BUSSELTON WATER

Annual Water Quality Report

2024-2025

busseltonwater.wa.gov.au

BUSSELTON WATER

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MESSAGE FROM THE CHIEF EXECUTIVE OFFICER

I am pleased to present the 2024-2025 Annual Water Quality Report on behalf of Busselton Water.

Our dedication to meeting both health-related and non-health related water quality criteria, as outlined in the Australian Drinking Water Guidelines (ADWG), has remained steadfast throughout the 2024-2025 period. Our strong relationships with customers, stakeholders, and regulators continue to be guided by these guidelines, and are further supported by our Memorandum of Understanding (MoU) with the Department of Health.

The water quality results in this report demonstrate outstanding performance for 2024-2025, during a period of continued high demand for our services.

This report details our water quality results, our compliance with the ADWG, and the processes Busselton Water follows for collecting, treating, and distributing drinking water to our customers.

I would like to thank everyone who has contributed to these excellent results, especially our staff, representatives from the Department of Health, and the many contracted companies who support the delivery of our services.

David Hughes-Owen
Chief Executive Officer

2024-2025 WATER QUALITY RESULTS AT A GLANCE	
Incident management	
Incidents reportable to the Department of Health	Nil
Health related characteristics	**Compliance**
Escherichia coli	100%
Naegleria	100%
Chemical	100%
Pesticides	100%
Radiological	100%
Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS)	100%
Chlorine Disinfection	100%
Non-health characteristics	**Compliance**
Aesthetic characteristics (excluding chlorine)[1]	98.9%

[1] Busselton Water achieved full compliance with Australian Drinking Water Guidelines except for:
(a) the 0.6 mg/L aesthetic guideline value for chlorine concentration. This aesthetic guideline value is exceeded on some occasions to ensure the microbiological safety of our water supply; and
(b) Details of minor non-health related (aesthetic) exceedances are provided on Pages 28 and 29 of this report.

OUR COMMITMENT

We are committed to achieving 100 per cent compliance, with health-related and non-health related water quality criteria in the ADWG[2].

To enable us to achieve this, we will:

- systematically monitor and report water quality performance;
- be prepared for incidents including regular testing of our response plans;
- fulfil all the requirements of our Operating Licence and MoU[3] with the Department of Health; and review and implement the Drinking Water Quality Management Plan.

Drinking Water Quality Policy

Busselton Water is committed to providing our current and future customers with high quality, safe drinking water consistent with the ADWG.
In pursuit of our commitments, we will:

• endorse and embrace the ADWG including protection of catchments and sources;

• fulfil all the requirements of our Operating Licence and MoU with the Department of Health;

• maintain and implement a Drinking Water Quality Management System consistent with the 12 elements of the ADWG Framework;

• systematically monitor and report water quality performance;

• prepare for incidents and regularly test our response plans;

• ensure our own water extraction is sustainable; and

• champion protection of source catchments in collaboration with relevant government agencies and regulators.

Drinking Water Quality Management Framework

Busselton Water bases its Drinking Water Quality Management System on the ADWG Framework for Management of Drinking Water Quality, endorsed by the National Health and Medical Research Council. The Framework provides benchmark water quality guidelines and values for designing a structured system for drinking water quality management. It aims to ensure a safe and reliable water supply. There are 12 elements within the ADWG Framework which are considered best practice. These elements are divided into four sections:

1. Commitment to drinking water quality management;

2. System analysis and management;

3. Supporting requirements;

4. Review and continuous improvement.

Busselton Water regularly assesses its performance against these elements.

Operating Licence

Our Operating Licence incorporates our MoU with the Department of Health[4].

Memorandum of Understanding

The MoU describes the Department of Health requirements for compliance with the microbiological, health, chemical and radiological criteria. Busselton Water provides the Department of Health with a quarterly water quality report, outlining how our organisation has performed against agreed requirements specified in the MoU. Busselton Water is also a member of Western Australia's Advisory Committee for the Purity of Water[5].

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[2] The "Australian Drinking Water Guidelines" published by the National Health and Medical Research Council, Australia's peak health research body, provides an authoritative reference on what defines safe, good quality drinking water; how it can be achieved; and how it can be assured. It is available for download from https://nhmrc.gov.au/about-us/publications/australian-drinking-water-guidelines.

[3] A copy of the Memorandum of Understanding with the Department of Health is available on the Busselton Water website at: https://dyf0dddatui34.cloudfront.net/wp-content/uploads/2020/01/MOU-between-Department-of-Health-and-Busselton-Water-2019.pdf

[4] https://www.erawa.com.au/cproot/21967/2/Water-Services-Licence-3-Version-10-02-June-2021---Busselton-Water-Corporation.pdf

[5] More information on the Advisory Committee for the Purity of Water can be found at http://ww2.health.wa.gov.au/Articles/A_E_/Advisory-Committee-for-the-Purity-of-Water

OUR GEOGRAPHIC COVERAGE

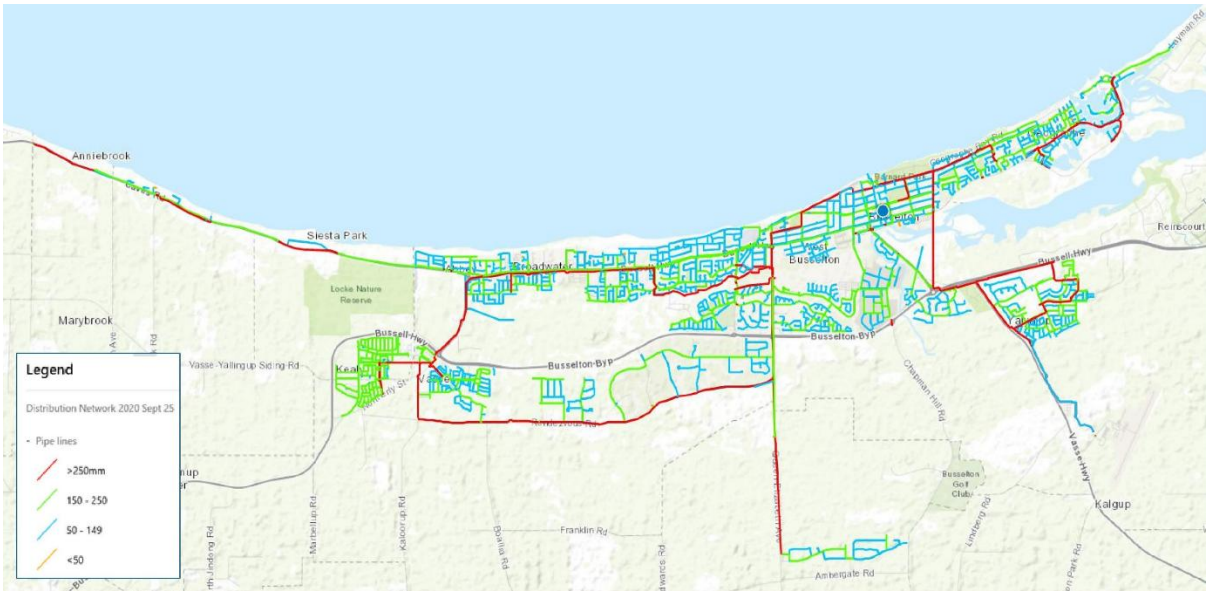


Figure 1: Serviced area of Busselton Water.

Current Extent of Operation

Established in 1906, Busselton Water is a local water corporation, sharing a 119 year history and Wadandi culture with the local community. We provide potable water services to more than 30,000 people within the City of Busselton (doubling to more than 60,000 in peak holiday periods). The Water Corporation purchases bulk treated water from Busselton Water to augment supply to Dunsborough.

We currently provide drinking water within a serviced area of 81,200 hectares, centred around Busselton as shown above in Figure 1. Red, green and blue lines depict water distribution pipes of various sizes, with red being the largest mains pipes and blue being the smallest.

Our Licence Area

A map of our Licenced Operating Area for Potable Water Supply Services can be viewed on the Economic Regulation Authority website[6].

2025 Operational Audit and Asset Management Review

Busselton Water's Water Services Licence issued by the Economic Regulation Authority (ERA) of Western Australia requires Busselton Water to conduct an operational audit and asset management review every 24 months or as notified , conducted by an independent expert appointed by the ERA.

An operational audit and asset management review covering the period 1 April 2022 to 31 March 2025, was carried out in May 2025 by Stantec in accordance with the ERA's 2019 Audit and Review Guidelines: Water Licences, (August 2022). The audit/review report, including findings and recommendations, can be viewed on the Economic Regulation Authority website[7].

The ERA has subsequently advised that it will maintain Busselton Water's audit/review period at 36 months, with the next audit/review to be conducted in 2028 to cover the period 1 April 2025 to 31 March 2028.

