SPID No. 541

Drinking Water Quality Management Plan (DWQMP)

Annual Report

2019/20

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

Contents

List of Tables

Notation and Abbreviations

<	Less than
>	Greater than
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
ALS	Australian Laboratory Services Laboratory Group
CFU/100mL	Colony forming units per 100 millilitres
E. coli	Escherichia coli, a bacterium which is considered to indicate the presence of faecal contamination and therefore potential health risk
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
QUU SAS	Queensland Urban Utilities Scientific Analytical Services
SMBI	Southern Moreton Bay Islands

1 Introduction

This report documents the performance of Redland City Council's (Service Provider Identification 541) drinking water service with respect to water quality and performance in implementing the actions detailed in the DWQMP as required under the Water Supply (Safety and Reliability) Act 2008 (the Act) for the 2019-20 financial year.

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 report has been prepared in accordance with the DWQMP report guidance note 2018 published by the Department of Natural Resource, Mines and Energy, Queensland, accessible at www.dnrme.qld.gov.au.

2 Summary of schemes operated

Redland City Council covers an area of approximately 537 square kilometres and has a population of approximately 155,000 people. Redland City Council provides drinking water to Redland City residents through four water supply schemes:

Table 2.1 – Summary of Schemes (owned and operated by Seqwater)

Scheme	*Water Source**
Redland City and Southern Moreton Bay Islands	• Eastern Pipeline Interconnector • North Stradbroke Island WTP • Capalaba WTP
Dunwich	• Dunwich WTP
Amity Point	• Amity Point WTP
Point Lookout	• Point Lookout WTP

**Refer to Seqwater annual report for details of WTP process and capacity*

Redland City Council is responsible for receiving bulk water from Seqwater and delivering it to residents through its distribution network. This is done whilst ensuring that the water meets the Australian Drinking Water Guidelines (ADWG).

Redland City Council manages drinking water quality through an approved Drinking Water Quality Management Plan (DWQMP) which protects public health by ensuring the provision of a safe water supply.

Redland City Council manages, operates and maintains pumping stations and mains as part of its distribution network. Redland City Council manages, operates and maintains reservoirs in each of the North Stradbroke Island (NSI) township schemes. Seqwater owns and operates all mainland reservoirs. Redland City Council does not operate any re-chlorination facilities in its network.

3 DWQMP Implementation

3.1 Progress in implementing the risk management improvement program

During the reporting period, the acting Compliance and Reporting Service Manager continued to implement the risk management improvement program.

The risk management improvement program implementation status is included in Appendix A.

3.2 Revisions made to the operational monitoring program

Verification monitoring is the only available option to monitor drinking water quality in the Redland City Council area. Seqwater owns, operates and monitors all chlorine dosing systems at the treatment plants and reservoirs and is responsible for operational monitoring of the system.

The sample collection and field analysis for the verification monitoring program for the entire financial year was contracted out to Queensland Urban Utilities Scientific Analytical Services Laboratory.

3.3 Amendments made to the DWQMP

A review of the DWQMP was submitted for approval to the Regulator on 14 June 2018, and approved on 27 August 2018. The next internal review was due to be completed by 1 July 2020 but a request for extension due to COVID19 impacts was submitted to the Department of Natural Resources, Mines and Energy on 15 June 2020. The extension request was approved, with a new due date being 12 October 2020. The updated DWQMP was submitted to the department on 7 October 2020. The report was prepared in accordance with the 2018 DWQMP.

4 Verification monitoring - water quality information and summary

The results from the verification monitoring program for *E. coli* have been compared against the water quality criteria specified in the DNRME *Drinking Water Quality Management Plan Report, Guidance Note*, 2018.

The results from the verification monitoring program for all other parameters have been compared against the National Water Quality Strategy, *Australian Drinking Water Guidelines 6 2011*, Version 3.5 updated August 2018.

The reported statistics do not include results derived from repeat samples, or from emergency or investigative samples undertaken in response to an elevated result or incident such as a main break.

The verification monitoring summaries are included in Appendix B.

