plant using oxidation, coagulation, and direct filtration method. Bore 6 is pre-dosed with chlorine before it enters four raw water tanks, where bores 5 & 6 are aerated inside the raw water tanks. After this process the water is dosed with Alum before going through 3 independent trains of 3 flocculation tanks per train to form a floc which then flows through 3 trains of 5 filters per train. Iron & manganese is removed from the water via dual media filtration that consists of activated carbon and filter sand. The water is then dosed with chlorine for disinfection purposes before it enters a 1.5 megalitre clear water tank. The water is then pumped into the watermain reticulation system using variable speed drive pumps.

## **3 Actions taken to implement the DWQMP**

The Richmond Shire Council's (RSC) DWQMP is currently under review and due for submission on the 19<sup>th</sup> January 2018. The current revision is a significant one which updates system processes to include the water treatment plant, verification and operational monitoring programs as well as numerous new procedures.

## **4 Compliance with water quality criteria for drinking water**

All testing this financial year did not reach the limits for reporting parameters for E.coli, Chlorine, pH, turbidity, Iron and Manganese. Summary statistics for key parameters concerning public health can be seen in the tables in Section 9 – Appendix A below;

Richmond Shire Council undertakes routine internal monitoring and testing for pathogens including E.coli and coliforms. Data for this analysis is not presented graphically nor in summary statistics because no coliforms nor E.coli have been detected. Over 127 samples from the reticulation and the treatment plant outlet collected and analysed between 2016-2017 no detections of coliforms or E.coli have been noted.

As discussed with DEWS representatives in a teleconference on the 30<sup>th</sup> October 2017 (Atul Panchi, Ted Aldred and Natalia Zharenkova) Richmond Shire has failed to complete the correct external verification analysis. A revised verification monitoring program is being developed for implementation in 2018 as a key part of the current update of the DWQMP.

## 5 Notifications to the Regulator

This financial year there were zero instances where the Regulator was notified under sections 102 and 102A of the Act.

## 6 Customer complaints related to water quality

This financial year there were zero complaints received regarding water quality ie, suspected illness, discoloured water or taste and odour issues.

## 7 Findings and recommendations of the DWQMP auditor

The audit has not been undertaken this financial year as it is due 9/07/2018.

## 8 Outcome of the review of the DWQMP

A review conducted on the 19<sup>th</sup> December 2016 has highlighted changes that are currently being updated in our DWQMP. Richmond Shire Council has submitted two drafts for review by DEWS and will be submitting a final updated DWQMP on the 19<sup>th</sup> January 2018.

## 9 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 as none of these events have occurred.

<b>Descriptive Summary Statistics - Free Chlorine (mg/L) - Richmond Water Supply</b>				
	<i>Bore 6 Dosed Free Chlorine Residual, mg/L</i>	<i>Combined Raw Water Free Chlorine Residual, mg/L (Post Oxidation Tanks)</i>	<i>Filtered Water (Dosed) Free Chlorine Residual, mg/L</i>	<i>Water to Town Free Chlorine residual, mg/L</i>
Mean	1.31	0.22	0.73	0.77
Median	1.27	0.16	0.77	0.76
Mode	1.66	0.13	0.77	0.75
Minimum	0.02	0	0	0.21
Maximum	2.7	1.13	1.49	1.45
Count	138	145	140	145
Confidence Level(95.0%)	0.09	0.03	0.04	0.03

<b>Descriptive Summary Statistics - Turbidity (ntu) - Richmond Water Supply</b>			
	Raw water Turbidity	Filtered Water Turbidity	Town Water Turbidity
Mean	0.963	0.173	0.206
Median	0.660	0.140	0.175
Mode	0.540	0.120	0.170
Minimum	0.074	0.070	0.080
Maximum	14.800	0.960	0.690
Count	136	136	136
Confidence Level(95.0%)	0.255	0.018	0.017

<b>Descriptive Summary Statistics - Iron and Manganese (mg/L) - Richmond Water Supply</b>				
	<i>Raw Water Iron</i>	<i>Raw Water Manganese</i>	<i>Town Water Iron</i>	<i>Town Water Manganese</i>
Mean	0.918	0.046	0.051	0.019
Median	0.835	0.044	0.050	0.019
Mode	0.820	0.042	0.030	0.024
Minimum	0.650	0.024	0.000	0.001
Maximum	1.870	0.076	0.120	0.041
Count	24.000	24.000	24.000	24.000
Confidence Level(95.0%)	0.102	0.004	0.014	0.005

<b>Descriptive Summary Statistics – Ecoli and Coliforms (mg/L) - Richmond Water Supply</b>		
	<i>Town Water Iron</i>	<i>Town Water Manganese</i>
Mean	0	0
Median	0	0
Mode	0	0
Minimum	0	0
Maximum	0	0
Count	127	127
Confidence Level(95.0%)	0	0