6 https://www.erawa.com.au/sites/default/files/12840/Operating%20area%20map%20-%20WL3%20-%20Busselton%20Water.PDF

7 https://www.erawa.com.au/sites/default/files/Final%20report%20-%20WL003%20-%20Busselton%20Water%20Corporation%20-%20Audit%20and%20review%202025%20-%20Redacted.PDF

SYSTEM ANALYSIS AND MANAGEMENT

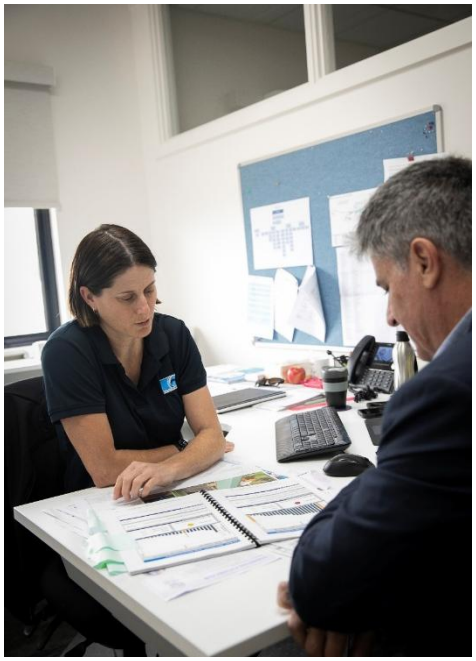
Our Water Source

Busselton Water sources most of its raw water from the deep, confined, Yarragadee aquifer which extends from about 275 metres to over 800 metres depth. There is some draw from the base of the shallower Leederville aquifer which extends from about 10 to 275 metres in depth.

Busselton Water extracts this raw water under groundwater licences (GWLs) 110850 and 110851, issued by the Department of Water and Environmental Regulation (DWER). There are eight production bores pumping the raw water to treatment plants for aeration, filtration and disinfection before the treated water is stored in tanks and reticulated to customers.

Source protection

Busselton Water, in conjunction with DWER, developed the Busselton Water Reserves Drinking Water Source Protection Plan (Report WRP 139) [8] released by the Department of Water (the predecessor of DWER) in August 2013. The Plan defines the boundaries of Busselton Water's Water Reserve and assigns a Priority 1 to these reserves. Ongoing monitoring ensures appropriate actions can be taken to mitigate any risks of contamination.



Due to the confined nature of this drinking water source, there is very little risk of contamination from overlying land uses. The purpose of proclaiming the water reserves was to ensure the bore locations are under legislative protection.

To ensure the ongoing protection of our water sources, we monitor the Local Planning Scheme 21 required by the City of Busselton as well as undertake annual risk reviews focused on monitoring any changes in land use around our sites. These reviews help us identify potential risks or developments that could impact water quality, enabling us to take prompt action to mitigate any threats. By closely tracking surrounding land uses, we maintain a proactive approach to source protection and uphold the highest standards for drinking water safety.

Busselton Water is also bound by DWER's Groundwater Licence Operating Strategy (GLOS), which is updated annually and stipulates annual extraction entitlement limits, licence conditions and compliance requirements. The annual review has specialist input by Busselton Water's consultant hydrogeologists (Rockwater Pty Ltd) who also establish the implementation of the borefield construction and maintenance plan, monitoring and reporting requirements to ensure future operational strategies are sustainable in the long term. Extraction of water in accordance with the operating strategy is shown as follows:

ANNUAL GROUNDWATER ABSTRACTED	
Financial Year	Extraction (gigalitres)
2014-2015	5.18
2015-2016	5.38
2016-2017	5.15
2017-2018	5.35
2018-2019	5.41
2019-2020	5.60
2020-2021	5.50
2021-2022	6.01
2022-2023	6.06
2023-2024	7.21
2024-2025	6.84

[8] Busselton Water Reserve Drinking Water Source Protection Review

SYSTEM ANALYSIS AND MANAGEMENT

Understanding water quality

Water quality is assessed using a range of physical, chemical, and aesthetic parameters, which are outlined in the table below.

Turbidity	Turbidity is the cloudy appearance of water caused by the presence of suspended matter.	The Australian Drinking Water Guidelines specify an aesthetic guideline of 5 Nephelometric Turbidity Units (NTU). If disinfection is required, a turbidity of less than 1 NTU is desirable at the point of disinfection.
Colour	Colour in water originates mainly from natural drainage through soil and vegetation in a catchment.	The Australian Drinking Water Guidelines value for colour is based on the colour that is noticeable in a glass. This is generally accepted as 15 Hazen Units (HU).
Iron	Iron occurs naturally in water as a result of contact with soil or rock in the catchment. Iron in the water does not present a health hazard.	The Australian Drinking Water Guidelines recommend that based on aesthetic consideration, the concentration of iron should not exceed 0.3 milligrams per litre (mg/L).
Manganese	Manganese in water can come from contact with soil or rock in the catchment. Manganese is not considered a health concern unless the concentration exceeds 0.5 mg/L.	The Australian Drinking Water Guidelines recommend that based on aesthetic considerations, the levels of manganese should not exceed 0.1 mg/L.
Total Dissolved Solids	Total dissolved solids (TDS) consist of inorganic (natural) salts and small amounts of organic matter dissolved in water. Total dissolved solids comprise sodium, potassium, calcium, magnesium, chloride, sulphate, bicarbonate, carbonate, silicon, organic matter, fluoride, iron, manganese, nitrate and phosphate.	Treated water quality containing TDS levels of below 600 mg/L is classified as good.
Microbial Pathogens	The most common and widespread health risk associated with drinking water is contamination by microorganisms. Organisms associated with the gut of humans and mammals cause the usual waterborne diseases. Tests are undertaken for *Escherichia coli* (*E. coli*) as an indicator of microbial contamination. Thermophilic *Naegleria* refers to a group of amoebae which includes *Naegleria fowleri*, the organism that causes the waterborne disease primary amoebic meningoencephalitis. *Naegleria fowleri* is an environmental pathogen which naturally lives in fresh warm water.	The Australian Drinking Water Guidelines state that thermotolerant coliforms / E.coli should not be present in a minimum 100 mL sample of drinking water. The Department of Health WA has notification protocols in place regarding *Naegleria*. Busselton Water is required to immediately notify the Department of Health if *Naegleria* is detected in any microbiological sample.
Radiological	There are natural levels of radiation within the environment, and groundwater sources such as that sourced from the Yarragadee aquifer can have higher background levels than that of surface water systems.	Testing is undertaken for gross alpha and gross beta radioactivity, where screening levels can be determined. The Australian Drinking Water Guidelines recommend a screening level of 0.5 Becquerel per Litre (Bq/L).
pH	pH is a measure of how acidic / basic water is. The range goes from 0 - 14, with 7 being neutral. pH is the measure of free hydrogen ion concentrations in the water.	The suggested aesthetic pH target from the Australian Drinking Water Guidelines is 6.5 to 8.5.

Water Treatment

Busselton Water uses a three-step conventional process to treat raw water from the groundwater aquifers to provide customers with safe drinking water.

Pre-oxidation and aeration

Raw water is dosed with a small amount of chlorine, which is a strong oxidizing agent. Water is then aerated through spray nozzles.

These two processes oxidise naturally occurring iron and manganese, turning them from their soluble form into small solids.

Filtration

The pre-chlorinated and aerated water is then filtered through sand filters to remove iron and manganese solids, turbidity and any other filterable impurities. Filtered water is then collected in a clear-water well.