5 Incidents reported to the regulator

This financial year there was one (1) instance where the Regulator was notified under sections 102 or 102A of the Act.

The 19/20 verification monitoring program identified an E.coli exceedance on 12 August 2019 in the Heinemann Road Reservoir zone. Additional follow up monitoring did not detect any further exceedances and the cause was unknown.

6 Customer complaints related to water quality

Redland City 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 6.1– Complaints about water quality (total per 1000 connections)

Water Supply Scheme	Connections*	Health Concern	Discoloured Water	Taste and Odour	Total
Redland City Mainland	67 728	0.03	1.58	0.59	2.20
Dunwich	475	0.00	0.00	0.00	0.00
Point Lookout	1 209	0.00	0.00	0.00	0.00
Amity Point	402	0.00	2.49	0.00	2.49
Total*	69 814	0.03	1.55	0.57	2.15

** Total connected properties including vacant land*

6.1 Suspected illness

Complaints are sometimes received from customers who suspect their water may be associated with an illness they are experiencing. Redland City Council investigates each complaint relating to alleged illness from our water supply, typically by taking samples at the customer's water meter and closest verification sampling point, testing parameters vary based on the health complaint.

During 2019/20 there were no confirmed cases of illness arising from the water supply system.

6.2 Discoloured water

As a response to any discoloured water customer complaints, various water mains were flushed in the vicinity of the complaint.

A regular mains flush program is in place to address this issue.

Dirty water complaints were generally related to dead-end mains and distribution system areas with low consumption. Associated areas were flushed to remove the dirty water.

6.3 Taste and odour

The taste and odour complaints received are usually related to the taste of chlorine in the water supply. Investigation of each complaint found no public health risks. Where there was a complaint of an unusual taste or odour that could not be explained, samples were collected and checked using an internal water taste and odour panel to assist in determining the veracity of the complaints.

All samples tested complied with ADWG for parameter tested.

Staff explained to customers the importance of free chlorine in drinking water.

7 DWQMP Review Outcomes

There were no new hazards or hazardous events identified during the year that were not addressed in the approved DWQMP. Therefore there was no formal review of the DWQMP during 2019/20. The next internal review is due to be completed before 12 October 2020.

8 DWQMP audit findings

No external DWQMP audit was carried out in 2019/20. As per the *Repeal and Re-issue of the Information Notice for the Decision about an approval of a Drinking Water Management Plan* dated 24 June 2020, the next external DWQMP audit is due by 12 October 2021.

Appendix A - Implementation of the DWQMP Risk Management Improvement Program

Table A.1 – Risk management improvement program implementation status 2019 - 2020

Ref No.	Risk Type	Management Measure / Requirement	Proposed Action/s	Priority	Responsibility	Due Date	Status	Date Reviewed	Review Comments	New Close out Date	Status
RMIP-GI8	General Improvement	Need to develop a system so O & M staff can more effectively provide asset condition feedback for use in asset management and planning.	Develop a system so O & M staff can more effectively provide asset condition feedback for use in asset management and planning.	2	Kevin McGuire	30/06/2013	Underway	27/05/2014	RCC commenced a project to replace its current maintenance management system. This project should provide better systems for asset condition feedback & recording. Go-live and system testing programmed for end of 2019 calendar year.	30/06/2020	Completed 24/02/20
RMIP-G18	General Improvement	Manage water quality trends better	Procure database software solution integrated with RCC's BI	3	Lara Harland	30/06/2019	Underway	30/06/2019	Database purchased and is now operational; data transfer is being implemented. Data is currently being put into both systems, it should be fully operational with the spreadsheets no longer used by the end of the year.	31/12/2019	Completed 30/09/20
RMIP-G19	General Improvement	Review ERP & Develop training and testing modules	Complete review of ERP including training examples	2	Kevin McGuire	30/06/2018	Underway	30/06/2019	Training is done annually with DWQMP review and the co-ordinated region-wide Operation Hydra. The plan needs to be updated to include cyber security	30/06/2020	Completed 30/09/20
RMIP-G23	General Improvement	New health based requirements based on change from long-term to acute health risk for some DBPs (eg THM).	Develop procedure	3	Lara Harland	31/07/2020	Underway		Have obtained information from other service providers to use as input to the new procedure	31/12/2020	Transferred to the 2020 Improvement Program

