

# **Drinking Water Service Annual Report**

**Mareeba Shire Council**

SPID: **557**

**Financial year to which report relates:**

**2023-24**

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PO Box 154  
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## Glossary of terms

ADWG 2011	Australian Drinking Water Guidelines (2011) Ver 3.8. 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
MSC	Mareeba Shire Council
NTU	Nephelometric Turbidity Units
MPN/100mL	Most probable number per 100 millilitres
CFU/100mL	Colony forming units per 100 millilitres
<	Less than
>	Greater than

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## 1 Introduction

This is the Drinking Water Quality Management Plan (DWQMP) report for Mareeba Shire Council (MSC) for the financial year 2023–2024.

MSC is a registered service provider with identification (SPID) number 557. MSC is operating under an approved DWQMP to ensure consistent supply of safe quality drinking water to protect public health. This is done through proactive identification and minimisation of public health related risks associated with drinking water.

This DWQMP report includes:

- ◆ the activities undertaken over the financial year in operating all MSC's drinking water services
- ◆ drinking water quality summary
- ◆ summary of the MSC Water and Waste Department's performance in implementing the MSC approved DWQMP

This report is submitted to the Regulator to fulfil MSC's regulatory requirement and is also made available to MSC's customers through its website or for inspection upon request at Council's Kowa St office.

## 2 Summary of scheme/s operated

**Table 1 - Summary of schemes**

Scheme	Water Source	Treatment processes	Treatment capacity <sup>1</sup>
Chillagoe	Bore	Filtration and chlorination	0.5 ML/d
Dimbulah	SunWater Irrigation Channel	Filtration and chlorination	1.2 ML/d
Mareeba	Barron River (SunWater Supplemented)	Coagulation, flocculation, clarification, filtration and chlorination	14.5 ML/d
Kuranda	Barron River (SunWater Supplemented)	Coagulation, flocculation, clarification, filtration and chlorination	2.0 ML/d

## 3 DWQMP implementation

Water and Wastewater staff met monthly to discuss all aspects of the supply and delivery of drinking water. The meetings were chaired by the Manager Water and Waste.

All staff have been introduced to the DWQMP and have an ongoing role in implementing it.

The actions undertaken to implement the DWQMP improvement program are summarised below.

<sup>1</sup> Maximum sustainable capacity

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

**Table 2 - Risk management improvement program implementation status (previous water year, current and projected 1 year situation)**

Scheme	Area	Mitigated	Proposed Measures	Proposed	Completion	Status
Chillagoe	Water Source	LOW	Include bore 4 in vulnerability assessment	Operational	2025	Proposal required
	Storage and Reticulation Hazards	MODERATE	Installing a pressure leakage management system on proposed lines.	Operational	2023-2024	Engaging a consultant to create a new water model
Dimbulah	Water Source	LOW	Harmful algal bloom management plan	Operational	2025	Not started
	Storage and Reticulation Hazards	MODERATE	Installing a pressure leakage management system on proposed lines.	Operational	2023-2024	Engaging a consultant to create a new water model
Kuranda	Storage and Reticulation Hazards	MODERATE	Installing a pressure leakage management system on proposed lines.	Operational	2023	Engaging a consultant to create a new water model
Mareeba	Storage and Reticulation Hazards	MODERATE	Installing a pressure leakage management system on proposed lines.	Operational	2023-2024	Tonkin Consulting creating a new water model for Mareeba
	Coagulation, flocculation and sedimentation	LOW	Clarifier Infrastructure process improvement and refurbishment	7,512	2025-2026	Not started
	Storage and Reticulation Hazards	VERY HIGH	Install pressure booster system at Mareeba WTP to service the Mareeba township. Southern area to be serviced by Centenary Park booster pump station.	\$3,500,000	2024	Works completed in October 2024
	Water Storage	VERY HIGH	Reservoir upgrade to 10ML	8,292,058	2025-2026	Design complete
	Treatment Plant Hazards	HIGH	Clear Water Booster Pump Station	\$3,082,950	2024	Works completed in October 2024
	Treatment Plant Hazards	HIGH	Clarifier Infrastructure Process Improvements	\$340,000	2025	Works completed in October 2024
	Treatment Plant Hazards	HIGH	Raw Water Pump Station Upgrade	\$792,540	2024	Works completed in October 2024
Shire Wide	Treatment Plant Hazards	HIGH	Filtration Upgrade Project	\$7,603,830	2024	Works completed in October 2024
	Coagulation, flocculation, and sedimentation	MODERATE	Baseline monitoring of THM and Chlorates	Operational	2024-2025	In progress
	Water Source	LOW	Harmful algal bloom management plan	Operational	2025	Not started
	Water Source	LOW	Agricultural run-off assessment	Operational	2023-2025	In progress
	System Wide Hazards	LOW	AC Pipe replacement	\$1,800,000	Ongoing program	In Progress
	System Wide Hazards	MODERATE	Ongoing annual infrastructure and software updates and improvements	\$80,000	Ongoing	In Progress
	System Wide Hazards	VERY HIGH	Assess training needs through internal audits and general feedback: training, multiskilling, job swapping, traineeships & relief staff.	Operational	Ongoing	In Progress, through HR

#### 4 Verification monitoring - water quality information and summary

This section discusses the compliance with the water quality criteria.