Disinfection

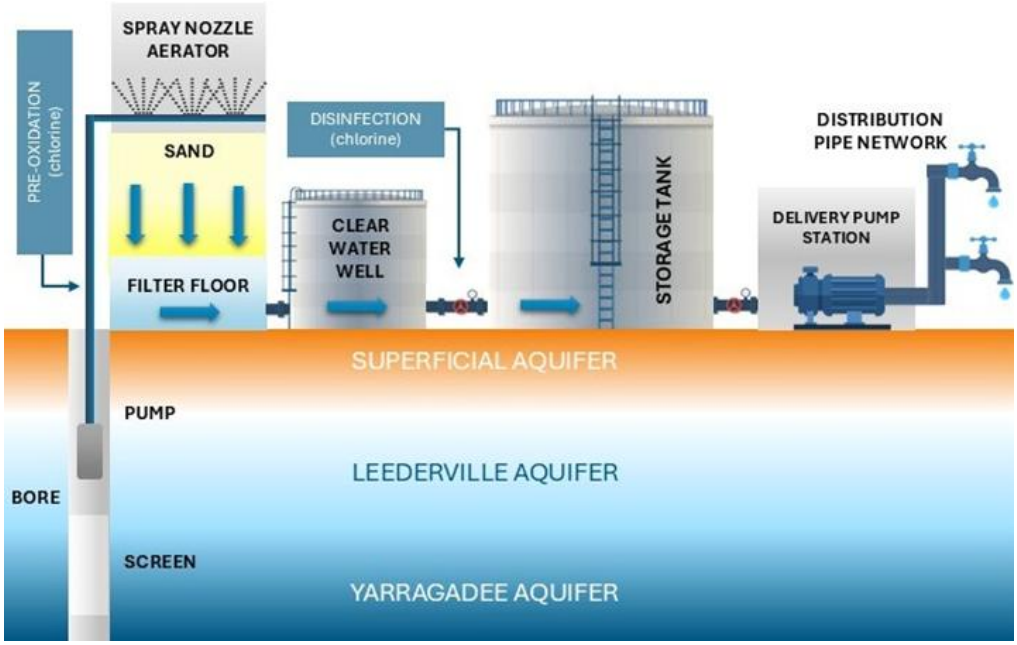
A further dose of chlorine is added to water pumped from the clearwater well to storage tanks. This chlorine maintains the disinfection level required to preserve microbiological safety of the water stored in tanks and subsequently pumped into the distribution network.

Our Water Treatment Plants

Busselton Water operates three water treatment plants.

Chlorine disinfection occurs at each treatment plant to keep the concentration of chlorine in the distribution network at or above 0.4 milligrams per litre to ensure adequate protection against Thermophilic *Naegleria* and other microbiological threats. There is also a chlorine disinfection plant located in the distribution network on the trunk main to the Busselton Airport.

Note: Busselton Water has naturally occurring fluoride in its raw water and does not add fluoride to its drinking water.



Distribution Network

Busselton Water's distribution network delivers drinking water to customers within the City of Busselton and provides bulk treated water to the Water Corporation to augment supply to Dunsborough. The network operates as one large, interconnected system.

Materials (pipes, fittings etc) used in the reticulation network have been approved either under Australian Standard AS/NZS 4020 (Testing of Products for Use in Contact with Drinking Water) or as scheduled in the MoU with the Department of Health.

Strict protocols established by Busselton Water in conjunction with the Department of Health and the Department of Mines, Industry Regulation and Safety assure the:

- safety and integrity of water distributed to customers;
- safe handling of chlorine at the water treatment plants; and
- safety of chemicals used and materials in contact with drinking water.

DISTRIBUTION NETWORK COMPONENTS	
Estimated population	>30,000
Total number of connections	15,436
Total length of pipes (km)	363.2
Number of storage tanks	5
Chlorine residual target	0.4 to 0.6 mg/L
Number of water quality localities	1

Multi-barrier Approach

Preventing contamination and minimising potential hazards is an essential part of providing our customers with safe drinking water. The ADWG require the implementation of a multi-barrier approach as the most effective way of ensuring the safety of drinking water.

Busselton Water's barriers include:

- protection of groundwater;
- treatment processes;
- chlorine disinfection; and
- backflow prevention.

Busselton Water maintains, operates and monitors these multiple barriers, ensuring they are robust, and that high-quality drinking water is delivered to our customers.

Incident Responses

While every effort is made to prevent water quality incidents from occurring, there may inevitably be times when our systems fail due to equipment malfunction, human error, extreme weather conditions or unforeseen events. Busselton Water has incident response plans to manage such events ensuring minimum possible impact on water quality.

In the event of a water quality incident, Busselton Water activates its Water Quality Incident Response Plan.
This comprehensive plan is applied to manage water quality incidents.

Business Continuity

In June 2025, a Water Quality mock event was held with Department of Health participation and other stakeholders. The mock event tested Busselton Water's Business Continuity and Emergency Response Plans for delivery of safe water and effective continuity of supply against a scenario involving a potential cyber-security incident relating to Busselton Water's SCADA network. A number of minor improvements to Busselton Water's processes were identified.

Water Quality Monitoring and Testing

Busselton Water has a comprehensive water quality monitoring program which has been reviewed and endorsed by the Department of Health. Key parameters monitored by Busselton Water are:

• microbiological – including Thermophilic *Naegleria* and *Escherichia coli*;

• chemical health – including:

- a large range of parameters with health-related guideline values defined by the ADWG; and

- pesticides which are monitored and tested on an annual basis to monitor the risk of groundwater contamination by pesticides and agricultural chemicals used in proximity to our bores or in the aquifer recharge area;

• chemical non-health (aesthetic) – including a large range of parameters with non- health guideline values defined by the ADWG; and

• radiological health – monitored and tested every two years.

• PFAS/PFOS sampling regime, commencing in 2023-24, for raw and treated water.

Development, Training and Innovation

Busselton Water utilises training in accordance with the National Water Industry Training package. Water quality operational staff progress towards Certificate III in Water Industry Operations.

Busselton Water adopts a best practice 70/20/10 development approach. This approach allocates more time to experiential learning and delivers better employee development and business outcomes.

It consists of 70 per cent experiential learning, 20 per cent mentorship of employee learning (including development planning), and 10 per cent approved class- based training. Personnel regularly attend relevant training courses and / or conferences.

Busselton Water continued to derive benefit from innovative detection of backflow from residential customers' properties using radio frequency water meters.

Our Customers

We strive to deliver excellence in customer service and continue to improve our existing levels of customer satisfaction. Busselton Water operates within a customer centricity mode where the customer remains at the centre of our work environment. Our goal is to leave our customers feeling satisfied and confident that we genuinely care about addressing their concerns after every interaction. As a result of this way of thinking and operating, water quality complaints remain at a very low level.

Busselton Water received 16 water quality complaints during 2024-2025, with six relating to taste and odour, eight relating to discoloured water and two relating to skin conditions. This equates to 1.037 complaints per 1,000 properties.

All customer complaints were investigated through personal contact with the customer. All complaints were resolved through either flushing the pipe network in the immediate vicinity of the customer's property and, where appropriate, improving the customer's understanding of how drinking water quality is managed.

Preserved Supply Register

Busselton Water maintains a preserved supply register that provides details of its customers that require water for use of a dialysis machine, other life support machine, or for a special need of another kind. Customers may contact Busselton Water to be added to the register and in the event of a service interruption that will affect the customer's registered supply address, we will provide notice to ensure the supply of water to these customers[9].

[9] https://www.busseltonwater.wa.gov.au/customers/faults-and-leaks/service-interruptions/

REVIEW

Busselton Water monitors water quality in accordance with the requirements of the ADWG and Department of Health and ensures that all its dosing, measurement and sampling equipment, and the instrumentation that is used to monitor and control its drinking water quality, is calibrated pursuant to the *National Measurement Act 1960* (Cth).

Busselton Water understands the importance of holistic catchment to tap risk management processes that focus on the capabilities and resilience of the entire system, not just reactive measures of quality at the point of supply. Senior Executives regularly review the approach to drinking water quality management, develop action plans, and commit the resources necessary to improve operational processes and overall drinking water quality performance.

The public can be confident that water supplied by Busselton Water complies fully with health parameters under the Australian Drinking Water Guidelines, which are among the most stringent standards of their kind anywhere in the world. Busselton Water has no issue with companies selling water filtration systems, but together with the Department of Health, we take very seriously any false health claims relating to the safety of drinking water supplies.

Microbiological Health and Disinfection Results

Busselton Water collected 463 samples from its reticulation system for formal assessment during the reporting period and 100 per cent of these samples were compliant, with no detections of either *Escherichia coli* or Thermophilic *Naegleria*. A further 2,854 samples were taken to assess chlorine levels (2,201 in the distribution network and 653 in the storage tanks).

Chemical Health Results

There are many chemical parameters that have health related guideline values in the ADWG. Busselton Water achieved 100 per cent compliance with all these requirements. The report in the next section gives more detail on the individual parameters.

Perfluoroalkyl and Polyfluoroalkyl substances (PFAS) are a family of manufactured chemicals which do not occur naturally in the environment. PFAS has been identified in the environment at several known and suspected contaminated sites in Western Australia including one in Busselton.

No PFAS has been detected in Busselton Water's source water when the contaminated site was identified. Liaison continues with the City of Busselton, the Department of Health and the Department of Water and Environmental Regulation regarding ongoing monitoring and testing of our supply.

Radiological Health Results

Groundwater radiological testing is conducted in accordance with parameters and frequencies based on the ADWG and in consultation with the Department of Health. This testing is only required every two years. Gross alpha and gross beta were tested in April 2024 and results from these samples were 100 per cent compliant. Radiological testing will next be undertaken in April 2026.

Visibility of Water Quality Information

Quarterly and annual water quality reports are posted on the Busselton Water website and Executive reports are provided to the Board.

Staff are continually updated and involved in water quality management and relevant data is made readily available. As a simple example, the "Ten Commandments for Safe Drinking Water" (Hrudey & Hrudey 2014)[10] is on display at the operational depot as a reminder to staff.

Non-health (Aesthetic) Results

Except for chlorine as described below, Busselton Water achieved 98.9 per cent compliance with non-health (Aesthetic) parameters. One colour, two iron and 19 pH sample results were slightly outside their respective ADWG aesthetic limits (refer to pages 28 and 29 for details). These operational fluctuations are of minor concern and resulted in no adverse customer impacts.

Busselton Water uses chlorine to provide a disinfectant residual in the water distribution network. Disinfection is designed to kill pathogenic microorganisms, thereby preventing waterborne diseases. Chlorination is the most used process for disinfection and has been endorsed by the National Health and Medical Research Council for use as a drinking water treatment chemical.

The ADWG state that "*In some supplies it may be necessary to exceed the aesthetic guideline in order to maintain an effective disinfectant residual throughout the system*." Busselton Water closely manages chlorine dosing levels to maintain a minimum residual chlorine level of 0.4 milligrams per litre throughout the distribution network. During the year, Busselton Water collected 2,655 chlorine samples in the distribution network and 653 chlorine samples in the storage tanks.

There are many parameters with aesthetic guideline values in the ADWG. Results of individual parameters are outlined in the next section of this report.

[10] Hrudey S E, Hrudey E J, Ten Commandments For Safe Drinking Water Canadian Water Network 2020, and American Water and Wastewater Association, 2014

WATER QUALITY RESULTS

In the period 1 July 2024 to 30 June 2025, there were no water quality incidents reportable to the Department of Health.

Busselton Water collected 708 free chlorine samples during 2024-2025 (463 in the distribution network and 245 in the storage tanks) for formal assessment of our water's chemical health characteristics. An additional 3,888 chlorine samples (free and total) were taken during 2024-2025 to manage the disinfection performance achieved within the pipe network. The minimum, average and maximum levels of these additional operational samples were:

CHLORINE SAMPLES – 1 JULY 2024 TO 30 JUNE 2025			
TYPE	**Minimum mg/L**	**Average mg/L**	**Maximum mg/L**
Distributed Chlorine (Free)	0.25	0.52	0.76
Distributed Chlorine (Total)	0.26	0.56	0.81

MICROBIOLOGICAL SAMPLES – 1 JULY 2024 TO 30 JUNE 2025										
CHARACTERISTIC	**UNIT**	**ADWG LIMIT**	**Number of Samples**		**Total No. of Samples (Treated + Distribution)**	**Maximum Value**		**Number of Non Compliance with ADWG Limit**		**Compliance % Distribution Water**
			Treated Water (Non-Assessable)	**Distribution Water (Assessable)**		**Treated Water (Non-Assessable)**	**Distribution Water (Assessable)**	**Treated Water (Non-Assessable)**	**Distribution Water (Assessable)**	
Escherichia coli	CFU/100 mL	0	245	463	708	0	0	0	0	100%
Thermophilic *Naegleria*	org/250 mL	ND	245	463	708	ND	ND	0	0	100%
Naegleria fowleri	org/250 mL	ND	0	0	0	-	-	0	0	100%

Note 1 CFU = colony forming units

Note 2 Tests for *Naegleria Fowleri* only required if Thermophilic *Naegleria* is detected.

Note 3 Sampling for *E. coli* in the distribution network commenced on 30 March 2010. There has not been an *E. coli* detection in the distribution network to date.

Note 4 The last known Thermophilic *Naegleria* detection in the distribution network was at Vernon Track on 16 August 2011.

CHEMICAL HEALTH - 1 JULY 2024 TO 30 JUNE 2025											
CHARACTERISTIC	UNIT	ADWG Health Guideline	Lab Limit of Reporting (LOR)	Number of Samples		Total No. of Samples (Raw + Distribution)	Maximum Value		Number of Non Compliance with ADWG Health Guideline		Compliance % Distribution Water
				Raw Water	Distribution Water		Raw Water	Distribution Water	Raw Water	Distribution Water	
Antimony	mg/L	0.003	*0.001*	NR	35	35	NR	ND	NR	0	100%
Arsenic	mg/L	0.01	*0.001*	NR	35	35	NR	ND	NR	0	100%
Barium	mg/L	2	*0.01*	NR	35	35	NR	0.37	NR	0	100%
Beryllium	mg/L	0.06	*0.001*	NR	35	35	NR	ND	NR	0	100%
Boron	mg/L	4	*0.05*	NR	35	35	NR	0.29	NR	0	100%
Bromate	mg/L	0.02	*0.005*	NR	9	9	NR	ND	NR	0	100%
Bromide	mg/L	No guideline	*0.1*	8	9	17	0.4	ND	No guideline	No guideline	No guideline
Bromodichloromethane	mg/L	0.25*	*0.005*	NR	12	12	NR	ND	NR	0	100%
Bromoform	mg/L	0.25*	*0.005*	NR	12	12	NR	0.0032	NR	0	100%
Cadmium	mg/L	0.002	*0.0005*	NR	35	35	NR	ND	NR	0	100%
Chlorine (Total)	mg/L	5		NR	454	454	NR	0.81	NR	0	100%
Chloroform	mg/L	0.25*	*0.0005*	NR	12	12	NR	ND	NR	0	100%
Chromium (VI)	mg/L	0.05	*0.002*	NR	35	35	NR	ND	NR	0	100%
Copper	mg/L	2	*0.001*	NR	35	35	NR	0.04	NR	0	100%
Dibromochloromethane	mg/L	0.25*	*0.001*	NR	12	12	NR	ND	NR	0	100%
Fluoride *(See Note 6 below)*	mg/L	1.5	*0.1*	107	105	212	0.9	0.7	0	0	100%
Lanthanum	mg/L	0.002	*0.001*	NR	9	9	NR	ND	NR	0	100%
Lead	mg/L	0.01	*0.001*	NR	35	35	NR	ND	NR	0	100%
Manganese (Soluble)	mg/L	0.5	*0.01*	107	105	212	0.085	ND	0	0	100%
Manganese (Total)	mg/L	0.5	*0.01*	107	105	212	0.15	0.014	0	0	100%
Mercury	mg/L	0.001	*0.0001*		35	35	NR	ND	NR	0	100%
Molybdenum	mg/L	0.05	*0.001*		35	35	NR	ND	NR	0	100%
Nickel	mg/L	0.02	*0.001*		35	35	NR	ND	NR	0	100%
Nitrate-NO3	mg/L	50	*0.01*	31	35	66	2.4	0.05	0	0	100%
Nitrite NO2	mg/L	3	*0.01*	31	35	66	0.1	ND	0	0	100%
Selenium	mg/L	0.01	*0.001*	NR	35	35	NR	0.002	NR	0	100%
Silver	mg/L	0.1	*0.001*	NR	35	35	NR	ND	NR	0	100%
Total Trihalomethanes *	mg/L	0.25*	*0.001*	NR	12	12	NR	0.0032	NR	0	100%
Uranium	mg/L	0.020	*0.001*	NR	35	35	NR	ND	NR	0	100%
TOTAL				**391**	**1451**	**1842**			**0**	**0**	**100%**

Note 1 mg/L = milligrams per litre
NTU = Nephelometric turbidity units
ND = Not Detected
NR = Not required to be sampled

Note 2: Raw water is blended and treated prior to supply to consumers. Raw water is not provided to consumers and raw water data presented is for operational purposes.

Note 3 Chlorine Total is a Busselton Water in-house test. All others are NATA accredited test results. The operating target for residual chlorine in the reticulation system is 0.4 – 0.6 mg/L. Total chlorine levels will be higher than residual levels.

Note 4 The average Chlorine Total level in the distribution network for the reporting period was 0.56 mg/L.

Note 5 The maximum Chlorine Total level of 0.81 mg/L in the distribution network for the reporting period was recorded at the Thomas Street sample point on 27 February 2025. No adverse customer or operational impacts resulted. The aesthetic guideline value of 0.6 mg/L is exceeded on some occasions to ensure the microbiological safety of our water supply.

Note 6 Busselton Water does not add fluoride to the water. The naturally occurring fluoride levels vary from bore to bore. The maximum value shown is not indicative of the level throughout the Busselton water supply. Fluoride levels in the drinking water vary with location and time and can be between 0.1 and 1.0 mg/L. The average fluoride level in the distribution network for the reporting period was 0.42 mg/L.

Note 7 * The concentration of trihalomethanes, either individually or in total, in drinking water should not exceed 0.25 mg/L.

PERFLUOROALKYL AND POLYFLUOROALKYL SUBSTANCES (PFAS) - 1 JULY 2024 TO 30 JUNE 2025												
CHARACTERISTIC	UNIT	ADWG Health Guideline	Lab Limit of Reporting (LOR)	Number of Samples		Total No. of Samples (Raw + Distribution)	Maximum Value		Number of Non Compliance with ADWG Health Guideline		Compliance % Distribution Water
				Raw Water	Distribution Water		Raw Water	Distribution Water	Raw Water	Distribution Water	
Perfluoroalkyl sulphonamide substances - Trace											
Perfluorooctane sulfonamide (FOSA)N11	µg/L	No Guideline	0.005	16	22	38	ND	ND	No Guideline	No Guideline	No Guideline
N-methylperfluoro-1-octane sulfonamide (N- MeFOSA)N11	µg/L	No Guideline	0.005	16	22	38	ND	ND	No Guideline	No Guideline	No Guideline
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)N11	µg/L	No Guideline	0.005	16	22	38	ND	ND	No Guideline	No Guideline	No Guideline
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N- MeFOSE)N11	µg/L	No Guideline	0.005	16	22	38	ND	ND	No Guideline	No Guideline	No Guideline
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N- EtFOSE)N11	µg/L	No Guideline	0.005	16	22	38	ND	ND	No Guideline	No Guideline	No Guideline
N-ethyl-perfluorooctanesulfonamidoacetic acid (N- EtFOSAA)N11	µg/L	No Guideline	0.005	16	22	38	ND	ND	No Guideline	No Guideline	No Guideline
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)N11	µg/L	No Guideline	0.005	16	22	38	ND	ND	No Guideline	No Guideline	No Guideline
Perfluoroalkyl carboxylic acids (PFCAs) – Trace											
Perfluorobutanoic acid (PFBA)N11	µg/L	No Guideline	0.005	16	22	38	ND	ND	No Guideline	No Guideline	No Guideline
Perfluoropentanoic acid (PFPeA)N11	µg/L	No Guideline	0.001	16	22	38	ND	ND	No Guideline	No Guideline	No Guideline
Perfluorohexanoic acid (PFHxA)N11	µg/L	No Guideline	0.001	16	22	38	ND	ND	No Guideline	No Guideline	No Guideline
Perfluoroheptanoic acid (PFHpA)N11	µg/L	No Guideline	0.005	16	22	38	ND	ND	No Guideline	No Guideline	No Guideline
Perfluorooctanoic acid (PFOA)N11	µg/L	0.56	0.001	16	22	38	ND	ND	0	0	100%
Perfluorononanoic acid (PFNA)N11	µg/L	No Guideline	0.001	16	22	38	ND	ND	No Guideline	No Guideline	No Guideline
Perfluorodecanoic acid (PFDA)N11	µg/L	No Guideline	0.001	16	22	38	ND	ND	No Guideline	No Guideline	No Guideline
Perfluorotridecanoic acid (PFTrDA)N15	µg/L	No Guideline	0.001	16	22	38	ND	ND	No Guideline	No Guideline	No Guideline
Perfluoroundecanoic acid (PFUnDA)N11	µg/L	No Guideline	0.001	16	22	38	ND	ND	No Guideline	No Guideline	No Guideline
Perfluorododecanoic acid (PFDoDA)N11	µg/L	No Guideline	0.001	16	22	38	ND	ND	No Guideline	No Guideline	No Guideline
Perfluorotetradecanoic acid (PFTeDA)N11	µg/L	No Guideline	0.001	16	22	38	ND	ND	No Guideline	No Guideline	No Guideline
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)- Trace											
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)N11	µg/L	No Guideline	0.001	16	22	38	ND	ND	No Guideline	No Guideline	No Guideline
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)N11	µg/L	No Guideline	0.005	16	22	38	ND	ND	No Guideline	No Guideline	No Guideline
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)N11	µg/L	No Guideline	0.001	16	22	38	ND	ND	No Guideline	No Guideline	No Guideline
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)N11	µg/L	No Guideline	0.001	16	22	38	ND	ND	No Guideline	No Guideline	No Guideline
8											
Perfluoroalkyl sulfonic acids (PFSAs)- Trace											
Perfluorobutanesulfonic acid (PFBS)N11	µg/L	No Guideline	0.001	16	22	38	ND	ND	No Guideline	No Guideline	No Guideline
Perfluorononanesulfonic acid (PFNS)*N15	µg/L	No Guideline	0.001	16	22	38	ND	ND	No Guideline	No Guideline	No Guideline
Perfluoropropanesulfonic acid (PFPrS)*N15	µg/L	No Guideline	0.001	16	22	38	ND	ND	No Guideline	No Guideline	No Guideline
Perfluoropentanesulfonic acid (PFPeS)N15	µg/L	No Guideline	0.001	16	22	38	ND	ND	No Guideline	No Guideline	No Guideline
Perfluorohexanesulfonic acid (PFHxS)N11	µg/L	No Guideline	0.001	16	22	38	ND	ND	No Guideline	No Guideline	No Guideline
Perfluoroheptanesulfonic acid (PFHpS)N15	µg/L	No Guideline	0.001	16	22	38	ND	ND	No Guideline	No Guideline	No Guideline

PERFLUOROALKYL AND POLYFLUOROALKYL SUBSTANCES (PFAS) - 1 JULY 2024 TO 30 JUNE 2025											
CHARACTERISTIC	UNIT	ADWG Health Guideline	Lab Limit of Reporting (LOR)	Number of Samples		Total No. of Samples (Raw + Distribution)	Maximum Value		Number of Non Compliance with ADWG Health Guideline		Compliance % Distribution Water
				Raw Water	Distribution Water		Raw Water	Distribution Water	Raw Water	Distribution Water	
Perfluorooctanesulfonic acid (PFOS)N11	µg/L	No Guideline	0.001	16	22	38	ND	ND	No Guideline	No Guideline	No Guideline
Perfluorodecanesulfonic acid (PFDS)N15	µg/L	No Guideline	0.001	16	22	38	ND	ND	No Guideline	No Guideline	No Guideline
PFASs Summations											
Sum (PFHxS + PFOS)*	µg/L	0.07	0.001	16	22	38	ND	ND	0	0	100%
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	µg/L	No Guideline	0.001	16	22	38	ND	ND	No Guideline	No Guideline	No Guideline
Sum of PFASs (n=30)*	µg/L	No Guideline	0.005	16	22	38	ND	ND	No Guideline	No Guideline	No Guideline
Sum of US EPA PFAS (PFOS + PFOA)*	µg/L	No Guideline	0.001	16	22	38	ND	ND	No Guideline	No Guideline	No Guideline
Sum of WA DWER PFAS (n=10)*	µg/L	No Guideline	0.005	16	22	38	ND	ND	No Guideline	No Guideline	No Guideline
Sum of WA DWER PFAS (n=10)*	µg/L	No Guideline	0.005	16	22	38	ND	ND	No Guideline	No Guideline	No Guideline
TOTAL				**576**	**792**	**1368**			**0**	**0**	**100%**

Note 1: µg/L = micrograms per litre
ND = Not Detected
No Guideline = No ADWG guideline. Compliance is not required or shown for these analytes.

Note 2: Raw water is blended and treated prior to supply to consumers. Raw water is not provided to consumers and raw water data presented is for operational purposes.

Note 3: It should be noted that the PFOS and PFOA results reported here reflect compliance with the guideline limits established in version 3.7 of the Australian Drinking Water Guidelines (ADWG), as endorsed by the Department of Health (DoH). These limits were in effect during the reporting period.

CHEMICAL HEALTH – PESTICIDES AND HERBICIDES – 1 JULY 2024 TO 30 JUNE 2025							
CHARACTERISTIC	UNIT	ADWG Health Guideline	Lab Limit of Reporting (LOR)	Number of Samples	Maximum Value	Number of Non-compliance with ADWG Health Guideline	Compliance %
				Storage Tanks (Drinking Water)			
Acid Herbicides							
Dicamba	µg/L	100	0.1	5	ND	0	100%
MCPA	µg/L	40	0.1	5	ND	0	100%
2,4-D	µg/L	200	0.1	5	ND	0	100%
2,4,5-T	µg/L	100	0.1	5	ND	0	100%
2,4,6-T	µg/L	20	0.1	5	ND	0	100%
Picloram	µg/L	300	0.2	5	ND	0	100%
Fluazifop	µg/L	No Guideline	0.4	5	ND	No Guideline	No Guideline
Clopyralid	µg/L	2000	0.4	5	ND	0	100%
Metsulfuron Methyl	µg/L	40	0.5	5	ND	0	100%
Triclopyr	µg/L	20	0.1	5	ND	0	100%
Base Neutral Pesticides							
Diuron	µg/L	20	0.5	5	ND	0	100%
Prometryn	µg/L	No Guideline	0.1	5	ND	No Guideline	No Guideline
Molinate	µg/L	4	0.1	5	ND	0	100%
Terbutryn	µg/L	400	0.1	5	ND	0	100%
Fenitrothion	µg/L	7	0.1	5	ND	0	100%
Fluometuron	µg/L	70	0.1	5	ND	0	100%
Chlorpyrifos	ug/L	10	0.1	5	ND	0	100%
Trifluralin	µg/L	90	0.1	5	ND	0	100%
Dimethoate	ug/L	7	0.1	5	ND	0	100%
Endosulfan I	µg/L	20	0.1	5	ND	0	100%
Fenamiphos	µg/L	0.5	0.1	5	ND	0	100%
Simazine	µg/L	20	0.1	5	ND	0	100%
Atrazine	µg/L	20	0.1	5	ND	0	100%
Endosulfan II	µg/L	20	0.1	5	ND	0	100%
Endosulfan Sulfate	µg/L	No Guideline	0.1	5	ND	No Guideline	No Guideline
Propazine	µg/L	50	0.1	5	ND	0	100%
Diclofop Methyl	µg/L	5	0.1	5	ND	0	100%
Amitraz	µg/L	9	0.1	5	ND	0	100%
Tebuconazole	µg/L	No Guideline	0.4	5	ND	No Guideline	No Guideline
Metolachlor	µg/L	300	0.2	5	ND	0	100%
Hexazinone	µg/L	400	0.4	5	ND	0	100%
Myclobutanil	µg/L	No Guideline	0.4	5	ND	No Guideline	No Guideline
Azinphos Methyl	ug/L	30	1	5	ND	0	100%
Propiconazole	µg/L	100	0.4	5	ND	0	100%
Pesticides							
Aldicarb	µg/L	4	1	5	ND	0	100%
Aldicarb Sulfone	µg/L	4	1	5	ND	0	100%

CHEMICAL HEALTH – PESTICIDES AND HERBICIDES – 1 JULY 2024 TO 30 JUNE 2025							
CHARACTERISTIC	UNIT	ADWG Health Guideline	Lab Limit of Reporting (LOR)	Number of Samples	Maximum Value	Number of Non-compliance with ADWG Health Guideline	Compliance %
				Storage Tanks (Drinking Water)			
Aldicarb Sulfoxide	µg/L	4	1	5	ND	0	100%
Aminocarb	µg/L	No Guideline	1	5	ND	No Guideline	No Guideline
Bromacil	µg/L	400	2	5	ND	0	100%
Carbaryl	µg/L	30	4	5	ND	0	100%
Carbendazim	µg/L	90	1	5	ND	0	100%
Carbofuran	µg/L	10	1	5	ND	0	100%
Diuron	µg/L	20	0.5	5	ND	0	100%
EPTC	µg/L	300	5	5	ND	0	100%
Fenamiphos	µg/L	0.5	0.1	5	ND	0	100%
Fenuron/Fenuron TCA	µg/L	No Guideline	2	5	ND	No Guideline	No Guideline
Fluometuron	µg/L	70	1	5	ND	0	100%
Linuron	µg/L	No Guideline	5	5	ND	No Guideline	No Guideline
Methiocarb	µg/L	7	4	5	ND	0	100%
Methomyl	µg/L	20	2	5	ND	0	100%
Mexacarbate	µg/L	No Guideline	1	5	ND	No Guideline	No Guideline
Monuron/Monuron TCA	µg/L	No Guideline	2	5	ND	No Guideline	No Guideline
Oxamyl	µg/L	7	2	5	ND	0	100%
Propachlor	µg/L	70	1	5	ND	0	100%
Propham	µg/L	No Guideline	5	5	ND	No Guideline	No Guideline
Propoxur	µg/L	No Guideline	1	5	ND	No Guideline	No Guideline
Siduron	µg/L	No Guideline	1	5	ND	No Guideline	No Guideline
Organochlorine Pesticides							
Aldrin	µg/L	0.3	0.001	5	ND	0	100%
alpha-BHC (HCH)	µg/L	No Guideline	0.001	5	ND	No Guideline	No Guideline
beta-BHC (HCH)	µg/L	No Guideline	0.001	5	ND	No Guideline	No Guideline
delta-BHC (HCH)	µg/L	No Guideline	0.001	5	ND	No Guideline	No Guideline
Bifenthrin	µg/L	No Guideline	0.05	5	ND	No Guideline	No Guideline
Bromophos Ethyl	µg/L	10	0.005	5	ND	0	100%
Chlordane	µg/L	2	0.002	5	ND	0	100%
Chlorothalonil	µg/L	50	0.01	5	ND	0	100%
Chlorpyrifos	µg/L	10	0.005	5	ND	0	100%
Diazinon	ug/L	4	0.01	5	ND	0	100%
Dieldrin	µg/L	0.3	0.001	5	ND	0	100%
Endosulfan I	µg/L	20	0.001	5	ND	0	100%
Endosulfan II	µg/L	20	0.001	5	ND	0	100%
Endosulfan Sulfate	µg/L	20	0.001	5	ND	0	100%
Endrin	µg/L	No Guideline	0.01	5	ND	No Guideline	No Guideline
Ethion	ug/L	4	0.01	5	ND	0	100%
Fenitrothion	µg/L	7	0.01	5	ND	0	100%

CHEMICAL HEALTH – PESTICIDES AND HERBICIDES – 1 JULY 2024 TO 30 JUNE 2025							
CHARACTERISTIC	UNIT	ADWG Health Guideline	Lab Limit of Reporting (LOR)	Number of Samples	Maximum Value	Number of Non-compliance with ADWG Health Guideline	Compliance %
				Storage Tanks (Drinking Water)			
Fipronil	µg/L	0.7	0.02	5	ND	0	100%
Heptachlor	µg/L	0.3	0.001	5	ND	0	100%
Heptachlor Epoxide	µg/L	No Guideline	0.001	5	ND	No Guideline	No Guideline
Hexachlorobenzene (HCB)	µg/L	No Guideline	0.001	5	ND	No Guideline	No Guideline
Lindane	µg/L	10	0.001	5	ND	0	100%
Malathion	µg/L	70	0.01	5	ND	0	100%
Methoxychlor	µg/L	30	0.02	5	ND	0	100%
o,p-DDT	µg/L	9	0.001	5	ND	0	100%
Oxychlordane	µg/L	No Guideline	0.001	5	ND	No Guideline	No Guideline
p,p-DDD	µg/L	No Guideline	0.001	5	ND	No Guideline	No Guideline
p,p-DDE	µg/L	No Guideline	0.001	5	ND	No Guideline	No Guideline
p,p-DDT	µg/L	9	0.001	5	ND	0	100%
Parathion Ethyl	µg/L	20	0.02	5	ND	0	100%
Parathion Methyl	µg/L	1	0.02	5	ND	0	100%
Trifluralin	µg/L	90	0.01	5	ND	0	100%
Vinclozolin	µg/L	No Guideline	0.02	5	ND	No Guideline	No Guideline
TOTAL				**450**		**0**	**100%**

Note 1:

mg/L	milligrams per litre
µg/L	micrograms per litre
ND	Not Detected
No Guideline	No ADWG guideline. Compliance is not required or shown for these analytes.

CHEMICAL HEALTH – VOLATILE ORGANIC COMPOUNDS – 1 JULY 2024 TO 30 JUNE 2025							
CHARACTERISTIC	UNIT	ADWG Health Guideline	Lab Limit of Reporting (LOR)	Number of Samples	Maximum Value	Number of Non-compliance with ADWG Health Guideline	Compliance %
Storage Tanks							
Haloacetic Acids							
Chloroacetic acid	µg/L	150	2	5	ND	0	100%
Bromoacetic acid	µg/L	No Guideline	2	5	ND	No Guideline	No Guideline
Dichloroacetic acid	µg/L	100	2	5	ND	0	100%
Trichloroacetic acid	µg/L	100	2	5	ND	0	100%
Bromochloroacetic acid	µg/L	No Guideline	2	5	ND	No Guideline	No Guideline
Bromodichloroacetic acid	µg/L	No Guideline	2	5	ND	No Guideline	No Guideline
Dibromoacetic acid	µg/L	No Guideline	2	5	ND	No Guideline	No Guideline
Dibromochloroacetic acid	µg/L	No Guideline	5	5	ND	No Guideline	No Guideline
Tribromoacetic acid	µg/L	No Guideline	5	5	ND	No Guideline	No Guideline
Plasticisers							
Dimethyl phthalate	µg/L	No Guideline	1	5	ND	No Guideline	No Guideline
Diethyl phthalate	µg/L	No Guideline	1	5	ND	No Guideline	No Guideline
Dibutyl phthalate	µg/L	No Guideline	1	5	ND	No Guideline	No Guideline
Benzyl butyl phthalate	µg/L	No Guideline	1	5	ND	No Guideline	No Guideline
Di(2-ethylhexyl) adipate	µg/L	10	1	5	ND	0	100%
Di(2-ethylhexyl) phthalate	µg/L	10	1	5	ND	0	100%
Di-n-Octyl phthalate	µg/L	No Guideline	1	5	ND	No Guideline	No Guideline
Volatile Organic Carbons							
Benzene	µg/L	1	0.5	5	ND	0	100%
Carbon tetrachloride	µg/L	3	0.5	5	ND	0	100%
Chlorobenzene	µg/L	300	0.5	5	ND	0	100%
DCM	µg/L	No Guideline	5	5	ND	No Guideline	No Guideline
Ethylbenzene	µg/L	300	0.5	5	ND	0	100%
Hexachlorobutadiene	µg/L	0.7	0.5	5	ND	0	100%
Methyl-tert-Butyl Ether	µg/L	No Guideline	0.5	5	ND	No Guideline	No Guideline
Styrene	µg/L	4	0.5	5	ND	0	100%
Perchloroethene (PCE)	µg/L	No Guideline	0.5	5	ND	No Guideline	No Guideline
Toluene	µg/L	800	0.5	5	ND	0	100%
Trichloroethylene (TCE)	µg/L	No Guideline	0.5	5	ND	No Guideline	No Guideline
Vinyl Chloride	µg/L	0.3	0.2	5	ND	0	100%
Xylenes (Total)	µg/L	600	3	5	ND	0	100%
1,1-Dichloroethane	µg/L	No Guideline	0.5	5	ND	No Guideline	No Guideline
1,2-Dichloroethane	µg/L	3	0.5	5	ND	0	100%
1,1-Dichloroethene	µg/L	30	0.5	5	ND	0	100%
cis-1,2-Dichloroethene	µg/L	60	0.5	5	ND	0	100%
trans-1,2-Dichloroethene	µg/L	60	2	5	ND	0	100%
1,1,1-Trichloroethane	µg/L	No Guideline	0.5	5	ND	No Guideline	No Guideline
1,1,1,2-Tetrachloroethane	µg/L	No Guideline	0.5	5	ND	No Guideline	No Guideline

CHEMICAL HEALTH – VOLATILE ORGANIC COMPOUNDS – 1 JULY 2024 TO 30 JUNE 2025							
CHARACTERISTIC	**UNIT**	**ADWG Health Guideline**	**Lab Limit of Reporting (LOR)**	**Number of Samples**	**Maximum Value**	**Number of Non-compliance with ADWG Health Guideline**	**Compliance %**
Storage Tanks							
1,1,2,2-Tetrachloroethane	µg/L	No Guideline	0.5	5	ND	No Guideline	No Guideline
1,2-Dichlorobenzene	µg/L	1500	0.5	5	ND	0	100%
1,3-Dichlorobenzene	µg/L	No Guideline	0.5	5	ND	No Guideline	No Guideline
1,4-Dichlorobenzene	µg/L	40	0.5	5	ND	0	100%
1,2,3-Trichlorobenzene	µg/L	30	0.5	5	ND	0	100%
1,2,4-Trichlorobenzene	µg/L	30	0.5	5	ND	0	100%
1,3,5-Trichlorobenzene	µg/L	30	0.5	5	ND	0	100%
TOTAL				**215**		0	**100%**

Note 1: µg/L micrograms per litre
ND Not Detected
No Guideline No ADWG guideline. Compliance is not required or shown for these analytes.

CHEMICAL HEALTH – 1 JULY 2024 TO 30 JUNE 2025							
CHARACTERISTIC	UNIT	ADWG Health Guideline	Lab Limit of Reporting (LOR)	Number of Samples	Maximum Value	Number of Non-compliance with ADWG Health Guideline	Compliance %
Storage Tanks							
Synthetic Pyrethroids							
Alphamethrin	µg/L	No Guideline	0.05	5	ND	No Guideline	No Guideline
Cyfluthrin	µg/L	50	0.05	5	ND	0	100%
Cyhalothrin	µg/L	No Guideline	0.05	5	ND	No Guideline	No Guideline
Cypermethrin	µg/L	200	0.05	5	ND	0	100%
Deltamethrin	µg/L	40	1	5	ND	0	100%
Fenvalerate	µg/L	60	0.05	5	ND	0	100%
Permethrin	µg/L	200	0.05	5	ND	0	100%
Paraquat, Diquat, Amitrole							
Paraquat	µg/L	20	1	5	ND	0	100%
Diquat	µg/L	7	1	5	ND	0	100%
Amitrole	µg/L	0.9	0.9	5	ND	0	100%
Organotins							
Tributyl tin as Sn	ng/L	No Guideline	2	5	ND	0	100%
Monobutyl tin as Sn	ng/L	No Guideline	5	5	ND	No Guideline	No Guideline
Dibutyl tin as Sn	ng/L	No Guideline	5	5	ND	No Guideline	No Guideline
Miscellaneous Organics							
Acrylamide	µg/L	0.2	0.1	5	ND	0	100%
Dalapon	µg/L	No Guideline	2	5	ND	No Guideline	No Guideline
Ethylenediaminetetraacetic acid (EDTA)	µg/L	250	20	5	ND	0	100%
Glyphosate	mg/L	No Guideline	0.1	5	ND	No Guideline	No Guideline
AminoMethylPhosphonic Acid (AMPA)	mg/L	No Guideline	0.1	5	ND	No Guideline	No Guideline
Nitrilotriacetic acid (NTA)	µg/L	200	20	5	ND	0	100%
Metals							
Silver - Filtered	mg/L	0.1	0.001	5	ND	0	100%
Tin - Filtered	mg/L	No Guideline	0.001	5	ND	No Guideline	No Guideline
Iodide	mg/L	0.5	0.1	5	ND	0	100%
TOTAL				**110**		**0**	**100%**

Note 1:

mg/L	milligrams per litre
µg/L	micrograms per litre
ng/L	nanograms per litre
ND	Not Detected
No Guideline	No ADWG guideline. Compliance is not required or shown for these analytes/

CHEMICAL HEALTH - 1 JULY 2024 TO 30 JUNE 2025							
CHARACTERISTIC	UNIT	ADWG Health Guideline	Lab Limit of Reporting (LOR)	Number of Samples	Maximum Value	Number of Non-compliance with ADWG Health Guideline	Compliance %
Distribution Network							
Haloacetic Acids							
Chloroacetic acid	µg/L	150	2	1	ND	0	100%
Bromoacetic acid	µg/L	No Guideline	2	1	ND	No Guideline	No Guideline
Dichloroacetic acid	µg/L	100	2	1	ND	0	100%
Trichloroacetic acid	µg/L	100	2	1	ND	0	100%
Bromochloroacetic acid	µg/L	No Guideline	2	1	ND	No Guideline	No Guideline
Bromodichloroacetic acid	µg/L	No Guideline	2	1	ND	No Guideline	No Guideline
Dibromoacetic acid	µg/L	No Guideline	2	1	ND	No Guideline	No Guideline
Dibromochloroacetic acid	µg/L	No Guideline	5	1	ND	No Guideline	No Guideline
Tribromoacetic acid	µg/L	No Guideline	5	1	ND	No Guideline	No Guideline
Nitrosamines							
N-Nitrosodimethylamine	ng/L	100	5	1	96	0	100%
N-Nitrosomethylethylamine	ng/L	100	5	1	ND	0	100%
N-Nitrosodiethylamine	ng/L	100	5	1	16	0	100%
N-Nitrosodipropylamine	ng/L	100	5	1	ND	0	100%
N-Nitrosopyrrolidine	ng/L	100	20	1	ND	0	100%
N-Nitrosopiperidine	ng/L	100	5	1	ND	0	100%
N-Nitrosodibutylamine	ng/L	100	5	1	13	0	100%
Miscellaneous Organics							
Chloral Hydrate	µg/L	100	2	1	ND	0	100%
Low Level Polycyclic Aromatic Hydrocarbons							
Naphthalene	µg/L	No Guideline	0.01	1	ND	No Guideline	No Guideline
2-Methylnaphthalene	µg/L	No Guideline	0.01	1	ND	No Guideline	No Guideline
Acenaphthylene	µg/L	No Guideline	0.01	1	ND	No Guideline	No Guideline
Acenaphthene	µg/L	No Guideline	0.01	1	ND	No Guideline	No Guideline
Fluorene	µg/L	No Guideline	0.01	1	ND	No Guideline	No Guideline
Phenanthrene	µg/L	No Guideline	0.01	1	ND	No Guideline	No Guideline
Anthracene	µg/L	No Guideline	0.01	1	ND	No Guideline	No Guideline
Fluoranthene	µg/L	No Guideline	0.01	1	ND	No Guideline	No Guideline
Pyrene	µg/L	No Guideline	0.01	1	ND	No Guideline	No Guideline
Benz(a)anthracene	µg/L	No Guideline	0.01	1	ND	No Guideline	No Guideline
Chrysene	µg/L	No Guideline	0.01	1	ND	No Guideline	No Guideline
Benzo(b)fluoranthene	µg/L	No Guideline	0.01	1	ND	No Guideline	No Guideline
Benzo(k)fluoranthene	µg/L	No Guideline	0.01	1	ND	No Guideline	No Guideline
Benzo(a)pyrene	µg/L	0.01	0.01	1	ND	0	100%
Indeno(1.2.3-c.d)pyrene	µg/L	No Guideline	0.02	1	ND	No Guideline	No Guideline
Dibenz(a.h)anthracene	µg/L	No Guideline	0.02	1	ND	No Guideline	No Guideline
Benzo(ghi)perylene	µg/L	No Guideline	0.02	1	ND	No Guideline	No Guideline

CHEMICAL HEALTH - 1 JULY 2024 TO 30 JUNE 2025							
CHARACTERISTIC	**UNIT**	**ADWG Health Guideline**	**Lab Limit of Reporting (LOR)**	**Number of Samples**	**Maximum Value**	**Number of Non-compliance with ADWG Health Guideline**	**Compliance %**
Distribution Network							
Metals							
Antimony	mg/L	0.003	0.001	1	ND	0	100%
Cadmium	mg/L	0.002	0.0001	1	ND	0	100%
Chromium (VI)	mg/L	0.05	0.002	1	ND	0	100%
Copper	mg/L	2	0.001	1	0.007	0	100%
Lead	mg/L	0.01	0.001	1	ND	0	100%
Nickel	mg/L	0.02	0.001	1	ND	0	100%
Zinc	mg/L	3	0.005	1	ND	0	100%
Miscellaneous Inorganics							
Hydrogen Sulfide	mg/L	No Guideline	0.05	1	ND	No Guideline	No Guideline
Cyanide - Total	mg/L	0.08	0.005	1	ND	0	100%
TOTAL				**43**		**0**	**100%**

Note 1:

mg/L	milligrams per litre
µg/L	micrograms per litre
µS/cm	microSiemens per centimetre
mS/cm	milliSiemens per centimetre
ng/L	nanograms per litre
ND	Not Detected
No Guideline	No ADWG guideline. Compliance is not required or shown for these analytes.

PHYSICAL AND CHEMICAL AESTHETIC - 1 JULY 2024 TO 30 JUNE 2025											
CHARACTERISTIC	UNIT	ADWG Aesthetic Guideline	Lab Limit of Reporting (LOR)	Number of Samples		Total No. of Samples (Raw + Distribution)	Maximum Value		Number of Non Compliance with ADWG Aesthetic Guideline		Compliance % Distribution Water
				Raw Water	Distribution Water		Raw Water	Distribution Water	Raw Water	Distribution Water	
Alkalinity (Bicarbonate)	mg $CaCO_3$/L	No Guideline	*5*	31	35	66	200	170	No Guideline	No Guideline	No Guideline
Alkalinity (Carbonate)	mg $CaCO_3$/L	No Guideline	*5*	31	35	66	ND	ND	No Guideline	No Guideline	No Guideline
Alkalinity (Hydroxide)	mg $CaCO_3$/L	No Guideline	*5*	31	35	66	ND	ND	No Guideline	No Guideline	No Guideline
Alkalinity (Total)	mg $CaCO_3$/L	No Guideline	*5*	31	35	66	200	170	No Guideline	No Guideline	No Guideline
Aluminium (Soluble)	mg/L	0.2	*0.05*	31	35	66	ND	ND	0	0	100%
Aluminium (Total)	mg/L	0.2	*0.05*	31	35	66	ND	ND	0	0	100%
Ammonia-N	mg/L	0.5	*0.02*	NR	35	35	NR	0.13	NR	0	100%
Calcium	mg/L	200	*0.5*	31	35	66	30	29	0	0	100%
Calcium (Filtered)	mg/L	200	*0.5*	NR	35	35	NR	25	NR	0	100%
Chloride	mg/L	250	*5*	31	35	66	190	99	0	0	100%
Colour True	PCU	15	*5*	107	105	212	38	26	6	1 Note 5	99%
Electrical Conductivity	µS/cm	No Guideline	*10*	107	105	212	910	700	No Guideline	No Guideline	No Guideline
Filterable Reactive Phosphorus	mg/L	No Guideline	*0.01*	31	35	66	0.21	0.12	No Guideline	No Guideline	No Guideline
Hardness	mg $CaCO_3$/L	200	*5*	31	35	66	130	130	0	0	100%
Iron (Soluble)	mg/L	0.3	*0.01*	107	105	212	8	0.04	68	0	100%
Iron (Total)	mg/L	0.3	*0.01*	107	105	212	9	0.43	74	2 Note 6	98%
Magnesium (Filtered)	mg/L	No Guideline	*0.5*	NR	35	35	NR	17	NR	No Guideline	No Guideline
Magnesium (Total)	mg/L	No Guideline	*0.5*	NR	35	66	18	19	No Guideline	No Guideline	No Guideline
pH	pH	6.5-8.5		95	445	540	8.7	9.2	2	19 Note 7	96%
Reactive Silica	mg/L	80	*0.1*	31	35	66	18	19	0	0	100%
Sodium	mg/L	180	*0.5*	31	35	66	140	76	0	0	100%
Sulfate	mg/L	250	*1*	31	35	66	110	18	0	0	100%
Total Dissolved Solids	mg/L	600	*5*	107	105	212	630	540	1	0	100%
Turbidity	NTU	5		95	454	549	1.07	0.94	0	0	100%
Zinc	mg/L	3	*0.005*	NR	35	35	NR	0.06	NR	0	100%
TOTAL				***1,159***	***2,054***	***3,213***	-		-	***22***	***98.9%***

Note 1:

PCU	Platinum Cobalt Unit	µS/cm	microSiemens per centimetre
NTU	Nephelometric Turbidity Units	ND	Not Detected
mg/L	milligrams per litre	No Guideline	No ADWG guideline. Compliance is not required or shown for these analytes.
mg $CaCO_3$/L	milligrams per litre as calcium carbonate	NR	Not required to be sampled

Note 2: Raw water is blended and treated prior to supply to consumers. Raw water is not provided to consumers and raw water data presented is for operational purposes.

Note 3: pH and Turbidity are Busselton Water in-house tests. All others are accredited test results.

Note 4: Busselton Water's water supply is sourced from bores constructed in the Leederville and Yarragadee aquifers. The raw groundwater has turbidity, colour and total iron concentrations. Treatment process using aeration, oxidation and filtration readily remove turbidity, colour and total iron before distribution into the reticulation network.

Note 5: One Colour True sample in the distribution network in the reporting period exceeded the ADWG aesthetic guideline of 15 PCU. The result (26 PCU) was from a sample taken at Lynwood Street on 12 February 2025. No adverse customer or operational impacts resulted. All subsequent samples from this location, and throughout the distribution network, have been below the ADWG aesthetic guideline. This exceedance was reported to the Department of Health in Busselton Water's Water Quality Report for the January to March 2025 reporting period.

Note 6: Two Iron (Total) samples in the distribution network in the reporting period exceeded the ADWG aesthetic guideline of 0.3 mg/L. One result (0.43 mg/L) was from a sample taken at Neville Hyder Drive on 29 October 2024. It is believed that water tanker activity at the time in the vicinity of the sample point may have impacted iron and turbidity results. The second sample (0.37 mg/L) was taken at Thomas Street on 27 May 2025. No adverse customer or operational impacts resulted from either exceedance. These exceedances were reported to the Department of Health in Busselton Water's Water Quality Report for the October to December 2024 and the April to June 2025 reporting periods respectively.

Note 7: Nineteen pH samples in the distribution network in the reporting period were outside the ADWG upper aesthetic guideline of 8.5. Sixteen of these exceedances occurred in July 2024, when Busselton Water's pH probe was found to be "drifting" in the second half of sample runs. The unit was replaced and results subsequently returned to expected levels. In June 2025, three pH samples exceeded the ADWG upper aesthetic guideline due to pH probe functionality issues. On both occasions, there were no adverse customer or operational impacts. These exceedances were reported to the Department of Health in Busselton Water's Water Quality Reports for the July to September 2024,and the April to June 2025 reporting periods respectively.

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