Appendix B- Summary of compliance with water quality criteria

Table B.1 – Verification Monitoring Redland City and SMBI Supply Scheme 2019 - 2020

Parameter	Laboratory Name	Unit of Measure	Limit of Reporting	Frequency of Sampling	Total No of Samples Taken	No of Samples in which Parameter Detected	Health Guidelines Limits	No of Samples Exceeding Health Guidelines Value	Min Value	Max Value	Average Value
Alkalinity	QUU SAS	mg/L	1	Quarterly	20	20			41	74	57
Aluminium ICPMS	QUU SAS	mg/L	0.001	Quarterly	21	21			0.022	0.045	0.035
Arsenic ICPMS	QUU SAS	mg/L	0.001	Quarterly	21	0	0.01		<0.001	<0.001	0
Boron ICPMS	QUU SAS	mg/L	0.001	Quarterly	21	21	4		0.011	0.044	0.022
Cadmium ICPMS	QUU SAS	mg/L	0.001	Quarterly	21	0	0.002		<0.001	<0.001	0
Calcium ICPMS	QUU SAS	mg/L	0.1	Quarterly	21	21			18.0	40.0	24.1
Chloride	QUU SAS	mg/L	1	Quarterly	20	20			22	61	39
Free Chlorine	QUU SAS	mg/L	0.1	Weekly	2,233	2,168	5		<0.1	4.4	0.8
Chromium ICPMS	QUU SAS	mg/L	0.001	Quarterly	21	7	0.05		<0.001	0.001	0
Colour - True	QUU SAS	HU	2	Quarterly	20	1			<1.0	1.0	0.1
Conductivity at 25 deg C	QUU SAS	µS/cm	1	Quarterly	22	22			160	390	271
Copper ICPMS	QUU SAS	mg/L	0.001	Quarterly	21	21	2		0.002	0.022	0.009
Total Cyanide	ALS	mg/L	0.004	Quarterly	20	0	0.08		<0.004	<0.004	0
Fluoride	QUU SAS	mg/L	0.1	Weekly	130	130	1.5		0.1	0.9	0.7
Total Hardness ICPMS	QUU SAS	mg/L	1	Quarterly	21	21			50	120	79
Iron ICPMS	QUU SAS	mg/L	0.001	Quarterly	21	21			0.006	0.024	0.012
Lead ICPMS	QUU SAS	mg/L	0.001	Quarterly	21	3	0.01		<0.001	0.001	0
Mercury	QUU SAS	mg/L	0.0001	Quarterly	21	0	0.001		<0.0001	<0.0001	0
Magnesium ICPMS	QUU SAS	mg/L	0.01	Quarterly	23	23			1.10	8.40	4.13
Manganese ICPMS	QUU SAS	mg/L	0.001	Quarterly	24	24	0.5		0.001	0.008	0.004
Molybdenum ICPMS	QUU SAS	mg/L	0.001	Quarterly	21	0	0.05		<0.001	<0.001	0
Nickel ICPMS	QUU SAS	mg/L	0.001	Quarterly	21	0	0.02		<0.001	<0.001	0
Nitrate N by FIA (Calc)	QUU SAS	mg/L	0.001	Quarterly	20	19	50		<0.020	0.600	0.253
pH	QUU SAS	pH Unit	0.1	Weekly	2,031	2,031			1.2	8.1	7.3
Potassium ICPMS	QUU SAS	mg/L	0.01	Quarterly	21	21			0.53	3.40	1.59
Selenium ICPMS	QUU SAS	mg/L	0.001	Quarterly	21	0	0.01		<0.001	<0.001	0
Silica ICPMS	QUU SAS	mg/L	0.1	Quarterly	21	21			2.14	10.60	7.12
Sodium ICPMS	QUU SAS	mg/L	1	Quarterly	23	23			12	32	21
Sulphate ICPMS	QUU SAS	mg/L	1	Quarterly	20	20			3.0	45.0	14.7
Total Dissolved Salt	QUU SAS	mg/L	5	Quarterly	22	22			100	250	173
THMs Total	QUU SAS	µg/L	<10	Monthly	99	95	250		<10	200	81
Turbidity	QUU SAS	NTU	0.1	Weekly	613	602			<0.1	5.0	0.8
Zinc ICPMS	QUU SAS	mg/L	0.001	Quarterly	21	20			<0.001	0.013	0.005