Table 3 displays all the tested parameters for the previous water year (1 Jul 2023 - 30 Jun 2024) that have a maximum permissible Health Guideline value (there are listed in Table 10.6 of the ADWG (Ver. 3.8).

There were no exceedances.

**Table 3 - Drinking water quality performance - verification monitoring**

Scheme Name	Parameter	No. Samples Collected	No. Samples Detected	UOM	Exceedance Value (ADWG)	Min	Max	Average (Mean)	LOR	NATA Lab
Chillagoe	Acephate	2	0	µg/L	8				<0.5	CRC Lab Services
Chillagoe	Aldrin & Dieldrin	2	0	µg/L	0.3				<0.1	CRC Lab Services
Chillagoe	Alkalinity (total)	2	2	mg/L	*	370	380	375	<1.0	CRC Lab Services
Chillagoe	Aluminium (acid-soluble)	2	0	mg/L	c				<0.015	CRC Lab Services
Chillagoe	Antimony	2	0	mg/L	0.003				<0.001	CRC Lab Services
Chillagoe	Arsenic	2	2	mg/L	0.01	0.0005	0.001	0.0007	<0.0002	CRC Lab Services
Chillagoe	Azinphos-methyl	2	0	µg/L	30				<0.02	CRC Lab Services
Chillagoe	Barium	2	2	mg/L	2	0.039	0.041	0.039	<0.001	CRC Lab Services
Chillagoe	Beryllium	2	1	mg/L	0.06				<0.0001	CRC Lab Services
Chillagoe	Boron	2	0	mg/L	4				<0.05	CRC Lab Services
Chillagoe	Bromophos-ethyl	2	0	µg/L	10 f				<0.10	CRC Lab Services
Chillagoe	Cadmium	2	1	mg/L	0.002				<0.0001	CRC Lab Services
Chillagoe	Calcium	2	1	mg/L	*	150	150	150	<0.2	CRC Lab Services
Chillagoe	Carbophenothion	2	0	µg/L	0.5				<0.02	CRC Lab Services
Chillagoe	Chlordane	2	0	µg/L	2				<0.01	CRC Lab Services
Chillagoe	Chlorfenvinphos	2	0	µg/L	2				<0.02	CRC Lab Services
Chillagoe	Chloride	2	2	mg/L	c	6.4	7.2	6.9	<1	CRC Lab Services
Chillagoe	Chlorine	2	2	mg/L	5	1.2	1.2	1.2	<0.02	CRC Lab Services
Chillagoe	Chlorpyrifos	2	0	µg/L	10				<0.02	CRC Lab Services
Chillagoe	Chromium (as Cr(VI))	2	1	mg/L	0.05				<0.0005	CRC Lab Services
Chillagoe	Colour (apparent)	2	0	Pt/Co					<1	CRC Lab Services
Chillagoe	Copper	2	2	mg/L	2	0.34	0.36	0.35	<0.0005	CRC Lab Services
Chillagoe	DDT (total)	2	0	µg/L	9				<0.01	CRC Lab Services
Chillagoe	Diazinon	2	0	µg/L	4				<0.01	CRC Lab Services
Chillagoe	Dichlorvos	2	0	µg/L	5				<0.2	CRC Lab Services
Chillagoe	Dimethoate	2	0	µg/L	7				<0.02	CRC Lab Services
Chillagoe	Disulfoton	2	0	µg/L	4				<0.05	CRC Lab Services
Chillagoe	Electrical Conductance	2	2	µS/cm	*	710	720	717	<2	CRC Lab Services
Chillagoe	Endosulfan	2	0	µg/L	20				<0.01	CRC Lab Services
Chillagoe	Ethion	2	0	µg/L	4				<0.02	CRC Lab Services
Chillagoe	Ethoprophos	2	0	µg/L	1				<0.01	CRC Lab Services
Chillagoe	Fenamiphos	2	0	µg/L	0.5				<0.01	CRC Lab Services

Chillagoe	Fenchlorphos	2	0	µg/L	c				<10	CRC Lab Services
Chillagoe	Fenitrothion	2	0	µg/L	7				<2	CRC Lab Services
Chillagoe	Fensulfothion	2	0	µg/L	10				<0.01	CRC Lab Services
Chillagoe	Fenthion	2	0	µg/L	7				<0.05	CRC Lab Services
Chillagoe	Fluoride	2	2	mg/L	1.5	0.1	0.1	0.1	<0.02	CRC Lab Services
Chillagoe	Hardness (as CaCO <sub>3</sub> )	2	2	mg/L		360	390	375	<1	CRC Lab Services
Chillagoe	Heptachlor	2	0	µg/L	0.3				<0.005	CRC Lab Services
Chillagoe	Iron	2	0	mg/L	c				<0.015	CRC Lab Services
Chillagoe	Lead	2	1	mg/L	0.01				<0.005	CRC Lab Services
Chillagoe	Magnesium	2	2	mg/L	*	3.1	3.3	3.2	<0.05	CRC Lab Services
Chillagoe	Maldison (Malathion)	2	0	µg/L	70				<0.02	CRC Lab Services
Chillagoe	Manganese	2	0	mg/L	0.1	0.0005	0.003	0.0018	<0.0002	CRC Lab Services
Chillagoe	Mercury	2	0	µg/L	1				<0.06	CRC Lab Services
Chillagoe	Methidathion	2	0	µg/L	6				<0.1	CRC Lab Services
Chillagoe	Methoxychlor	2	0	µg/L	300 f				<0.01	CRC Lab Services
Chillagoe	Mevinphos	2	0	µg/L	5				<0.02	CRC Lab Services
Chillagoe	Molybdenum	2	0	mg/L	0.05				<0.0005	CRC Lab Services
Chillagoe	Monocrotophos	2	0	µg/L	2 f				<0.02	CRC Lab Services
Chillagoe	Nickel	2	0	mg/L	0.02				<0.0005	CRC Lab Services
Chillagoe	Omethoate	2	0	µg/L	1				<0.01	CRC Lab Services
Chillagoe	Parathion	2	0	µg/L	20				<0.2	CRC Lab Services
Chillagoe	Parathion-methyl	2	0	µg/L	0.7				<0.5	CRC Lab Services
Chillagoe	pH	2	2		6.5-8.5	7.3	7.4	7.35	<0.1	CRC Lab Services
Chillagoe	Pirimiphos-ethyl	2	0	µg/L	0.5 f				<0.01	CRC Lab Services
Chillagoe	Pirimiphos methyl	2	0	µg/L	90				<0.01	CRC Lab Services
Chillagoe	Potassium	2	2	mg/L	*	0.6	0.62	0.61	<0.15	CRC Lab Services
Chillagoe	Profenofos	2	0	µg/L	0.3				<0.01	CRC Lab Services
Chillagoe	Pyrazophos	2	0	µg/L	20				<0.1	CRC Lab Services
Chillagoe	Selenium	2	0	mg/L	0.01				<0.002	CRC Lab Services
Chillagoe	Silver	2	0	mg/L	0.1				<0.0002	CRC Lab Services
Chillagoe	Sodium	2	2	mg/L		3.9	5.1	4.4	<0.15	CRC Lab Services
Chillagoe	Sulfate	2	2	mg/L	c	3.1	3.4	3.3	<1	CRC Lab Services
Chillagoe	Sulprofos	2	0	µg/L	10				<0.05	CRC Lab Services
Chillagoe	Temephos	2	0	µg/L	400				<0.020	CRC Lab Services
Chillagoe	Terbufos	2	0	µg/L	0.9				<0.01	CRC Lab Services
Chillagoe	Tetrachlorvinphos	2	0	µg/L	100				<0.01	CRC Lab Services

Chillagoe	Thiometon	2	0	µg/L	f 4 f				<0.5	CRC Lab Services
Chillagoe	Tin	2	0	mg/L					<0.001	CRC Lab Services
Chillagoe	Total dissolved solids	2	2	mg/L		420	430	423	<10	CRC Lab Services
Chillagoe	Trichlorfon	2	0	µg/L	7				<0.02	CRC Lab Services
Chillagoe	Turbidity	2	0	NTU	c	0.1	0.2	0.2	<0.1	CRC Lab Services
Chillagoe	Uranium	2	2	mg/L	0.017	0.0005	0.0005	0.0005	<0.0001	CRC Lab Services
Chillagoe	Zinc	2	2	mg/L	c	0.009	0.031	0.02	<0.008	CRC Lab Services
Dimbulah	Acephate	2	0							CRC Lab Services
Dimbulah	Aldrin & Dieldrin	2	0	µg/L	0.3				<0.1	CRC Lab Services
Dimbulah	Alkalinity (total)	2	2	mg/L	*	21	21	21	<1.0	CRC Lab Services
Dimbulah	Aluminium (acid-soluble)	2	0	mg/L	c				<0.015	CRC Lab Services
Dimbulah	Antimony	2	0	mg/L	0.003				<0.001	CRC Lab Services
Dimbulah	Arsenic	2	2	mg/L	0.01	0.0006	0.0007	0.0007	<0.0002	CRC Lab Services
Dimbulah	Azinphos-methyl	2	0	µg/L	30				<0.02	CRC Lab Services
Dimbulah	Barium	2	2	mg/L	2	0.01	0.016	0.013	<0.002	CRC Lab Services
Dimbulah	Beryllium	2	0	mg/L	0.06				<0.0001	CRC Lab Services
Dimbulah	Boron	2	0	mg/L	4				<0.05	CRC Lab Services
Dimbulah	Bromophos-ethyl	2	0	µg/L	10 f				<0.10	CRC Lab Services
Dimbulah	Cadmium	2	0	mg/L	0.002				<0.0001	CRC Lab Services
Dimbulah	Calcium	2	2	mg/L	*	2.1	2.4	2.3	<0.2	CRC Lab Services
Dimbulah	Carbophenothion	2	0	µg/L	0.5				<0.02	CRC Lab Services
Dimbulah	Chlordane	2	0	µg/L	2				<0.01	CRC Lab Services
Dimbulah	Chlorfenvinphos	2	0	µg/L	2				<0.02	CRC Lab Services
Dimbulah	Chloride	2	2	mg/L	c	12	14	13	<1	CRC Lab Services
Dimbulah	Chlorine	2	2	mg/L	5	1.2	1.7	1.45	<0.02	CRC Lab Services
Dimbulah	Chlorpyrifos	2	0	µg/L	10				<0.02	CRC Lab Services
Dimbulah	Chromium (as Cr(VI))	2	0	mg/L	0.05				<0.0005	CRC Lab Services
Dimbulah	Colour (apparent)	2	0	Pt/Co					<1	CRC Lab Services
Dimbulah	Copper	2	2	mg/L	2	0.002	0.002	0.002	<0.0005	CRC Lab Services
Dimbulah	DDT (total)	2	0	µg/L	9				<0.01	CRC Lab Services
Dimbulah	Diazinon	2	0	µg/L	4				<0.01	CRC Lab Services
Dimbulah	Dichlorvos	2	0	µg/L	5				<0.2	CRC Lab Services
Dimbulah	Dimethoate	2	0	µg/L	7				<0.02	CRC Lab Services
Dimbulah	Disulfoton	2	0	µg/L	4				<0.05	CRC Lab Services
Dimbulah	Electrical Conductance	2	2	µS/cm	*	73	98	86	<2	CRC Lab Services
Dimbulah	Endosulfan	2	0	µg/L	20				<0.01	CRC Lab Services
Dimbulah	Ethion	2	0	µg/L	4				<0.02	CRC Lab Services



Dimbulah	Ethoprophos	2	0	µg/L	1				<0.01	CRC Lab Services
Dimbulah	Fenamiphos	2	0	µg/L	0.5				<0.01	CRC Lab Services
Dimbulah	Fenchlorphos	2	0	µg/L	c				<10	CRC Lab Services
Dimbulah	Fenitrothion	2	0	µg/L	7				<2	CRC Lab Services
Dimbulah	Fensulfothion	2	0	µg/L	10				<0.01	CRC Lab Services
Dimbulah	Fenthion	2	0	µg/L	7				<0.05	CRC Lab Services
Dimbulah	Fluoride	2	2	mg/L	1.5	0.05	0.07	0.06	<0.02	CRC Lab Services
Dimbulah	Hardness (as CaCO <sub>3</sub> )	2	2	mg/L		16	17	16.5	<1	CRC Lab Services
Dimbulah	Heptachlor	2	0	µg/L	0.3				<0.005	CRC Lab Services
Dimbulah	Iron	2	0	mg/L	c				<0.015	CRC Lab Services
Dimbulah	Lead	2	0	mg/L	0.01				<0.005	CRC Lab Services
Dimbulah	Magnesium	2	2	mg/L	*	2.8	2.9	2.9	<0.05	CRC Lab Services
Dimbulah	Maldison (Malathion)	2	0	µg/L	70				<0.02	CRC Lab Services
Dimbulah	Manganese	2	1	mg/L	0.1	0.0014	0.0014	0.0014	<0.0002	CRC Lab Services
Dimbulah	Mercury	2	0	µg/L	1				<0.06	CRC Lab Services
Dimbulah	Methidathion	2	0	µg/L	6				<0.1	CRC Lab Services
Dimbulah	Methoxychlor	2	0	µg/L	300 f				<0.01	CRC Lab Services
Dimbulah	Mevinphos	2	0	µg/L	5				<0.02	CRC Lab Services
Dimbulah	Molybdenum	2	0	mg/L	0.05				<0.0005	CRC Lab Services
Dimbulah	Monocrotophos	2	0	µg/L	2 f				<0.02	CRC Lab Services
Dimbulah	Nickel	2	0	mg/L	0.02				<0.0005	CRC Lab Services
Dimbulah	Omethoate	2	0	µg/L	1				<0.01	CRC Lab Services
Dimbulah	Parathion	2	0	µg/L	20				<0.2	CRC Lab Services
Dimbulah	Parathion-methyl	2	0	µg/L	0.7				<0.5	CRC Lab Services
Dimbulah	pH	2	2		6.5-8.5	7.6	7.4	7.5	<0.1	CRC Lab Services
Dimbulah	Pirimiphos-ethyl	2	0	µg/L	0.5 f				<0.01	CRC Lab Services
Dimbulah	Pirimiphos methyl	2	0	µg/L	90				<0.01	CRC Lab Services
Dimbulah	Potassium	2	2	mg/L	*	1.7	1.9	1.8	<0.15	CRC Lab Services
Dimbulah	Profenofos	2	0	µg/L	0.3				<0.01	CRC Lab Services
Dimbulah	Pyrazophos	2	0	µg/L	20				<0.1	CRC Lab Services
Dimbulah	Selenium	2	0	mg/L	0.01				<0.002	CRC Lab Services
Dimbulah	Silver	2	0	mg/L	0.1				<0.0002	CRC Lab Services
Dimbulah	Sodium	2	2	mg/L		7.1	12	9.6	<0.15	CRC Lab Services
Dimbulah	Sulfate	2	2	mg/L	c	1.1	2	1.6	<1	CRC Lab Services
Dimbulah	Sulprofos	2	0	µg/L	10				<0.05	CRC Lab Services
Dimbulah	Temephos	2	0	µg/L	400				<0.020	CRC Lab Services



Dimbulah	Terbufos	2	0	µg/L	0.9				<0.01	CRC Lab Services
Dimbulah	Tetrachlorvinphos	2	0	µg/L	100 f				<0.01	CRC Lab Services
Dimbulah	Thiometon	2	0	µg/L	4 f				<0.5	CRC Lab Services
Dimbulah	Tin	2	0	mg/L					<0.001	CRC Lab Services
Dimbulah	Total dissolved solids	2	2	mg/L		48	58	53	<10	CRC Lab Services
Dimbulah	Trichlorfon	2	0	µg/L	7				<0.02	CRC Lab Services
Dimbulah	Turbidity	2	0	NTU	c	0.1	0.1	0.1	<0.1	CRC Lab Services
Dimbulah	Uranium	2	0	mg/L	0.017				<0.0001	CRC Lab Services
Dimbulah	Zinc	2	0	mg/L	c				<0.008	CRC Lab Services
Kuranda	Acephate	2	0	µg/L	8				<0.5	CRC Lab Services
Kuranda	Aldrin & Dieldrin	2	0	µg/L	0.3				<0.1	CRC Lab Services
Kuranda	Alkalinity (total)	2	2	mg/L	*	30	35	32.5	<1.0	CRC Lab Services
Kuranda	Aluminium (acid-soluble)	2	0	mg/L	c				<0.015	CRC Lab Services
Kuranda	Antimony	2	0	mg/L	0.003				<0.001	CRC Lab Services
Kuranda	Arsenic	2	2	mg/L	0.01	0.0003	0.0004	0.0004	<0.0002	CRC Lab Services
Kuranda	Azinphos-methyl	2	0	µg/L	30				<0.02	CRC Lab Services
Kuranda	Barium	2	2	mg/L	2	0.008	0.009	0.009	<0.002	CRC Lab Services
Kuranda	Beryllium	2	0	mg/L	0.06				<0.0001	CRC Lab Services
Kuranda	Boron	2	0	mg/L	4				<0.05	CRC Lab Services
Kuranda	Bromophos-ethyl	2	0	µg/L	10 f				<0.10	CRC Lab Services
Kuranda	Cadmium	2	0	mg/L	0.002				<0.0001	CRC Lab Services
Kuranda	Calcium	2	2	mg/L	*	2.1	3.4	2.8	<0.2	CRC Lab Services
Kuranda	Carbophenothion	2	0	µg/L	0.5				<0.02	CRC Lab Services
Kuranda	Chlordane	2	0	µg/L	2				<0.01	CRC Lab Services
Kuranda	Chlorfenvinphos	2	0	µg/L	2				<0.02	CRC Lab Services
Kuranda	Chloride	2	2	mg/L	c	12	14	13	<1	CRC Lab Services
Kuranda	Chlorine	2	2	mg/L	5	1.8	3.5	2.65	<0.02	CRC Lab Services
Kuranda	Chlorpyrifos	2	0	µg/L	10				<0.02	CRC Lab Services
Kuranda	Chromium (as Cr(VI))	2	0	mg/L	0.05				<0.0005	CRC Lab Services
Kuranda	Colour (apparent)	2	0	Pt/Co		1.9	3.6	2.75	<1	CRC Lab Services
Kuranda	Copper	2	2	mg/L	2	0.11	0.13	0.12	<0.0005	CRC Lab Services
Kuranda	DDT (total)	2	0	µg/L	9				<0.01	CRC Lab Services
Kuranda	Diazinon	2	0	µg/L	4				<0.01	CRC Lab Services
Kuranda	Dichlorvos	2	0	µg/L	5				<0.2	CRC Lab Services
Kuranda	Dimethoate	2	0	µg/L	7				<0.02	CRC Lab Services
Kuranda	Disulfoton	2	0	µg/L	4				<0.05	CRC Lab Services
Kuranda	Electrical Conductance	2	2	µS/cm	*	73	100	87	<2	CRC Lab Services

Kuranda	Endosulfan	2	0	µg/L	20				<0.01	CRC Lab Services
Kuranda	Ethion	2	0	µg/L	4				<0.02	CRC Lab Services
Kuranda	Ethoprophos	2	0	µg/L	1				<0.01	CRC Lab Services
Kuranda	Fenamiphos	2	0	µg/L	0.5				<0.01	CRC Lab Services
Kuranda	Fenchlorphos	2	0	µg/L	c				<10	CRC Lab Services
Kuranda	Fenitrothion	2	0	µg/L	7				<2	CRC Lab Services
Kuranda	Fensulfothion	2	0	µg/L	10				<0.01	CRC Lab Services
Kuranda	Fenthion	2	0	µg/L	7				<0.05	CRC Lab Services
Kuranda	Fluoride	2	2	mg/L	1.5	0.04	0.05	0.05	<0.02	CRC Lab Services
Kuranda	Hardness (as CaCO <sub>3</sub> )	2	2	mg/L		26	28	27	<1	CRC Lab Services
Kuranda	Heptachlor	2	0	µg/L	0.3				<0.005	CRC Lab Services
Kuranda	Iron	2	0	mg/L	c				<0.015	CRC Lab Services
Kuranda	Lead	2	0	mg/L	0.01				<0.005	CRC Lab Services
Kuranda	Magnesium	2	2	mg/L	*	1.7	3.63	2.65	<0.05	CRC Lab Services
Kuranda	Maldison (Malathion)	2	0	µg/L	70				<0.02	CRC Lab Services
Kuranda	Manganese	2	2	mg/L	0.1	0.0045	0.0048	0.0047	<0.0002	CRC Lab Services
Kuranda	Mercury	2	0	µg/L	1				<0.06	CRC Lab Services
Kuranda	Methidathion	2	0	µg/L	6				<0.1	CRC Lab Services
Kuranda	Methoxychlor	2	0	µg/L	300 f				<0.01	CRC Lab Services
Kuranda	Mevinphos	2	0	µg/L	5				<0.02	CRC Lab Services
Kuranda	Molybdenum	2	0	mg/L	0.05				<0.0005	CRC Lab Services
Kuranda	Monocrotophos	2	0	µg/L	2 f				<0.02	CRC Lab Services
Kuranda	Nickel	2	0	mg/L	0.02				<0.0005	CRC Lab Services
Kuranda	Omethoate	2	0	µg/L	1				<0.01	CRC Lab Services
Kuranda	Parathion	2	0	µg/L	20				<0.2	CRC Lab Services
Kuranda	Parathion-methyl	2	0	µg/L	0.7				<0.5	CRC Lab Services
Kuranda	pH	2	2		6.5-8.5	7.7	7.8	7.75	<0.1	CRC Lab Services
Kuranda	Pirimiphos-ethyl	2	0	µg/L	0.5 f				<0.01	CRC Lab Services
Kuranda	Pirimiphos methyl	2	0	µg/L	90				<0.01	CRC Lab Services
Kuranda	Potassium	2	2	mg/L	*	1.6	1.7	1.7	<0.15	CRC Lab Services
Kuranda	Profenofos	2	0	µg/L	0.3				<0.01	CRC Lab Services
Kuranda	Pyrazophos	2	0	µg/L	20				<0.1	CRC Lab Services
Kuranda	Selenium	2	0	mg/L	0.01				<0.002	CRC Lab Services
Kuranda	Silver	2	0	mg/L	0.1				<0.0002	CRC Lab Services
Kuranda	Sodium	2	2	mg/L		8.6	11	9.8	<0.15	CRC Lab Services
Kuranda	Sulfate	2	2	mg/L	c	1.1	1.2	1.2	<1	CRC Lab Services

<b>Kuranda</b>	Sulprofos	2	0	µg/L	10				<0.05	CRC Lab Services
<b>Kuranda</b>	Temephos	2	0	µg/L	400				<0.020	CRC Lab Services
<b>Kuranda</b>	Terbufos	2	0	µg/L	0.9				<0.01	CRC Lab Services
<b>Kuranda</b>	Tetrachlorvinphos	2	0	µg/L	100 f				<0.01	CRC Lab Services
<b>Kuranda</b>	Thiometon	2	0	µg/L	4 f				<0.5	CRC Lab Services
<b>Kuranda</b>	Tin	2	0	mg/L					<0.001	CRC Lab Services
<b>Kuranda</b>	Total dissolved solids	2	2	mg/L		46	62	54	<10	CRC Lab Services
<b>Kuranda</b>	Trichlorfon	2	0	µg/L	7				<0.02	CRC Lab Services
<b>Kuranda</b>	Turbidity	2	2	NTU	c	0.1	0.3	0.2	<0.1	CRC Lab Services
<b>Kuranda</b>	Uranium	2	0	mg/L	0.017				<0.0001	CRC Lab Services
<b>Kuranda</b>	Zinc	2	1	mg/L	c	0.01	0.01	0.01	<0.008	CRC Lab Services
<b>Mareeba</b>	Acephate	2	0	µg/L	8				<0.5	CRC Lab Services
<b>Mareeba</b>	Aldrin & Dieldrin	2	0	µg/L	0.3				<0.1	CRC Lab Services
<b>Mareeba</b>	Alkalinity (total)	2	2	mg/L	*	30	32	31	<1.0	CRC Lab Services
<b>Mareeba</b>	Aluminium (acid-soluble)	7	5	mg/L	c	0.021	0.24	0.095	<0.015	CRC Lab Services
<b>Mareeba</b>	Antimony	2	0	mg/L	0.003				<0.001	CRC Lab Services
<b>Mareeba</b>	Arsenic	2	2	mg/L	0.01	0.0003	0.0004	0.0004	<0.0002	CRC Lab Services
<b>Mareeba</b>	Azinphos-methyl	2	0	µg/L	30				<0.02	CRC Lab Services
<b>Mareeba</b>	Barium	2	2	mg/L	2	0.007	0.008	0.008	<0.002	CRC Lab Services
<b>Mareeba</b>	Beryllium	2	0	mg/L	0.06				<0.0001	CRC Lab Services
<b>Mareeba</b>	Boron	2	0	mg/L	4				<0.05	CRC Lab Services
<b>Mareeba</b>	Bromophos-ethyl	2	0	µg/L	10 f				<0.10	CRC Lab Services
<b>Mareeba</b>	Cadmium	2	0	mg/L	0.002				<0.0001	CRC Lab Services
<b>Mareeba</b>	Calcium	2	2	mg/L	*	3.3	3.4	3.4	<0.2	CRC Lab Services
<b>Mareeba</b>	Carbophenothion	2	0	µg/L	0.5				<0.02	CRC Lab Services
<b>Mareeba</b>	Chlordane	2	0	µg/L	2				<0.01	CRC Lab Services
<b>Mareeba</b>	Chlorfenvinphos	2	0	µg/L	2				<0.02	CRC Lab Services
<b>Mareeba</b>	Chloride	2	2	mg/L	c	13	15	14	<1	CRC Lab Services
<b>Mareeba</b>	Chlorine	2	2	mg/L	5	1.3	1.3	1.3	<0.02	CRC Lab Services
<b>Mareeba</b>	Chlorpyrifos	2	0	µg/L	10				<0.02	CRC Lab Services
<b>Mareeba</b>	Chromium (as Cr(VI))	2	0	mg/L	0.05				<0.0005	CRC Lab Services
<b>Mareeba</b>	Colour (apparent)	2	0	Pt/Co					<1	CRC Lab Services
<b>Mareeba</b>	Copper	2	2	mg/L	2	0.001	0.003	0.002	<0.0005	CRC Lab Services
<b>Mareeba</b>	DDT (total)	2	0	µg/L	9				<0.01	CRC Lab Services
<b>Mareeba</b>	Diazinon	2	0	µg/L	4				<0.01	CRC Lab Services
<b>Mareeba</b>	Dichlorvos	2	0	µg/L	5				<0.2	CRC Lab Services
<b>Mareeba</b>	Dimethoate	2	0	µg/L	7				<0.02	CRC Lab Services

Mareeba	Disulfoton	2	0	µg/L	4				<0.05	CRC Lab Services
Mareeba	Electrical Conductance	2	2	µS/cm	*	93	95	94	<2	CRC Lab Services
Mareeba	Endosulfan	2	0	µg/L	20				<0.01	CRC Lab Services
Mareeba	Ethion	2	0	µg/L	4				<0.02	CRC Lab Services
Mareeba	Ethoprophos	2	0	µg/L	1				<0.01	CRC Lab Services
Mareeba	Fenamiphos	2	0	µg/L	0.5				<0.01	CRC Lab Services
Mareeba	Fenchlorphos	2	0	µg/L	c				<10	CRC Lab Services
Mareeba	Fenitrothion	2	0	µg/L	7				<2	CRC Lab Services
Mareeba	Fensulfothion	2	0	µg/L	10				<0.01	CRC Lab Services
Mareeba	Fenthion	2	0	µg/L	7				<0.05	CRC Lab Services
Mareeba	Fluoride	2	2	mg/L	1.5	0.05	0.06	0.06	<0.02	CRC Lab Services
Mareeba	Hardness (as CaCO3)	2	2	mg/L		25	26	25.5	<1	CRC Lab Services
Mareeba	Heptachlor	2	0	µg/L	0.3				<0.005	CRC Lab Services
Mareeba	Iron	2	0	mg/L	c				<0.015	CRC Lab Services
Mareeba	Lead	2	0	mg/L	0.01				<0.005	CRC Lab Services
Mareeba	Magnesium	2	2	mg/L	*	3.2	3.5	3.4	<0.05	CRC Lab Services
Mareeba	Maldison (Malathion)	2	0	µg/L	70				<0.02	CRC Lab Services
Mareeba	Manganese	2	0	mg/L	0.1	0.0003	0.0002	0.0003	<0.0002	CRC Lab Services
Mareeba	Mercury	2	0	µg/L	1				<0.06	CRC Lab Services
Mareeba	Methidathion	2	0	µg/L	6				<0.1	CRC Lab Services
Mareeba	Methoxychlor	2	0	µg/L	300 f				<0.01	CRC Lab Services
Mareeba	Mevinphos	2	0	µg/L	5				<0.02	CRC Lab Services
Mareeba	Molybdenum	2	0	mg/L	0.05				<0.0005	CRC Lab Services
Mareeba	Monocrotophos	2	0	µg/L	2 f				<0.02	CRC Lab Services
Mareeba	Nickel	2	0	mg/L	0.02				<0.0005	CRC Lab Services
Mareeba	Omethoate	2	0	µg/L	1				<0.01	CRC Lab Services
Mareeba	Parathion	2	0	µg/L	20				<0.2	CRC Lab Services
Mareeba	Parathion-methyl	2	0	µg/L	0.7				<0.5	CRC Lab Services
Mareeba	pH	6	6		6.5-8.5	7.7	8.1	7.8	<0.1	CRC Lab Services
Mareeba	Pirimiphos-ethyl	2	0	µg/L	0.5 f				<0.01	CRC Lab Services
Mareeba	Pirimiphos methyl	2	0	µg/L	90				<0.01	CRC Lab Services
Mareeba	Potassium	2	2	mg/L	*	1.6	1.9	1.8	<0.15	CRC Lab Services
Mareeba	Profenofos	2	0	µg/L	0.3				<0.01	CRC Lab Services
Mareeba	Pyrazophos	2	0	µg/L	20				<0.1	CRC Lab Services
Mareeba	Selenium	2	0	mg/L	0.01				<0.002	CRC Lab Services
Mareeba	Silver	2	0	mg/L	0.1				<0.0002	CRC Lab Services

Mareeba	Sodium	2	2	mg/L		9.7	10	9.9	<0.15	CRC Lab Services
Mareeba	Sulfate	2	1	mg/L	c	1	1.1	1.1	<1	CRC Lab Services
Mareeba	Sulprofos	2	0	µg/L	10				<0.05	CRC Lab Services
Mareeba	Temephos	2	0	µg/L	400				<0.020	CRC Lab Services
Mareeba	Terbufos	2	0	µg/L	0.9				<0.01	CRC Lab Services
Mareeba	Tetrachlorvinphos	2	0	µg/L	100 f				<0.01	CRC Lab Services
Mareeba	Thiometon	2	0	µg/L	4 f				<0.5	CRC Lab Services
Mareeba	Tin	2	0	mg/L					<0.001	CRC Lab Services
Mareeba	Total dissolved solids	2	2	mg/L		58	59	59	<10	CRC Lab Services
Mareeba	Trichlorfon	2	0	µg/L	7				<0.02	CRC Lab Services
Mareeba	Turbidity	2	0	NTU	c	0.1	0.1	0.1	<0.1	CRC Lab Services
Mareeba	Uranium	2	0	mg/L	0.017				<0.0001	CRC Lab Services
Mareeba	Zinc	2	0	mg/L	c				<0.008	CRC Lab Services

§ Reproduced from footnotes of Table 10.6 Guideline values for physical and chemical characteristics ADWG V3.8

HU = Hazen units; NTU = nephelometric turbidity units; THMs = trihalomethanes.

- a Aesthetic values are not listed if the compound does not cause aesthetic problems, or if the value determined from health considerations is the same or lower[a]
  - b If present at all in Australian drinking waters, concentrations of all organic compounds other than disinfection by-products are likely to be very low relative to the guideline value[b]
  - c Insufficient data to set a guideline value based on health considerations[c]
  - d The guideline value is below the limit of quantitation. Improved analytical procedures are required for this compound[d]
  - e The concentration of all chlorination by-products can be minimised by removing naturally occurring organic matter from the source water, reducing the amount of chlorine added, or using an alternative disinfectant (which may produce other by-products). Action to reduce trihalomethanes and other by-products is encouraged, but must not compromise disinfection[e]
  - f No corresponding fact sheet for these pesticides. Guideline values for these pesticides appeared in a previous version of the Guidelines and have been retained in Table 10.6 for information purposes only[f]
- \* Monitoring parameter included in DWQMP, but not Table 10.6 of ADWG[\*]

Note: All values are as 'total' unless otherwise stated.

Note: Routine monitoring for these compounds is not required unless there is potential for contamination of water supplies (e.g. accidental spillage).

**Table 4 - E. coli compliance with annual value**

Drinking water scheme:	Chillagoe											
	Year	2023 - 2024										
Month	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
No. of samples collected	1	1	1	1	1	0	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	16	16	15	14	14	14	14	14	13	13	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%

**Drinking water scheme:**

## Dimbulah

Year	2023-2024												
	Month	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
No. of samples collected		4	5	4	4	5	4	4	4	4	4	5	3
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 periods		90	91	90	92	87	84	81	77	70	67	62	56
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%

**Drinking water scheme:**

## Kuranda

Year	2023-2024												
	Month	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
No. of samples collected		4	5	3	4	5	3	3	4	4	4	5	3
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		101	96	92	91	86	82	80	87	80	77	72	67
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%

**Drinking water scheme:**

## Mareeba

Year	2023-2024												
	Month	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
No. of samples collected		4	5	4	4	5	4	4	4	4	4	5	3
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		102	97	92	90	85	81	78	74	67	64	59	54
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%

## 5 Incidents reported to the Regulator

There were no water treatment or reticulation incidents reported to the Regulator during the previous water year.

## 6 Customer complaints

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

**Table 5 - Customer complaints about water quality**

Scheme	Quality Complaints	Service Complaints	Totals
Chillagoe	0	1	1
Dimbulah	0	0	0
Kuranda	0	1	1
Mareeba	2	17	19
<b>Totals</b>	<b>2</b>	<b>19</b>	<b>21</b>

## 7 DWQMP review outcomes

A review was completed during the relevant financial year 01/07/2022 to 30/06/2023 and a summary is presented in Table 6.

Reviews must be conducted every 2 years. The next review is due to be completed by the 1 April 2026.



**Table 6 – DWQMP review outcomes**

**Review Date: 1/04/24**

<i>Review component</i>	<i>Findings</i>	<i>Outcomes</i>	<i>Status of actions</i>	<i>Responsible Officer / Position</i>
Details of infrastructure	Upgrade to infrastructure and SOP's	Sodium hypochlorite disinfection system implemented at Chillagoe and Dimbulah	Completed	Manager Water and Waste
Water quality and catchment characteristics	Unknow baseline monitoring programs	Implemented Agricultural run-off monitoring and monitoring for THM's and Chlorates at all WTP's	Underway	Q&C Officer
Risk assessment	Risk assessments updated for each water plant.	Updated actions	Completed	Q&C Officer
Risk assessment	Increase Cyber security	Implement training organisation wide	Continuous	IT Team
Operations and maintenance procedures	SOP's required updates at Chillagoe and Dimbulah WTP	Documents updated for Chillagoe and Dimbulah	Completed	Q&C Officer
Management of incidents and emergencies	Training procedures revised	All staff kept up to date with procedures and expectations	Continuous	Q&C Officer
Risk management improvement program	RMIP revised and improved	Updates actioned	Continuous	Q&C Officer
Service wide information management	SWIM platform used across the organisation to uniform data collection	Synchronised data	Completed	Q&C Officer
Operational monitoring	Poor work practise/inadequate training	Increase operator knowledge, training, and supervision	Continuous	Q&C Officer and Supervisors

## 8 DWQMP audit

No audit was required or conducted during the relevant financial year 01/07/2023 to 30/06/2024.

Audits of the approved DWQMP must be conducted every 4 years The last DWQMP audit was 19/04/2021. The next audit is due to be completed by 30 June 2025.