Note: Where the result is less than the limit of reporting a value of 0 has been adopted for the average calculation

Table B.2 – Verification Monitoring Amity Point Supply Scheme 2019 - 2020

Parameter	Laboratory Name	Unit of Measure	Limit of Reporting	Frequency of Sampling	Total No of Samples Taken	No of Samples in which Parameter Detected	Health Guidelines Limits	No of Samples Exceeding Health Guidelines Value	Min Value	Max Value	Average Value
Alkalinity	QUU SAS	mg/L	1	Quarterly	4	4			20	23	22
Aluminium ICPMS	QUU SAS	mg/L	0.001	Quarterly	4	4			0.034	0.048	0.041
Arsenic ICPMS	QUU SAS	mg/L	0.001	Quarterly	4	0	0.01		<0.001	<0.001	0
Boron ICPMS	QUU SAS	mg/L	0.001	Quarterly	4	4	4		0.014	0.016	0.015
Cadmium ICPMS	QUU SAS	mg/L	0.001	Quarterly	4	0	0.002		<0.001	<0.001	0
Calcium ICPMS	QUU SAS	mg/L	0.1	Quarterly	4	4			9.0	9.4	9.2
Chloride	QUU SAS	mg/L	1	Quarterly	4	4			21	39	32
Free Chlorine	QUU SAS	mg/L	0.1	Weekly	134	134	5		0.3	1.6	1.2
Chromium ICPMS	QUU SAS	mg/L	0.001	Quarterly	4	0	0.05		<0.001	<0.001	0
Colour - True	QUU SAS	HU	2	Quarterly	4	0			<1.0	<1.0	0
Conductivity at 25 deg C	QUU SAS	µS/cm	1	Quarterly	4	4			180	190	188
Copper ICPMS	QUU SAS	mg/L	0.001	Quarterly	4	4	2		0.003	0.007	0.005
Total Cyanide	ALS	mg/L	0.004	Quarterly	4	0	0.08		<0.004	<0.004	0
Fluoride	QUU SAS	mg/L	0.1	Weekly	50	50	1.5		0.4	0.9	0.7
Total Hardness ICPMS	QUU SAS	mg/L	1	Quarterly	4	4			30	32	31
Iron ICPMS	QUU SAS	mg/L	0.001	Quarterly	4	4			0.017	0.070	0.033
Lead ICPMS	QUU SAS	mg/L	0.001	Quarterly	4	0	0.01		<0.001	<0.001	0
Mercury	QUU SAS	mg/L	0.0001	Quarterly	4	0	0.001		<0.0001	<0.0001	0
Magnesium ICPMS	QUU SAS	mg/L	0.01	Quarterly	4	4			1.80	2.00	1.93
Manganese ICPMS	QUU SAS	mg/L	0.001	Quarterly	4	1	0.5		<0.001	0.005	0.001
Molybdenum ICPMS	QUU SAS	mg/L	0.001	Quarterly	4	0	0.05		<0.001	<0.001	0
Nickel ICPMS	QUU SAS	mg/L	0.001	Quarterly	4	0	0.02		<0.001	<0.001	0
Nitrate N by FIA (Calc)	QUU SAS	mg/L	0.001	Quarterly	4	4	50		0.160	0.240	0.210
pH	QUU SAS	pH Unit	0.1	Weekly	102	102			7.1	7.9	7.5
Potassium ICPMS	QUU SAS	mg/L	0.01	Quarterly	4	4			0.60	0.68	0.64
Selenium ICPMS	QUU SAS	mg/L	0.001	Quarterly	4	0	0.01		<0.001	<0.001	0
Silica ICPMS	QUU SAS	mg/L	0.1	Quarterly	4	4			6.1	7.6	6.7
Sodium ICPMS	QUU SAS	mg/L	1	Quarterly	4	4			21	25	23
Sulphate ICPMS	QUU SAS	mg/L	1	Quarterly	4	4			4	5	5
Total Dissolved Salt	QUU SAS	mg/L	5	Quarterly	4	4			120	120	120
THMs Total	QUU SAS	µg/L	<10	Monthly	12	12	250		11	54	31
Turbidity	QUU SAS	NTU	0.1	Weekly	44	44			0.1	4.9	0.7
Zinc ICPMS	QUU SAS	mg/L	0.001	Quarterly	4	4			0.001	0.003	0.002

Note: Where the result is less than the limit of reporting a value of 0 has been adopted for the average calculation

Table B.3 – Verification Monitoring Dunwich Supply Scheme 2019 - 2020

Parameter	Laboratory Name	Unit of Measure	Limit of Reporting	Frequency of Sampling	Total No of Samples Taken	No of Samples in which Parameter Detected	Health Guidelines Limits	No of Samples Exceeding Health Guidelines Value	Min Value	Max Value	Average Value
Alkalinity	QUU SAS	mg/L	1	Quarterly	4	4			19	23	22
Aluminium ICPMS	QUU SAS	mg/L	0.001	Quarterly	4	4			0.009	0.015	0.013
Arsenic ICPMS	QUU SAS	mg/L	0.001	Quarterly	4	0	0.01		<0.001	<0.001	0
Boron ICPMS	QUU SAS	mg/L	0.001	Quarterly	4	4	4		0.010	0.012	0.011
Cadmium ICPMS	QUU SAS	mg/L	0.001	Quarterly	4	0	0.002		<0.001	<0.001	0
Calcium ICPMS	QUU SAS	mg/L	0.1	Quarterly	4	4			8.1	10.0	9.1
Chloride	QUU SAS	mg/L	1	Quarterly	4	4			22	23	22
Free Chlorine	QUU SAS	mg/L	0.1	Weekly	127	126	5		<0.1	1.8	1.2
Chromium ICPMS	QUU SAS	mg/L	0.001	Quarterly	4	0	0.05		<0.001	<0.001	0
Colour - True	QUU SAS	HU	2	Quarterly	4	0			<1.0	<1.0	0
Conductivity at 25 deg C	QUU SAS	µS/cm	1	Quarterly	4	4			120	130	128
Copper ICPMS	QUU SAS	mg/L	0.001	Quarterly	4	4	2		0.009	0.018	0.013
Total Cyanide	ALS	mg/L	0.004	Quarterly	4	0	0.08		<0.004	<0.004	0
Fluoride	QUU SAS	mg/L	0.1	Weekly	50	50	1.5		0.2	0.8	0.7
Total Hardness ICPMS	QUU SAS	mg/L	1	Quarterly	4	4			24	29	27
Iron ICPMS	QUU SAS	mg/L	0.001	Quarterly	4	4			0.013	0.021	0.018
Lead ICPMS	QUU SAS	mg/L	0.001	Quarterly	4	0	0.01		<0.001	<0.001	0
Mercury	QUU SAS	mg/L	0.0001	Quarterly	4	0	0.001		<0.0001	<0.0001	0
Magnesium ICPMS	QUU SAS	mg/L	0.01	Quarterly	4	4			0.70	1.00	0.88
Manganese ICPMS	QUU SAS	mg/L	0.001	Quarterly	4	0	0.5		<0.001	<0.001	0
Molybdenum ICPMS	QUU SAS	mg/L	0.001	Quarterly	4	0	0.05		<0.001	<0.001	0
Nickel ICPMS	QUU SAS	mg/L	0.001	Quarterly	4	0	0.02		<0.001	<0.001	0
Nitrate N by FIA (Calc)	QUU SAS	mg/L	0.001	Quarterly	4	4	50		0.070	0.100	0.092
pH	QUU SAS	pH Unit	0.1	Weekly	102	102			7.0	8.2	7.5
Potassium ICPMS	QUU SAS	mg/L	0.01	Quarterly	4	4			0.36	0.41	0.39
Selenium ICPMS	QUU SAS	mg/L	0.001	Quarterly	4	0	0.01		<0.001	<0.001	0
Silica ICPMS	QUU SAS	mg/L	0.1	Quarterly	4	4			8.2	9.6	8.7
Sodium ICPMS	QUU SAS	mg/L	1	Quarterly	4	4			12	14	13
Sulphate ICPMS	QUU SAS	mg/L	1	Quarterly	4	4			2	2	2
Total Dissolved Salt	QUU SAS	mg/L	5	Quarterly	4	4			77	82	80
THMs Total	QUU SAS	µg/L	<10	Monthly	12	7	250		<10	27	10
Turbidity	QUU SAS	NTU	0.1	Weekly	44	41			<0.1	3.6	0.8
Zinc ICPMS	QUU SAS	mg/L	0.001	Quarterly	4	2			<0.001	0.002	0.001

Note: Where the result is less than the limit of reporting a value of 0 has been adopted for the average calculation

Table B.4 – Verification Monitoring Point Lookout Supply Scheme 2019 - 2020

Parameter	Laboratory Name	Unit of Measure	Limit of Reporting	Frequency of Sampling	Total No of Samples Taken	No of Samples in which Parameter Detected	Health Guidelines Limits	No of Samples Exceeding Health Guidelines Value	Min Value	Max Value	Average Value
Alkalinity	QUU SAS	mg/L	1	Quarterly	4	4			16	18	17
Aluminium ICPMS	QUU SAS	mg/L	0.001	Quarterly	4	4			0.020	0.023	0.021
Arsenic ICPMS	QUU SAS	mg/L	0.001	Quarterly	4	0	0.01		<0.001	<0.001	0
Boron ICPMS	QUU SAS	mg/L	0.001	Quarterly	4	4	4		0.016	0.018	0.017
Cadmium ICPMS	QUU SAS	mg/L	0.001	Quarterly	4	0	0.002		<0.001	<0.001	0
Calcium ICPMS	QUU SAS	mg/L	0.1	Quarterly	4	4			6.7	7.3	7.1
Chloride	QUU SAS	mg/L	1	Quarterly	4	4			29	48	43
Free Chlorine	QUU SAS	mg/L	0.1	Weekly	142	142	5		0.2	1.7	1.2
Chromium ICPMS	QUU SAS	mg/L	0.001	Quarterly	4	0	0.05		<0.001	<0.001	0
Colour - True	QUU SAS	HU	2	Quarterly	4	0			<1.0	<1.0	0
Conductivity at 25 deg C	QUU SAS	µS/cm	1	Quarterly	4	4			210	210	210
Copper ICPMS	QUU SAS	mg/L	0.001	Quarterly	4	4	2		0.014	0.020	0.017
Total Cyanide	ALS	mg/L	0.004	Quarterly	4	0	0.08		<0.004	<0.004	0
Fluoride	QUU SAS	mg/L	0.1	Weekly	49	49	1.5		0.6	0.9	0.8
Total Hardness ICPMS	QUU SAS	mg/L	1	Quarterly	4	4			27	29	28
Iron ICPMS	QUU SAS	mg/L	0.001	Quarterly	4	4			0.006	0.010	0.008
Lead ICPMS	QUU SAS	mg/L	0.001	Quarterly	4	0	0.01		<0.001	<0.001	0
Mercury	QUU SAS	mg/L	0.0001	Quarterly	4	0	0.001		<0.0001	<0.0001	0
Magnesium ICPMS	QUU SAS	mg/L	0.01	Quarterly	4	4			2.50	2.60	2.58
Manganese ICPMS	QUU SAS	mg/L	0.001	Quarterly	4	3	0.5		<0.001	0.002	0.001
Molybdenum ICPMS	QUU SAS	mg/L	0.001	Quarterly	4	0	0.05		<0.001	<0.001	0
Nickel ICPMS	QUU SAS	mg/L	0.001	Quarterly	4	0	0.02		<0.001	<0.001	0
Nitrate N by FIA (Calc)	QUU SAS	mg/L	0.001	Quarterly	4	4	50		0.038	0.066	0.057
pH	QUU SAS	pH Unit	0.1	Weekly	98	98			7.05	8.26	7.63
Potassium ICPMS	QUU SAS	mg/L	0.01	Quarterly	4	4			0.9	1.0	1.0
Selenium ICPMS	QUU SAS	mg/L	0.001	Quarterly	4	0	0.01		<0.001	<0.001	0
Silica ICPMS	QUU SAS	mg/L	0.1	Quarterly	4	4			8.35	10.20	8.97
Sodium ICPMS	QUU SAS	mg/L	1	Quarterly	4	4			25	28	27
Sulphate ICPMS	QUU SAS	mg/L	1	Quarterly	4	4			5	6	6
Total Dissolved Salt	QUU SAS	mg/L	5	Quarterly	4	4			130	140	133
THMs Total	QUU SAS	µg/L	<10	Monthly	12	3	250		<10	13	3
Turbidity	QUU SAS	NTU	0.1	Weekly	42	40			<0.1	4.7	0.7
Zinc ICPMS	QUU SAS	mg/L	0.001	Quarterly	4	4			0.008	0.015	0.011

Note: Where the result is less than the limit of reporting a value of 0 has been adopted for the average calculation

Table B.5 – E. coli compliance with Annual Value Redland City and SMBI Supply Scheme

Year	*2019 - 2020*											
Month	*July*	*Aug*	*Sept*	*Oct*	*Nov*	*Dec*	*Jan*	*Feb*	*Mar*	*Apr*	*May*	*June*
No. of samples collected	55	49	46	49	48	40	51	45	45	52	48	50
No. of samples collected in which *E. coli* is detected (i.e. a failure)	0	1	0	0	0	0	0	0	0	0	0	0
No. of samples collected in previous 12 month period	580	584	585	573	573	572	574	574	573	580	573	578
No. of failures for previous 12 month period (including incident month)	0	1	1	1	1	1	1	1	1	1	1	1
% of samples that comply	100%	99.83%	99.83%	99.83%	99.83%	99.83%	99.83%	99.83%	99.83%	99.83%	99.83%	99.83%
Compliance with 98% annual value	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Table B.6 – E. coli compliance with Annual Value Amity Pt Supply Scheme

Year	***2019 - 2020***											
Month	***July***	***Aug***	***Sept***	***Oct***	***Nov***	***Dec***	***Jan***	***Feb***	***Mar***	***Apr***	***May***	***June***
No. of samples collected	8	10	8	10	8	6	10	8	8	10	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	100	102	102	104	102	102	102	102	102	104	102	102
No. of failures for previous 12 month period (including incident month)	0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Compliance with 98% annual value	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Table B.7 – E. coli compliance with Annual Value Dunwich Supply Scheme

Year	***2019 - 2020***											
Month	***July***	***Aug***	***Sept***	***Oct***	***Nov***	***Dec***	***Jan***	***Feb***	***Mar***	***Apr***	***May***	***June***
No. of samples collected	8	10	8	10	8	6	9	8	8	10	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	98	100	100	102	100	100	99	99	99	101	100	101
No. of failures for previous 12 month period (including incident month)	0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Compliance with 98% annual value	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Table B.8 – E. coli compliance with Annual Value Pt Lookout Supply Scheme

Year	*2019 - 2020*											
Month	*July*	*Aug*	*Sept*	*Oct*	*Nov*	*Dec*	*Jan*	*Feb*	*Mar*	*Apr*	*May*	*June*
No. of samples collected	8	10	7	10	8	6	11	9	9	11	8	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	80	84	84	87	85	86	91	95	99	105	104	106
No. of failures for previous 12 month period (including incident month)	0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Compliance with 98% annual value	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES