DRINKING WATER QUALITY REPORT

2013 –2014

Unitywater

Serving you today,
investing in tomorrow.

Contents

Who we are

Unitywater is the business that provides water supply and sewerage services to Moreton Bay, Noosa and Sunshine Coast residential and business customers.

We began operations on 1 July 2010 and were established by the Queensland Government, under the South-East Queensland Water (Distribution and Retail) Act 2009, as part of the Queensland Government water reform program. We distribute and retail water supplied from the South East Queensland Water Grid, which was created to secure and efficiently manage South East Queensland's water supplies.

Unitywater is a local business, focused on serving the needs of our communities.

Twenty four hours a day, seven days a week, our priority is providing our customers with a high quality, safe and reliable water supply and sewerage service that is economically and environmentally sustainable.


60

Message from the CEO

Valued Customers,

2013-14 was a busy year for us. We continued to focus on improving our customer service while keeping costs as low as possible, and we delivered some key projects that align with this goal. I'm pleased to be able to report that our water quality performance continues to meet the required standards and has improved again on the previous year.

The Public Health Act 2005 and *Public Health Regulation 2005* require that 98% of all drinking water samples contain no *E. coli* bacteria, an indicator of possible water contamination. In 2013-14, 99.94% of all samples tested contained no *E. coli*. Furthermore, from more than 86,000 individual microbiological, chemical and physical tests, only five results were not within the recommended standards. Our staff investigated each of these five results thoroughly and they were quickly resolved. Be assured that even though these individual results required reporting to the Queensland Water Supply Regulator, all of the health-based performance requirements were met as you will see later in this report.

In some cases, works that we undertake to improve our service standards may result in a change in your water's taste. In all cases we endeavour to minimise these noticeable impacts, however your health is our highest priority.

This report not only provides a thorough breakdown of water quality performance against the *Australian Drinking Water Guidelines 2011,* but it also contains some information about the work we have been doing, and continue to do, in making sure that the water we deliver to your home is of the highest quality. I hope you find this 2013-14 Drinking Water Quality Report informative; if you have any questions please give our friendly staff a call on 1300 086 489.

George Theo
Chief Executive Officer
Unitywater

Quick Facts

In 2013-14 we distributed approximately 53 gigalitres (53 billion litres) of clean, safe drinking water to our customers. This is enough to provide 2 litres of drinking water, per day, to every human on earth for 1 week!

- Population in our service area **745,293**
- Customers (water connections) **288,981**
- Reservoirs **123**
- Water pump stations **82**
- Total length of water pipelines **5,683km**
- Water supply regions **14**
- Secondary disinfection facilities **27**
- Water quality sampling points **175**
- Water samples analysed **5,569**
- Individual water quality tests **86,000+**

Water Supply

The south east Queensland water grid connects the major water assets from Noosa in the north to Coolangatta in the south, via a network of large pipelines. This allows Seqwater to move water around, and reduces the likelihood that we will run out of water in an area. A brief summary of the water supply arrangements for each area has been provided below. Please refer to the tables on pages 22 and 23 if you are unsure which area you are located in.

Water Supply continued

Bribie Island

The Banksia Beach Water Treatment Plant extracts groundwater from a number of bores on the island, and is the usual source of supply to Bribie Island customers. From late April 2014, the Banksia Beach plant was shut down and water was transported across from the mainland (Caboolture region).

Caboolture

There are two typical sources of water for the Caboolture region: Lake Baroon, via the Landers Shute WTP, and Lake Samsonvale, via the North Pine WTP. Treated water travels through the Northern Pipeline Interconnector, and into reservoirs at Elimbah, Morayfield and Narangba. From here, water is distributed throughout the Caboolture water supply scheme.

Caloundra

The main source of water for Caloundra is the Landers Shute WTP, with supplementary supply available from the Ewen Maddock WTP if required. Water from the two sources is mixed in the Sugarbag Road reservoir complex prior to distribution to customers. The Ewen Maddock WTP did not operate in the 2013-14 financial year.

Dayboro

The Dayboro region is not connected to the South East Queensland water grid. Water is sourced from the North Pine River (via bores), treated at the Dayboro WTP, and distributed to the township. Water can be imported via water tankers if necessary.

Kenilworth

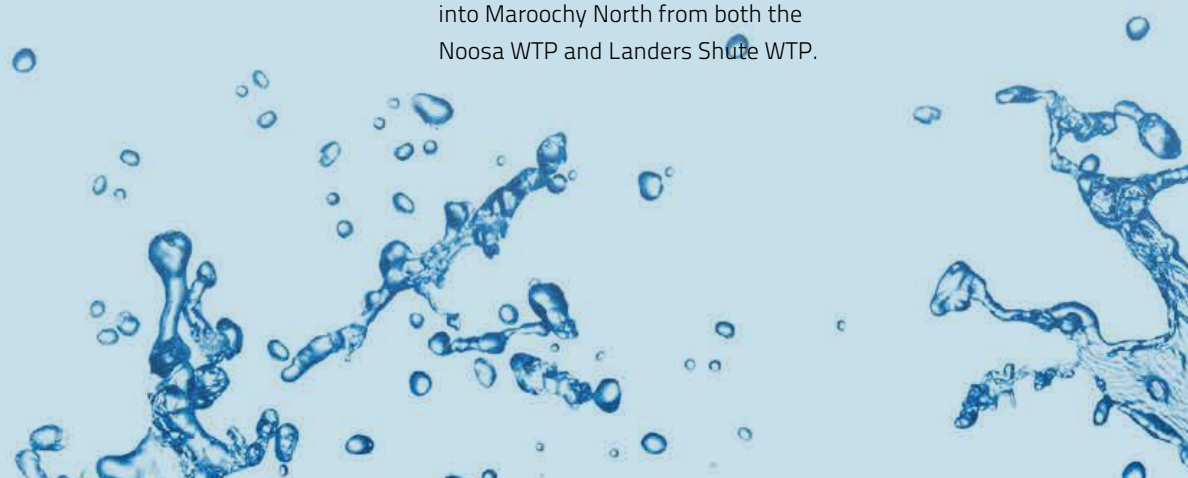
The single source of water for this scheme is the Kenilworth WTP. Water can be imported via water tankers if necessary.

Maleny

Maleny is supplied by Landers Shute WTP, following closure of the Maleny WTP in 2010.

Maroochy North

The primary water sources to this scheme are the Wappa Dam, Poona Dam, and the intake weir downstream of the Cooloolabin Dam. 'Raw' water from these storages is treated at the Image Flat WTP and supplied to customers. A connection with the Northern Pipeline Interconnector was commissioned in November 2013, which allows supply from other areas of the South East Queensland grid. During 2013-14, water was at times supplied into Maroochy North from both the Noosa WTP and Landers Shute WTP.



Maroochy South

The usual source of water for Maroochy South is Lake Baroon, via the Landers Shute WTP. Emergency water supply is available from the Image Flat WTP.

Noosa

The Noosa region receives water from both the Noosa WTP and the Landers Shute WTP (via the Northern Pipeline Interconnector). Water is blended within the reticulation system and distributed to customers.

Pine Rivers North

Water to the Pine Rivers North region is currently sourced from Lake Kurwongbah via the Petrie WTP.

Pine Rivers South

The Pine River South region typically receives water from the North Pine River (via the North Pine WTP) and Lake Baroon (via the Landers Shute WTP and Northern Pipeline Interconnector). When North Pine WTP is offline for maintenance, water can be supplied from Brisbane via the Aspley reservoir system.

Railway Towns

The usual source of water for the Railway Towns region is Lake Baroon, via the Landers Shute WTP. Water travels first through Mooloolah, before being supplied south to Landsborough, Beerwah, Glasshouse and Beerburrum.

Redcliffe

Redcliffe receives water from a number of sources. The primary supply is usually a blend of water produced at the Landers Shute and North Pine WTPs, with supplementary supply from Queensland Urban Utilities' Bracken Ridge reservoir. There are storage reservoirs at Margate and Rothwell, from where water is distributed to customers.

Woodford

The Woodford region is supplied from Lake Baroon, via the Landers Shute WTP. Treated water travels south down the Northern Pipeline Interconnector, and into the Woodford system via the Elimbah reservoir.

Unitywater

DRINKING WATER
QUALITY MANAGEMENT PLAN

Prepared with guidance from the Australian Drinking Water Guidelines 2011.

First version approved by the Queensland Water Supply Regulator in March 2012; current version approved in June 2014.

Independent third party audited against the Water Supply (Safety & Reliability) Act 2008 (Qld) and the Drinking Water Quality Management Plan Guideline (Department of Energy and Water Supply).

Unitywater

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investing in tomorrow.

Regulation of drinking water quality

The Department of Energy and Water Supply is the state government agency responsible for drinking water regulation, to ensure that public health is protected. This is achieved through the requirements made of water service providers under the *Water Supply (Safety & Reliability) Act 2008.*

A summary of how Unitywater has met the key drinking water quality requirements has been provided below.

Act Requirement	Unitywater's Action
Prepare, submit and gain approval for a Drinking Water Quality Management Plan (DWQMP)	We began preparation of our first DWQMP in 2010, and submitted this document in 2011. Approval was granted on 26 March 2012.
Report water quality non-compliances to the regulator as soon as the service provider has become aware of the non-compliance	All five water quality non-compliances were reported to the regulator as soon as we were made aware of the non-compliant result. See elsewhere in this report for details on individual non-compliances and the investigations and actions that were undertaken in response to the results.
Prepare annual reports	This water quality report satisfies part of the requirement for annual reports. The DWQMP annual report will be submitted to the regulator by the due date (December 2014). The 2012-13 annual report was submitted to the regulator.
Undertake reviews and audits of the Drinking Water Quality Management Plan	No audits of the DWQMP were conducted in 2013-14. The first review was undertaken in January 2014 as required. Following this review, some minor amendments were made to Unitywater's DWQMP and these changes were subsequently approved by the regulator. The first DWQMP audit is required to be conducted by 30 March 2016.

Water quality management

At Unitywater, we take pride in our water quality. From our bulk supply interface points with Seqwater, right through to the furthest reaches of our supply area, we conduct our activities with the dual purpose of maintaining the supply and quality of our drinking water product.

Staff Training in Water Hygiene

Unitywater has implemented a 'Water Hygiene' program with our field based staff, which focuses on clean working habits when repairing or maintaining our networks. The program provides training and awareness to staff, around the key messages of cleanliness, clean pipes, chlorination, clean clothing and clearance under pipes being laid or repaired (to prevent foreign material getting in).

SCADA Project

Our network operators use a Supervisory Control and Data Acquisition System (SCADA) to remotely monitor important operational information such as flow rates, reservoir levels, pressures, and water quality. Because we originated from a number of council water businesses, we had several different SCADA systems which covered different regions of our supply area. Our SCADA Project team worked hard in 2013-14 to transfer the majority of our drinking water sites to a single SCADA platform, which allows our network operators to respond more efficiently to information and react rapidly to changing water quality trends. The SCADA Project will be completed within the 2014-15 financial year.

Installation of Reservoir Mixers

Lowering of reservoir levels isn't the only answer to managing water quality in reservoirs. In some cases, it is preferable to install a mixing device which continually mixes water. The Queensland summer heat can cause temperature 'stratification' (layering) within reservoirs, which can result in loss of chlorine (which acts as a disinfectant) at the water surface. Unitywater installed 11 mixers in 2013-14, in addition to the 7 in 2012-13, as a proactive water quality management measure.

Water Quality Improvement Projects

In 2013-14, Unitywater implemented the Albany Creek Water Quality Improvement Project. This project involved mains cleaning, installation of a reservoir mixer, and conversion of disinfectant chemical from monochloramine to free chlorine. Even though there had been no water quality non-compliances in this area, we identified that improvements could be made to protect against potential non-compliances in the future.

Building an 'Intelligent' Water Network

During the 2013-14 year, we installed 17 in-pipe water quality probes at key points within our network. These probes monitor chlorine, pressure, conductivity and temperature in real time, and send data back to a central, web-based platform at five minute intervals. The probes also have the ability to send out real time alerts when certain water quality criteria are not met.

Investigative Water Quality Monitoring

When something catches the attention of our water quality scientists, we are now able to respond in a number of innovative ways. One tool we tested for the first time in 2013-14 is a water quality monitoring van which is able to plug into fire hydrants and rapidly obtain information about disinfectant levels and the cleanliness of our pipe network. This approach can provide valuable information without the need for collection of samples and laboratory analysis, which can take days to provide a result.

Regional Map

Drinking water quality monitoring

Unitywater uses a risk based approach to determine which parameters to monitor in drinking water, following the guidance provided in the Australian Drinking Water Guidelines. Our monitoring program represents best value for money and provides the information we need to be confident of the water quality within the network.

For example, chlorine and chloramine are disinfectant chemicals added during the treatment process. Accordingly, these parameters are monitored frequently at all locations within the distribution system to ensure that concentrations remain within acceptable levels. Conversely, bromate is a potential disinfection by-product which is unlikely to be found in Unitywater's water supplies. This parameter is monitored much less frequently, and at fewer sites.

This approach is in line with our strategic purpose:

"To provide sustainable value for money water and sewerage services to our customers".

Unitywater Scientists

Who tests our water?

Water samples are collected from 175 dedicated sample taps throughout our water supply networks on a weekly basis.

All of our samples are collected by our highly trained samplers, and analysed within our laboratories by our experienced chemists and microbiologists. Our samplers and laboratories are independently assessed, certified and accredited by the National Association of Testing Authorities (NATA). NATA accreditation is the benchmark for performance in the field of testing, inspection and calibration within Australia. **You may have seen our samplers out and about!**

How results influence action

Our team of water quality scientists review and trend water quality data on a regular basis, so that any emerging issues can be picked up and acted upon before water quality standards are breached. The Water Quality team communicate with our Network Operations branch, who organise the work that is to be carried out.

Examples of work that may be carried out in response to water quality results include:

- Water mains cleaning
- Chlorine addition to water storage tanks
- Opening or closing of valves to isolate or re-direct water flow

In all cases, we aim to do the work with little to no impact on our customers.

The following section provides a summary of Unitywater's water quality performance between 1 July 2013 and 30 June 2014.

Your suburb and it's water supply region

Suburb	Supply District/Scheme	Suburb	Supply Region
ALBANY CREEK	Pine Rivers South	CURRIMUNDI	Caloundra
ALEXANDRA HEADLAND	Maroochy South	D'AGUILAR	Woodford
ARANA HILLS	Pine Rivers South	DAKABIN	Pine Rivers North
AROONA	Caloundra	DAYBORO	Dayboro
BANKSIA BEACH	Bribie Island	DECEPTION BAY	Caboolture
BATTERY HILL	Caloundra	DICKY BEACH	Caloundra
BEACHMERE	Caboolture	DIDDILLIBAH	Maroochy South
BEERBURRUM	Railway Towns	DONNYBROOK	Caboolture
BEERWAH	Railway Towns	EATONS HILL	Pine Rivers South
BELLARA	Bribie Island	ELIMBAH	Caboolture
BELLMERE	Caboolture	EUMUNDI	Maroochy North
BIRTINYA	Caloundra	EVERTON HILLS	Pine Rivers South
BLI BLI	Maroochy North	EVERTON PARK	Pine Rivers South
BONGAREE	Bribie Island	FERNY HILLS	Pine Rivers South
BRAY PARK	Pine Rivers South	FOREST GLEN	Maroochy South
BRENDALE	Pine Rivers South	GLASSHOUSE MOUNTAINS	Railway Towns
BRIBIE ISLAND	Bribie Island	GOLDEN BEACH	Caloundra
BUDDINA	Caloundra	GRIFFIN	Pine Rivers North
BUDERIM	Maroochy South	HARBOUR HILL	Maroochy South
BUNYA	Pine Rivers South	HIGHWORTH	Maroochy North
BURPENGARY	Caboolture	JOYNER	Pine Rivers South
BURPENGARY EAST	Caboolture	KALLANGUR	Pine Rivers North
CABOOLTURE	Caboolture	KEIL MOUNTAIN	Maroochy South
CABOOLTURE SOUTH	Caboolture	KENILWORTH	Kenilworth
CALOUNDRA	Caloundra	KINGS BEACH	Caloundra
CALOUNDRA WEST	Caloundra	KIPPA-RING	Redcliffe
CASHMERE	Pine Rivers South	KULANGOOR	Maroochy North
CLEAR MOUNTAIN	Pine Rivers South	KULUIN	Maroochy South
CLONTARF	Redcliffe	KUNDA PARK	Maroochy South
COES CREEK	Maroochy North	LANDSBOROUGH	Railway Towns
COOLUM BEACH	Maroochy North	LAWNTON	Pine Rivers North
COORAN	Noosa	LITTLE MOUNTAIN	Caloundra
COOROY	Noosa	MALENY	Maleny
COTTON TREE	Maroochy South	MARCOOLA	Maroochy North

Suburb	Supply District/Scheme	Suburb	Supply Region
MARCUS BEACH	Noosa	POINT CARTWRIGHT	Caloundra
MARGATE	Redcliffe	POMONA	Noosa
MAROOCHYDORE	Maroochy South	REDCLIFFE	Redcliffe
MERIDIAN PLAINS	Caloundra	ROSEMOUNT	Maroochy North
MINYAMA	Caloundra	ROTHWELL	Redcliffe
MOFFAT BEACH	Caloundra	SAMFORD	Pine Rivers South
MOOLOOLABA	Maroochy South	SANDSTONE POINT	Caboolture
MOOLOOLAH VALLEY	Railway Towns	SCARBOROUGH	Redcliffe
MORAYFIELD	Caboolture	SIPPY DOWNS	Maroochy South
MOUNT COOLUM	Maroochy North	SOLANDER	Bribie Island
MOUNTAIN CREEK	Maroochy South	STRATHPINE	Pine Rivers South
MUDJIMBA	Maroochy North	SUNRISE BEACH	Noosa
MURRUMBA DOWNS	Pine Rivers North	SUNSHINE BEACH	Noosa
NAMBOUR	Maroochy North	TANAWHA	Maroochy South
NARANGBA	Caboolture	TEWANTIN	Noosa
NEWPORT	Redcliffe	TOORBUL	Caboolture
NINGI	Caboolture	TOWEN MOUNTAIN	Maroochy North
NOOSA HEADS	Noosa	TWIN WATERS	Maroochy North
NOOSAVILLE	Noosa	UPPER CABOOLTURE	Caboolture
NORTH ARM	Maroochy North	WAMURAN	Caboolture
NORTH LAKES	Pine Rivers North	WARANA	Caloundra
PACIFIC PARADISE	Maroochy North	WARNER	Pine Rivers South
PALMWOODS	Maroochy South	WOODFORD	Woodford
PARKLANDS	Maroochy North	WOODY POINT	Redcliffe
PARREARRA	Caloundra	WOOMBYE	Maroochy South
PELICAN WATERS	Caloundra	WOORIM	Bribie Island
PEREGIAN BEACH	Noosa	WURTULLA	Caloundra
PEREGIAN SPRINGS	Maroochy North	YANDINA	Maroochy North
PETRIE	Pine Rivers North	YAROOMBA	Maroochy North

Drinking water quality performance

E. coli

Schedule 3A, Queensland's *Public Health Regulation 2005* requires that nil *E. coli* is found in 98% of the samples taken for a 12 month period, from a minimum number of samples based on the connected population living in the area.

Unitywater met the requirements in all water supply regions. Please refer to the table below for a summary of performance:

Supply Region	Number of Samples Required	Actual Number of Samples	Number of Positive Results	Required Performance	Actual Performance	Met Requirement
Bribie Island	88	162	0	98%	100%	✓
Caboolture	360	770	1[a]	98%	99.9%	✓
Caloundra	268	513	0	98%	100%	✓
Dayboro	52	155	0	98%	100%	✓
Kenilworth	12	90	1[b]	98%	98.9%	✓
Maleny	52	149	0	98%	100%	✓
Maroochy North	220	420	0	98%	100%	✓
Maroochy South	324	503	0	98%	100%	✓
Noosa	208	548	0	98%	100%	✓
Pine Rivers North	324	398	0	98%	100%	✓
Pine Rivers South	324	656	0	98%	100%	✓
Railway Towns	88	612	1[c]	98%	99.8%	✓
Redcliffe	232	251	0	98%	100%	✓
Woodford	64	129	0	98%	100%	✓
All Schemes	**2616**	**5356**	**3**	**98%**	**99.94%**	✓

Samples which did not comply with the *E. coli* standards = 3

a - An *E. coli* result of 4mpn/100mL was reported in a water sample from Narangba, however due to the total chlorine result of 0.87mg/L and the low turbidity this is suspected to be contamination at the point of sampling. No contamination source was able to be found, and the repeat sample contained no *E. coli.*

b – An *E. coli* result of 6mpn/100mL was reported in a water sample from Kenilworth, although again, due to the total chlorine result of 0.8mg/L and the low turbidity this is suspected to be contamination at the point of sampling. No contamination source was able to be found, and the repeat sample contained no *E. coli.*

c - An *E. coli* result of 1mpn/100mL was reported in a water sample from Beerburrum, and this sample did not contain measurable chlorine. The sample point was located at a tanker filling station which had not been used in several days. After the supply main was flushed, the location was re-sampled and returned a negative result for *E. coli.* All other samples in the Beerburrum zone were negative throughout this period, and this indicates that the incident was a localised issue.

Chemical parameters

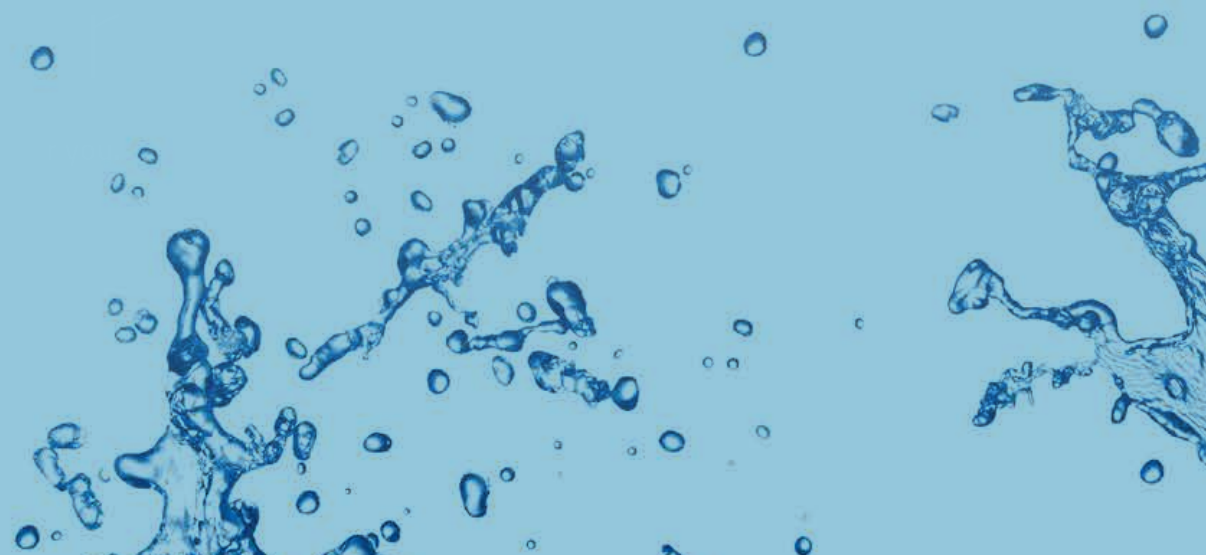
When assessing performance against the Australian Drinking Water Guidelines health based limits, a calculation known as the 95th percentile is used. Based on the individual results over the course of the reporting period, this calculation provides an estimate of the value at which 95% of results fall below. For more information on the water quality statistical methods and performance assessment, see "Water Quality Statistics Explained" on page 59.

Health guidelines are based on safety over a lifetime of consumption. For this reason it is considered acceptable for an individual result to exceed the guideline on occasion, provided the long term performance is compliant.

Unitywater complied with the Australian Drinking Water Guidelines for all parameters measured, in all water supply regions. This section summarises the chemical performance individually by water supply region:

Bribie Island

Parameter	Units	Number of Samples	Min Result	Max Result	Average Result	95th Percentile	ADWG Health Guideline	Met ADWG
Antimony	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.003**	✓
Arsenic	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.01**	✓
Barium	mg/L	1	0.02	0.02	0.02	**0.02**	**2**	✓
Beryllium	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.06**	✓
Boron	mg/L	1	<0.1	<0.1	<0.1	**<0.1**	**4**	✓
Bromate	mg/L	4	<0.005	0.008	<0.005	**0.008**	**0.02**	✓
Cadmium	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.002**	✓
Chlorine (Free)	mg/L	164	<0.1	2.3	1.11	**1.7**	**5**	✓
Chlorine (Total)	mg/L	164	<0.1	2.5	1.23	**1.8**	**5**	✓
Chromium	mg/L	1	<0.01	<0.01	<0.01	**<0.01**	**0.05**	✓
Copper	mg/L	22	<0.01	<0.01	<0.01	**<0.01**	**2**	✓
Cyanogen Chloride	mg/L	4	<0.004	<0.004	<0.004	**<0.004**	**0.08**	✓
Fluoride	mg/L	68	0.49	1.2	0.92	**1.01**	**1.5**	✓
Manganese	mg/L	68	<0.01	<0.01	<0.01	**<0.01**	**0.5**	✓
Mercury	mg/L	1	<0.0005	<0.0005	<0.0005	**<0.0005**	**0.001**	✓
Monochloramine NH2Cl	mg/L	42	<0.02	0.04	<0.02	**<0.02**	**3**	✓
Nitrate (NO_3^-)	mg/L	95	0.3	2.9	1.0	**2.79**	**50**	✓
Nitrite (NO_2^-)	mg/L	95	<0.02	<0.02	<0.02	**<0.02**	**3**	✓
Selenium	mg/L	1	<0.01	<0.01	<0.01	**<0.01**	**0.01**	✓
THMs	ug/L	12	54	182	118	**164**	**250**	✓

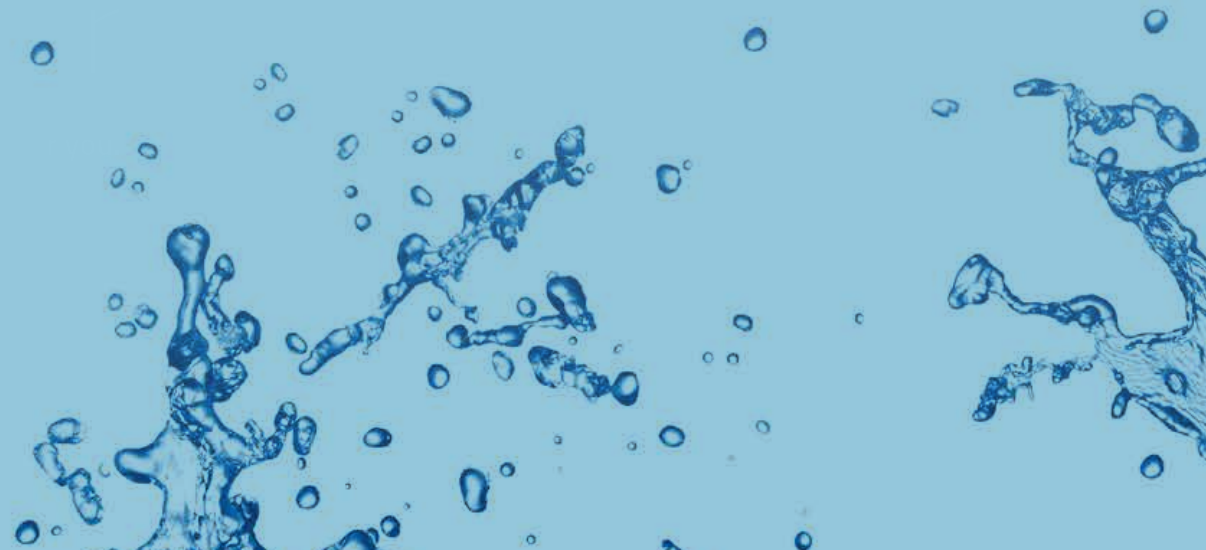


Caboolture

Parameter	Units	Number of Samples	Min Result	Max Result	Average Result	95th Percentile	ADWG Health Guideline	Met ADWG
Antimony	mg/L	3	<0.001	<0.001	<0.001	**<0.001**	**0.003**	✓
Arsenic	mg/L	3	<0.001	<0.001	<0.001	**<0.001**	**0.01**	✓
Barium	mg/L	3	<0.02	<0.02	<0.02	**<0.02**	**2**	✓
Beryllium	mg/L	3	<0.001	<0.001	<0.001	**<0.001**	**0.06**	✓
Boron	mg/L	3	<0.1	<0.1	<0.1	**<0.1**	**4**	✓
Bromate	mg/L	12	<0.005	0.013	0.006	**0.011**	**0.02**	✓
Cadmium	mg/L	3	<0.001	<0.001	<0.001	**<0.001**	**0.002**	✓
Chlorine (Free)	mg/L	777	<0.1	2.8	0.19	**1.00**	**5**	✓
Chlorine (Total)	mg/L	775	<0.1	3.8	0.97	**3.10**	**5**	✓
Chromium	mg/L	3	<0.01	<0.01	<0.01	**<0.01**	**0.05**	✓
Copper	mg/L	102	<0.01	<0.01	<0.01	**<0.01**	**2**	✓
Cyanogen Chloride	mg/L	12	<0.004	<0.004	<0.004	**<0.004**	**0.08**	✓
Fluoride	mg/L	291	0.51	0.95	0.84	**0.90**	**1.5**	✓
Manganese	mg/L	292	<0.01	0.01	<0.01	**<0.01**	**0.5**	✓
Mercury	mg/L	3	<0.0005	<0.0005	<0.0005	**<0.0005**	**0.001**	✓
Monochloramine NH2Cl	mg/L	621	<0.02	2.65	0.55	**2.10**	**3**	✓
Nitrate (NO_3^-)	mg/L	702	0.16	5.85	1.91	**3.45**	**50**	✓
Nitrite (NO_2^-)	mg/L	702	<0.02	1.31	0.25	**0.89**	**3**	✓
Selenium	mg/L	3	<0.01	<0.01	<0.01	**<0.01**	**0.01**	✓
Sulphate	mg/L	1	15	15	15	**15**	**500**	✓
THMs	ug/L	24	<5	85	44	**82**	**250**	✓

Caloundra

Parameter	Units	Number of Samples	Min Result	Max Result	Average Result	95th Percentile	ADWG Health Guideline	Met ADWG
Antimony	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.003**	✓
Arsenic	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.01**	✓
Barium	mg/L	1	<0.02	<0.02	<0.02	**<0.02**	**2**	✓
Beryllium	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.06**	✓
Boron	mg/L	1	<0.1	<0.1	<0.1	**<0.1**	**4**	✓
Bromate	mg/L	5	<0.005	0.006	<0.005	**0.006**	**0.02**	✓
Cadmium	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.002**	✓
Chlorine (Free)	mg/L	516	<0.1	1.6	1.02	**1.40**	**5**	✓
Chlorine (Total)	mg/L	516	<0.1	1.8	1.17	**1.60**	**5**	✓
Chromium	mg/L	1	<0.01	<0.01	<0.01	**<0.01**	**0.05**	✓
Copper	mg/L	86	<0.01	0.04	<0.01	**<0.01**	**2**	✓
Cyanogen Chloride	mg/L	5	<0.004	<0.004	<0.004	**<0.004**	**0.08**	✓
Fluoride	mg/L	221	0.71	0.95	0.84	**0.90**	**1.5**	✓
Manganese	mg/L	221	<0.01	0.01	<0.01	**<0.01**	**0.5**	✓
Mercury	mg/L	1	<0.0005	<0.0005	<0.0005	**<0.0005**	**0.001**	✓
Nitrate (NO_3^-)	mg/L	161	<0.02	1.42	0.46	**1.18**	**50**	✓
Nitrite (NO_2^-)	mg/L	143	<0.02	<0.02	<0.02	**<0.02**	**3**	✓
Selenium	mg/L	1	<0.01	<0.01	<0.01	**<0.01**	**0.01**	✓
Sulphate	mg/L	1	17	17	17	**17**	**500**	✓
THMs	ug/L	15	21	47	33	**43**	**250**	✓

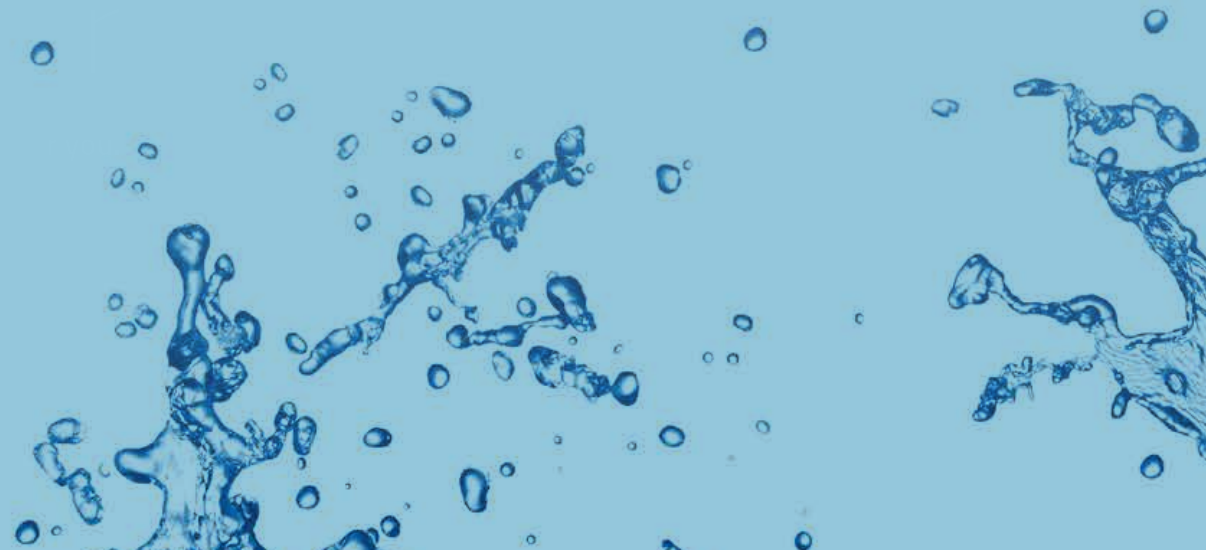


Dayboro

Parameter	Units	Number of Samples	Min Result	Max Result	Average Result	95th Percentile	ADWG Health Guideline	Met ADWG
Antimony	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.003**	✓
Arsenic	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.01**	✓
Barium	mg/L	1	0.02	0.02	0.02	**0.02**	**2**	✓
Beryllium	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.06**	✓
Boron	mg/L	1	<0.1	<0.1	<0.1	**<0.1**	**4**	✓
Bromate	mg/L	4	<0.005	0.005	<0.005	**<0.005**	**0.02**	✓
Cadmium	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.002**	✓
Chlorine (Free)	mg/L	157	0.3	1.6	0.82	**1.20**	**5**	✓
Chlorine (Total)	mg/L	157	0.4	1.6	0.88	**1.30**	**5**	✓
Chromium	mg/L	1	<0.01	<0.01	<0.01	**<0.01**	**0.05**	✓
Copper	mg/L	15	<0.01	0.02	<0.01	**0.01**	**2**	✓
Cyanogen Chloride	mg/L	4	<0.004	<0.004	<0.004	**<0.004**	**0.08**	✓
Fluoride	mg/L	39	0.76	0.91	0.87	**0.90**	**1.5**	✓
Manganese	mg/L	36	<0.01	<0.01	<0.01	**<0.01**	**0.5**	✓
Mercury	mg/L	1	<0.0005	<0.0005	<0.0005	**<0.0005**	**0.001**	✓
Nitrate (NO_3^-)	mg/L	75	0.08	2.13	0.43	**0.58**	**50**	✓
Nitrite (NO_2^-)	mg/L	75	<0.02	<0.02	<0.02	**<0.02**	**3**	✓
Selenium	mg/L	1	<0.01	<0.01	<0.01	**<0.01**	**0.01**	✓
Sulphate	mg/L	1	7	7	7	**7**	**500**	✓
THMs	ug/L	12	12	50	34	**48**	**250**	✓

Kenilworth

Parameter	Units	Number of Samples	Min Result	Max Result	Average Result	95th Percentile	ADWG Health Guideline	Met ADWG
Antimony	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.003**	✓
Arsenic	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.01**	✓
Barium	mg/L	1	0.03	0.03	0.03	**0.03**	**2**	✓
Beryllium	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.06**	✓
Boron	mg/L	1	<0.1	<0.1	<0.1	**<0.1**	**4**	✓
Bromate	mg/L	4	<0.005	0.005	<0.005	**<0.005**	**0.02**	✓
Cadmium	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.002**	✓
Chlorine (Free)	mg/L	93	<0.1	1.4	0.66	**0.80**	**5**	✓
Chlorine (Total)	mg/L	93	0.1	1.6	0.76	**0.90**	**5**	✓
Chromium	mg/L	1	<0.01	<0.01	<0.01	**<0.01**	**0.05**	✓
Copper	mg/L	8	<0.01	<0.01	<0.01	**<0.01**	**2**	✓
Cyanogen Chloride	mg/L	4	<0.004	<0.004	<0.004	**<0.004**	**0.08**	✓
Fluoride	mg/L	33	0.15	0.27	0.21	**0.25**	**1.5**	✓
Manganese	mg/L	33	<0.01	<0.01	<0.01	**<0.01**	**0.5**	✓
Mercury	mg/L	1	<0.0005	<0.0005	<0.0005	**<0.0005**	**0.001**	✓
Monochloramine NH2Cl	mg/L	1	<0.02	<0.02	<0.02	**<0.02**	**3**	✓
Nitrate (NO_3^-)	mg/L	27	0.15	3.94	0.73	**3.87**	**50**	✓
Nitrite (NO_2^-)	mg/L	23	<0.02	0.07	<0.02	**<0.02**	**3**	✓
Selenium	mg/L	1	<0.01	<0.01	<0.01	**<0.01**	**0.01**	✓
Sulphate	mg/L	1	9	9	9	**9**	**500**	✓
THMs	ug/L	12	14	51	24	**38**	**250**	✓

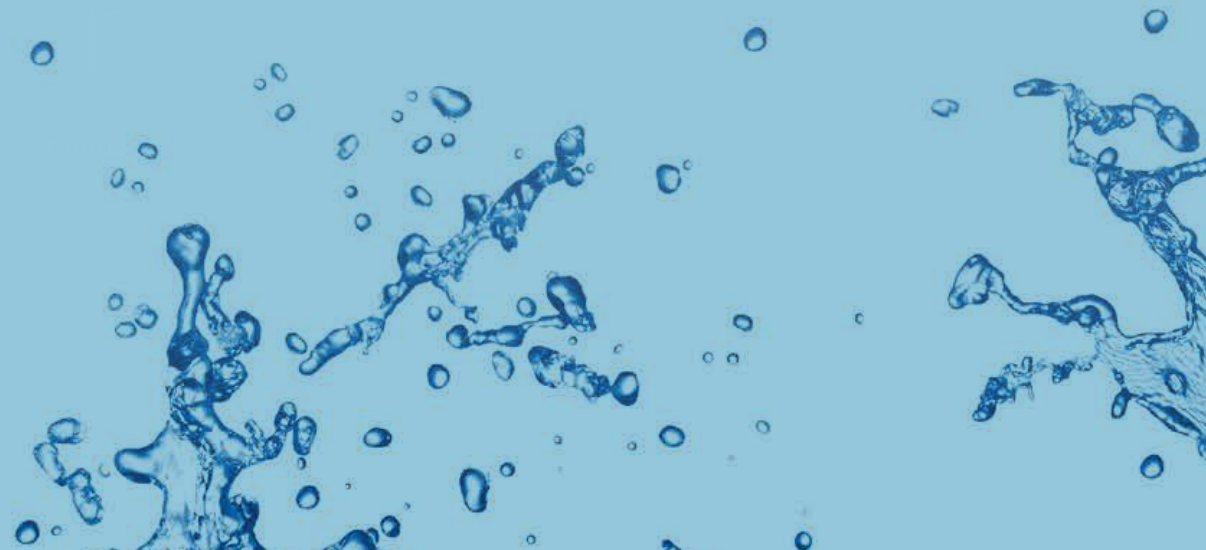


Maleny

Parameter	Units	Number of Samples	Min Result	Max Result	Average Result	95th Percentile	ADWG Health Guideline	Met ADWG
Antimony	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.003**	✓
Arsenic	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.01**	✓
Barium	mg/L	1	<0.02	<0.02	<0.02	**<0.02**	**2**	✓
Beryllium	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.06**	✓
Boron	mg/L	1	<0.1	<0.1	<0.1	**<0.1**	**4**	✓
Bromate	mg/L	4	<0.005	0.008	<0.005	**0.008**	**0.02**	✓
Cadmium	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.002**	✓
Chlorine (Free)	mg/L	151	<0.1	1.7	0.94	**1.45**	**5**	✓
Chlorine (Total)	mg/L	151	<0.1	1.8	1.08	**1.60**	**5**	✓
Chromium	mg/L	1	<0.01	<0.01	<0.01	**<0.01**	**0.05**	✓
Copper	mg/L	24	<0.01	<0.01	<0.01	**<0.01**	**2**	✓
Cyanogen Chloride	mg/L	4	<0.004	<0.004	<0.004	**<0.004**	**0.08**	✓
Fluoride	mg/L	59	0.73	0.94	0.84	**0.90**	**1.5**	✓
Manganese	mg/L	59	<0.01	0.06	<0.01	**<0.01**	**0.5**	✓
Mercury	mg/L	1	<0.0005	<0.0005	<0.0005	**<0.0005**	**0.001**	✓
Nitrate (NO_3^-)	mg/L	44	0.13	1.32	0.47	**1.25**	**50**	✓
Nitrite (NO_2^-)	mg/L	39	<0.02	<0.02	<0.02	**<0.02**	**3**	✓
Selenium	mg/L	1	<0.01	<0.01	<0.01	**<0.01**	**0.01**	✓
Sulphate	mg/L	1	15	15	15	**15**	**500**	✓
THMs	ug/L	11	14	44	32	**44**	**250**	✓

Maroochy North

Parameter	Units	Number of Samples	Min Result	Max Result	Average Result	95th Percentile	ADWG Health Guideline	Met ADWG
Antimony	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.003**	✓
Arsenic	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.01**	✓
Barium	mg/L	1	<0.02	<0.02	<0.02	**<0.02**	**2**	✓
Beryllium	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.06**	✓
Boron	mg/L	1	<0.1	<0.1	<0.1	**<0.1**	**4**	✓
Bromate	mg/L	5	<0.005	0.005	<0.005	**<0.005**	**0.02**	✓
Cadmium	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.002**	✓
Chlorine (Free)	mg/L	426	<0.1	2.5	0.78	**1.40**	**5**	✓
Chlorine (Total)	mg/L	426	0.1	2.8	0.92	**1.60**	**5**	✓
Chromium	mg/L	1	<0.01	<0.01	<0.01	**<0.01**	**0.05**	✓
Copper	mg/L	76	<0.01	0.01	<0.01	**<0.01**	**2**	✓
Cyanogen Chloride	mg/L	5	<0.004	<0.004	<0.004	**<0.004**	**0.08**	✓
Fluoride	mg/L	181	0.59	1.04	0.84	**0.93**	**1.5**	✓
Manganese	mg/L	181	<0.01	0.13	<0.01	**0.02**	**0.5**	✓
Mercury	mg/L	1	<0.0005	<0.0005	<0.0005	**<0.0005**	**0.001**	✓
Nitrate (NO_3^-)	mg/L	137	0.15	1.28	0.38	**0.81**	**50**	✓
Nitrite (NO_2^-)	mg/L	122	<0.02	<0.02	<0.02	**<0.02**	**3**	✓
Selenium	mg/L	1	<0.01	<0.01	<0.01	**<0.01**	**0.01**	✓
Sulphate	mg/L	1	25	25	25	**25**	**500**	✓
THMs	ug/L	12	53	132	82	**126**	**250**	✓

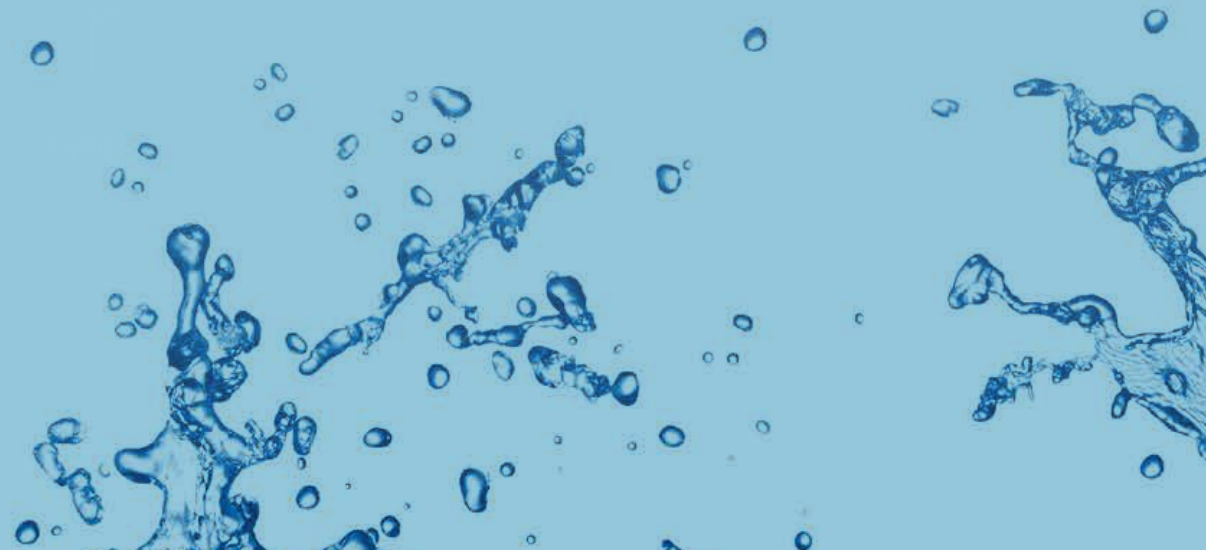


Maroochy South

Parameter	Units	Number of Samples	Min Result	Max Result	Average Result	95th Percentile	ADWG Health Guideline	Met ADWG
Antimony	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.003**	✓
Arsenic	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.01**	✓
Barium	mg/L	1	<0.02	<0.02	<0.02	**<0.02**	**2**	✓
Beryllium	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.06**	✓
Boron	mg/L	1	<0.1	<0.1	<0.1	**<0.1**	**4**	✓
Bromate	mg/L	4	<0.005	0.005	<0.005	**0.005**	**0.02**	✓
Cadmium	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.002**	✓
Chlorine (Free)	mg/L	516	<0.1	2.9	0.92	**1.4**	**5**	✓
Chlorine (Total)	mg/L	516	0.1	3.2	1.07	**1.60**	**5**	✓
Chromium	mg/L	1	<0.01	<0.01	<0.01	**<0.01**	**0.05**	✓
Copper	mg/L	85	<0.01	0.02	<0.01	**0.01**	**2**	✓
Cyanogen Chloride	mg/L	4	<0.004	<0.004	<0.004	**<0.004**	**0.08**	✓
Fluoride	mg/L	203	0.7	0.94	0.84	**0.90**	**1.5**	✓
Manganese	mg/L	203	<0.01	<0.01	<0.01	**<0.01**	**0.5**	✓
Mercury	mg/L	1	<0.0005	<0.0005	<0.0005	**<0.0005**	**0.001**	✓
Nitrate (NO_3^-)	mg/L	153	0.12	1.38	0.47	**1.22**	**50**	✓
Nitrite (NO_2^-)	mg/L	136	<0.02	0.03	<0.02	**<0.02**	**3**	✓
Selenium	mg/L	1	<0.01	<0.01	<0.01	**<0.01**	**0.01**	✓
Sulphate	mg/L	1	18	18	18	**18**	**500**	✓
THMs	ug/L	12	<5	19	10	**18**	**250**	✓

Noosa

Parameter	Units	Number of Samples	Min Result	Max Result	Average Result	95th Percentile	ADWG Health Guideline	Met ADWG
Antimony	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.003**	✓
Arsenic	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.01**	✓
Barium	mg/L	1	<0.02	<0.02	<0.02	**<0.02**	**2**	✓
Beryllium	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.06**	✓
Boron	mg/L	1	<0.1	<0.1	<0.1	**<0.1**	**4**	✓
Bromate	mg/L	6	<0.005	0.006	<0.005	**0.006**	**0.02**	✓
Cadmium	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.002**	✓
Chlorine (Free)	mg/L	556	<0.1	1.9	0.47	**0.80**	**5**	✓
Chlorine (Total)	mg/L	556	<0.01	2.2	0.55	**0.90**	**5**	✓
Chromium	mg/L	1	<0.01	<0.01	<0.01	**<0.01**	**0.05**	✓
Copper	mg/L	100	<0.01	0.02	<0.01	**0.01**	**2**	✓
Cyanogen Chloride	mg/L	6	<0.004	<0.004	<0.004	**<0.004**	**0.08**	✓
Fluoride	mg/L	233	0.61	1	0.84	**0.95**	**1.5**	✓
Manganese	mg/L	233	<0.01	0.03	<0.01	**<0.01**	**0.5**	✓
Mercury	mg/L	1	<0.0005	<0.0005	<0.0005	**<0.0005**	**0.001**	✓
Nitrate (NO_3^-)	mg/L	176	0.19	1.2	0.50	**1.04**	**50**	✓
Nitrite (NO_2^-)	mg/L	157	<0.02	<0.02	<0.02	**<0.02**	**3**	✓
Selenium	mg/L	1	<0.01	<0.01	<0.01	**<0.01**	**0.01**	✓
Sulphate	mg/L	1	29	29	29	**29**	**500**	✓
THMs	ug/L	15	46	139	84	**135**	**250**	✓



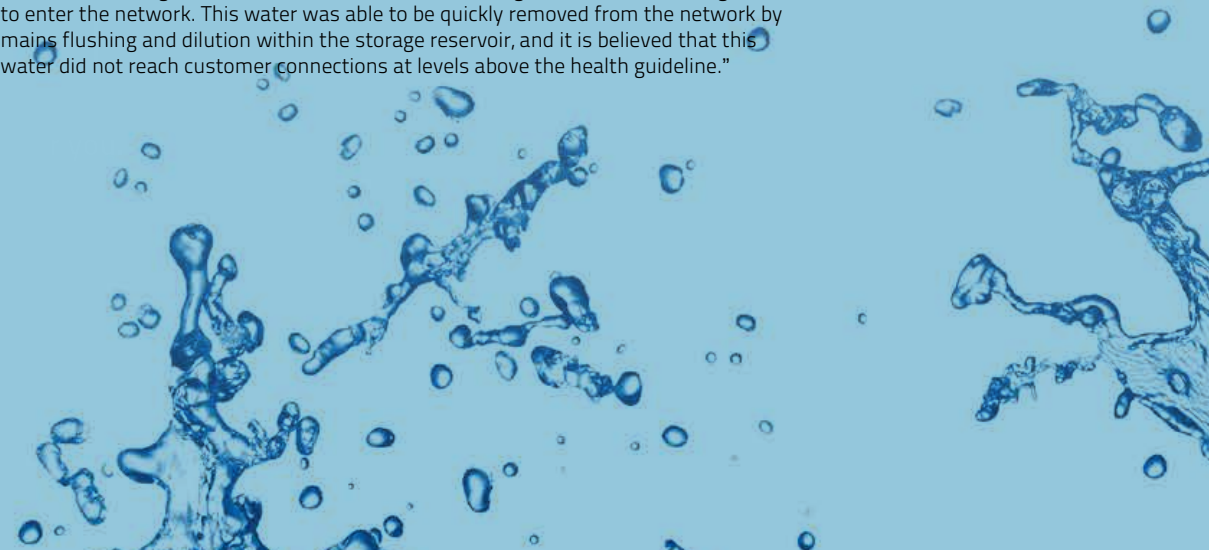
Pine Rivers North

Parameter	Units	Number of Samples	Min Result	Max Result	Average Result	95th Percentile	ADWG Health Guideline	Met ADWG
Antimony	mg/L	2	<0.001	<0.001	<0.001	**<0.001**	**0.003**	✓
Arsenic	mg/L	2	<0.001	<0.001	<0.001	**<0.001**	**0.01**	✓
Barium	mg/L	2	<0.02	<0.02	<0.02	**<0.02**	**2**	✓
Beryllium	mg/L	2	<0.001	<0.001	<0.001	**<0.001**	**0.06**	✓
Boron	mg/L	2	<0.1	<0.1	<0.1	**<0.1**	**4**	✓
Bromate	mg/L	11	<0.005	0.005	<0.005	**0.005**	**0.02**	✓
Cadmium	mg/L	2	<0.001	<0.001	<0.001	**<0.001**	**0.002**	✓
Chlorine (Free)	mg/L	404	<0.1	2.4	1.31	**2.10**	**5**	✓
Chlorine (Total)	mg/L	404	0.1	2.9	1.65	**2.49**	**5**	✓
Chromium	mg/L	2	<0.01	<0.01	<0.01	**<0.01**	**0.05**	✓
Copper	mg/L	69	<0.01	0.07	<0.01	**0.05**	**2**	✓
Cyanogen Chloride	mg/L	11	<0.004	<0.004	<0.004	**<0.004**	**0.08**	✓
Fluoride	mg/L	141	0.72	1	0.89	**0.94**	**1.5**	✓
Manganese	mg/L	141	<0.01	0.02	<0.01	**<0.01**	**0.5**	✓
Mercury	mg/L	2	<0.0005	<0.0005	<0.0005	**<0.0005**	**0.001**	✓
Monochloramine NH2Cl	mg/L	1	<0.02	<0.02	<0.02	**<0.02**	**3**	✓
Nitrate (NO_3^-)	mg/L	219	0.08	2.57	0.53	**0.90**	**50**	✓
Nitrite (NO_2^-)	mg/L	219	<0.02	0.59	<0.02	**0.03**	**3**	✓
Selenium	mg/L	2	<0.01	<0.01	<0.01	**<0.01**	**0.01**	✓
Sulphate	mg/L	2	41	42	42	**42**	**500**	✓
THMs	ug/L	24	48	163	89	**130**	**250**	✓

Pine Rivers South

Parameter	Units	Number of Samples	Min Result	Max Result	Average Result	95th Percentile	ADWG Health Guideline	Met ADWG
Antimony	mg/L	2	<0.001	<0.001	<0.001	**<0.001**	**0.003**	✓
Arsenic	mg/L	2	<0.001	0.001	<0.001	**<0.001**	**0.01**	✓
Barium	mg/L	2	<0.02	<0.02	<0.02	**<0.02**	**2**	✓
Beryllium	mg/L	2	<0.001	<0.001	<0.001	**<0.001**	**0.06**	✓
Boron	mg/L	2	<0.1	<0.1	<0.1	**<0.1**	**4**	✓
Bromate	mg/L	10	<0.005	0.006	<0.005	**0.006**	**0.02**	✓
Cadmium	mg/L	2	<0.001	<0.001	<0.001	**<0.001**	**0.002**	✓
Chlorine (Free)	mg/L	798	<0.1	5.3*	0.46	**1.80**	**5**	✓
Chlorine (Total)	mg/L	798	<0.1	5.7*	1.16	**2.52**	**5**	✓
Chromium	mg/L	2	<0.01	<0.01	<0.01	**<0.01**	**0.05**	✓
Copper	mg/L	107	<0.01	0.06	<0.01	**0.01**	**2**	✓
Cyanogen Chloride	mg/L	10	<0.004	<0.004	<0.004	**<0.004**	**0.08**	✓
Fluoride	mg/L	224	0.68	1	0.88	**0.95**	**1.5**	✓
Manganese	mg/L	227	<0.01	0.02	<0.01	**0.01**	**0.5**	✓
Mercury	mg/L	2	<0.0005	<0.0005	<0.0005	**<0.0005**	**0.001**	✓
Monochloramine NH2Cl	mg/L	528	<0.02	2.02	0.45	**1.51**	**3**	✓
Nitrate (NO_3^-)	mg/L	649	0.11	5.16	1.93	**3.61**	**50**	✓
Nitrite (NO_2^-)	mg/L	650	<0.02	2.27	0.17	**0.69**	**3**	✓
Selenium	mg/L	2	<0.01	<0.01	<0.01	**<0.01**	**0.01**	✓
Sulphate	mg/L	2	26	29	28	**29**	**500**	✓
THMs	ug/L	39	41	161	95	**130**	**250**	✓

*A chlorine dosing malfunction led to a low volume of high chlorine water being allowed to enter the network. This water was able to be quickly removed from the network by mains flushing and dilution within the storage reservoir, and it is believed that this water did not reach customer connections at levels above the health guideline."

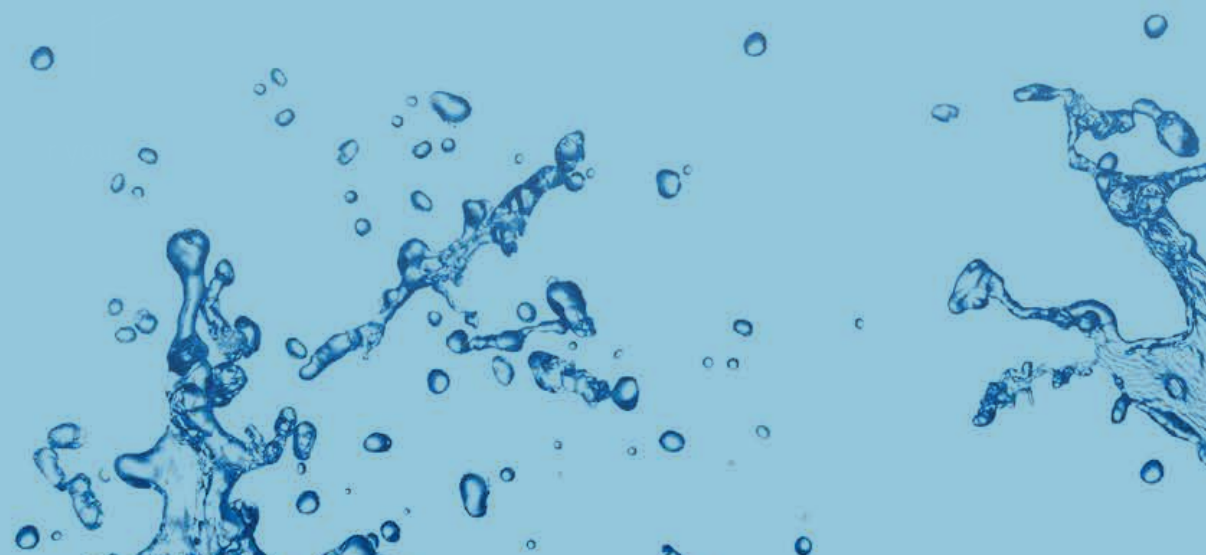


Railway Towns

Parameter	Units	Number of Samples	Min Result	Max Result	Average Result	95th Percentile	ADWG Health Guideline	Met ADWG
Antimony	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.003**	✓
Arsenic	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.01**	✓
Barium	mg/L	1	<0.02	<0.02	<0.02	**<0.02**	**2**	✓
Beryllium	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.06**	✓
Boron	mg/L	1	<0.1	<0.1	<0.1	**<0.1**	**4**	✓
Bromate	mg/L	4	<0.005	0.008	<0.005	**0.008**	**0.02**	✓
Cadmium	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.002**	✓
Chlorine (Free)	mg/L	616	<0.1	1.9	0.90	**1.50**	**5**	✓
Chlorine (Total)	mg/L	616	<0.1	2	1.03	**1.70**	**5**	✓
Chromium	mg/L	1	<0.01	<0.01	<0.01	**<0.01**	**0.05**	✓
Copper	mg/L	86	<0.01	<0.01	<0.01	**<0.01**	**2**	✓
Cyanogen Chloride	mg/L	4	<0.004	<0.004	<0.004	**<0.004**	**0.08**	✓
Fluoride	mg/L	229	0.44	0.95	0.84	**0.91**	**1.5**	✓
Manganese	mg/L	229	<0.01	<0.01	<0.01	**<0.01**	**0.5**	✓
Mercury	mg/L	1	<0.0005	<0.0005	<0.0005	**<0.0005**	**0.001**	✓
Nitrate (NO_3^-)	mg/L	168	0.12	1.38	0.46	**1.13**	**50**	✓
Nitrite (NO_2^-)	mg/L	148	<0.02	<0.02	<0.02	**<0.02**	**3**	✓
Selenium	mg/L	1	<0.01	<0.01	<0.01	**<0.01**	**0.01**	✓
Sulphate	mg/L	1	16	16	16	**16**	**500**	✓
THMs	ug/L	12	35	54	46	**53**	**250**	✓

Redcliffe

Parameter	Units	Number of Samples	Min Result	Max Result	Average Result	95th Percentile	ADWG Health Guideline	Met ADWG
Antimony	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.003**	✓
Arsenic	mg/L	1	0.001	0.001	0.001	**0.001**	**0.01**	✓
Barium	mg/L	1	<0.02	<0.02	<0.02	**<0.02**	**2**	✓
Beryllium	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.06**	✓
Boron	mg/L	1	<0.1	<0.1	<0.1	**<0.1**	**4**	✓
Bromate	mg/L	4	<0.005	0.005	<0.005	**<0.005**	**0.02**	✓
Cadmium	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.002**	✓
Chlorine (Free)	mg/L	262	<0.1	0.3	<0.1	**<0.1**	**5**	✓
Chlorine (Total)	mg/L	262	<0.1	1.8	0.31	**1.20**	**5**	✓
Chromium	mg/L	1	<0.01	<0.01	<0.01	**<0.01**	**0.05**	✓
Copper	mg/L	45	<0.01	<0.01	<0.01	**<0.01**	**2**	✓
Cyanogen Chloride	mg/L	4	<0.004	<0.004	<0.004	**<0.004**	**0.08**	✓
Fluoride	mg/L	120	0.71	1	0.87	**0.94**	**1.5**	✓
Manganese	mg/L	120	<0.01	0.06	<0.01	**0.01**	**0.5**	✓
Mercury	mg/L	1	<0.0005	<0.0005	<0.0005	**<0.0005**	**0.001**	✓
Monochloramine NH2Cl	mg/L	249	<0.02	0.56	0.06	**0.33**	**3**	✓
Nitrate (NO_3^-)	mg/L	250	0.91	4.29	2.56	**3.65**	**50**	✓
Nitrite (NO_2^-)	mg/L	249	<0.02	1.28	0.14	**0.41**	**3**	✓
Selenium	mg/L	1	<0.01	<0.01	<0.01	**<0.01**	**0.01**	✓
THMs	ug/L	12	33	97	49	**74**	**250**	✓



Woodford

Parameter	Units	Number of Samples	Min Result	Max Result	Average Result	95th Percentile	ADWG Health Guideline	Met ADWG
Antimony	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.003**	✓
Arsenic	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.01**	✓
Barium	mg/L	1	<0.02	<0.02	<0.02	**<0.02**	**2**	✓
Beryllium	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.06**	✓
Boron	mg/L	1	<0.1	<0.1	<0.1	**<0.1**	**4**	✓
Bromate	mg/L	4	<0.005	0.009	0.006	**0.009**	**0.02**	✓
Cadmium	mg/L	1	<0.001	<0.001	<0.001	**<0.001**	**0.002**	✓
Chlorine (Free)	mg/L	131	<0.1	1.4	0.34	**1.30**	**5**	✓
Chlorine (Total)	mg/L	131	<0.1	2.6	1.20	**2.40**	**5**	✓
Chromium	mg/L	1	<0.01	<0.01	<0.01	**<0.01**	**0.05**	✓
Copper	mg/L	14	<0.01	<0.01	<0.01	**<0.01**	**2**	✓
Cyanogen Chloride	mg/L	4	<0.004	<0.004	<0.004	**<0.004**	**0.08**	✓
Fluoride	mg/L	41	0.79	0.91	0.84	**0.89**	**1.5**	✓
Manganese	mg/L	40	<0.01	<0.01	<0.01	**<0.01**	**0.5**	✓
Mercury	mg/L	1	<0.0005	<0.0005	<0.0005	**<0.0005**	**0.001**	✓
Monochloramine NH2Cl	mg/L	127	<0.02	2.17	0.43	**1.62**	**3**	✓
Nitrate (NO_3^-)	mg/L	127	0.65	9.65	3.13	**6.25**	**50**	✓
Nitrite (NO_2^-)	mg/L	127	<0.02	2.66	0.33	**1.19**	**3**	✓
Selenium	mg/L	1	<0.01	<0.01	<0.01	**<0.01**	**0.01**	✓
THMs	mg/L	12	<5	42	16	**39**	**250**	✓

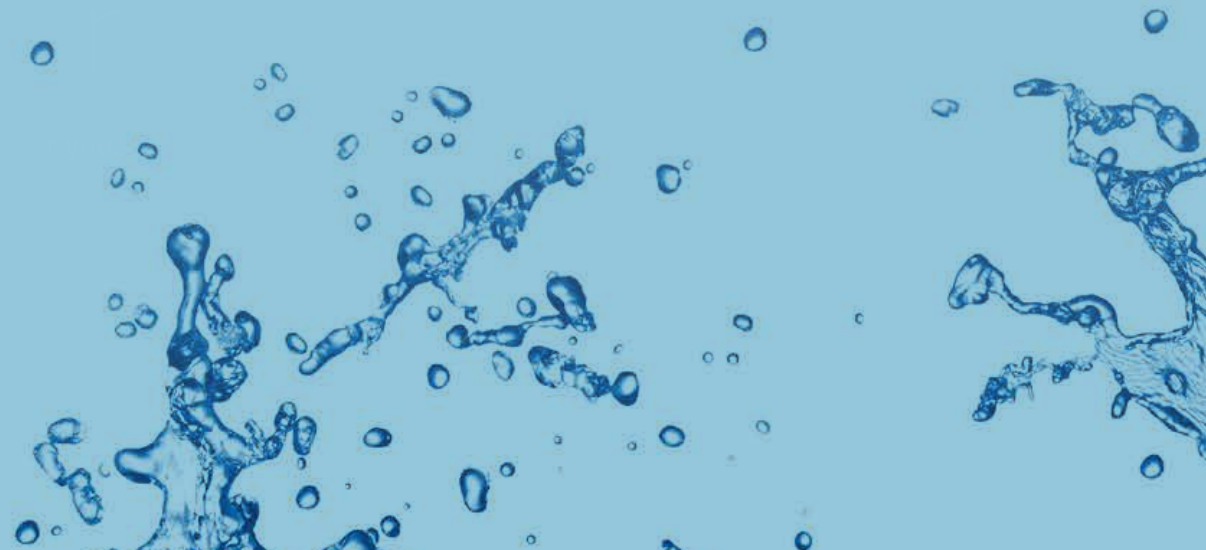
Aesthetic Water Quality

When assessing performance against the Australian Drinking Water Guidelines aesthetic limits, a calculation known as the mean is used. This is the average of all results obtained throughout the year. For more information on the water quality statistical methods and performance assessment, see "Water Quality Statistics Explained" on page 59.

This section summarises the aesthetic performance individually by water supply region

Bribie Island

Parameter	Units	Number of Samples	Min Result	Max Result	Average Result	ADWG Aesthetic Guideline	Met ADWG
Aluminium	mg/L	68	<0.02	0.04	<0.02	0.2	✓
Ammonia (free) NH3	mg/L	39	<0.02	<0.02	<0.02	0.5	✓
Colour (apparent)	PCU	68	<1	2.9	<1	15	✓
Colour (true)	PCU	68	<1	2.1	<1	15	✓
Conductivity	uS/cm	169	208	428	359	1000	✓
Copper	mg/L	22	<0.01	<0.01	<0.01	1	✓
Iron	mg/L	68	<0.01	0.05	<0.01	0.3	✓
Manganese	mg/L	68	<0.01	<0.01	<0.01	0.1	✓
pH	pH Units	162	7.2	8.7	7.6	6.5-9.2	✓
Silica	mg/L	1	12	12	12	80	✓
Sodium	mg/L	4	19	40	32	180	✓
Temperature	°C	162	18.8	30.2	24.1		
Turbidity	NTU	162	<0.05	0.26	0.06	5	✓
Zinc	mg/L	68	<0.01	<0.01	<0.01	3	✓

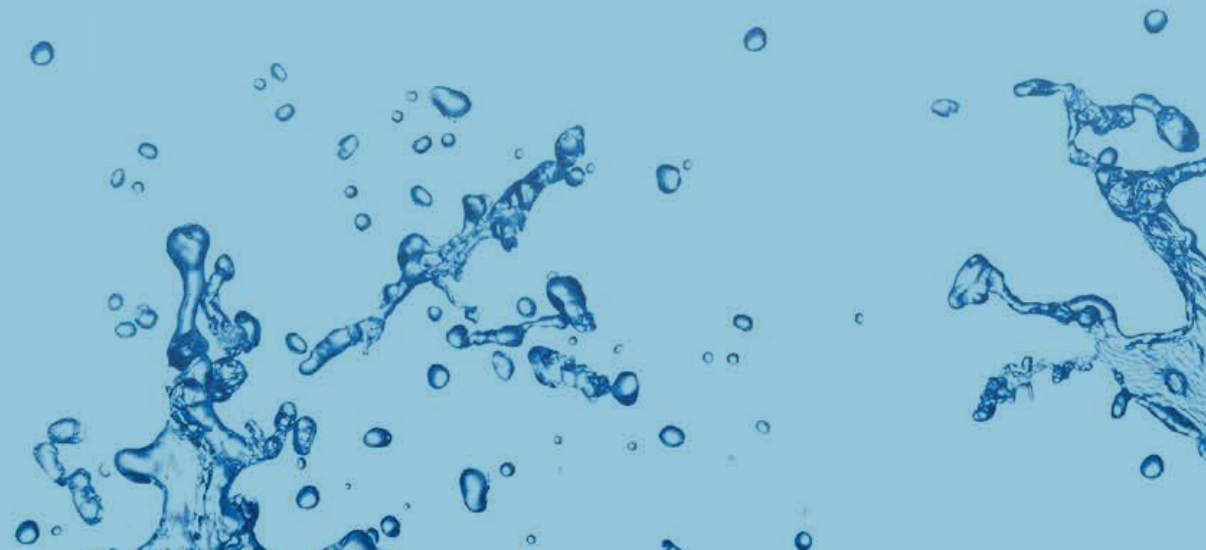


Caboolture

Parameter	Units	Number of Samples	Min Result	Max Result	Average Result	ADWG Aesthetic Guideline	Met ADWG
Aluminium	mg/L	292	<0.02	0.04	<0.02	0.2	✓
Ammonia (free) NH3	mg/L	608	<0.02	0.45	0.10	0.5	✓
Colour (apparent)	PCU	300	<1	3.2	<1	15	✓
Colour (true)	PCU	300	<1	1.3	<1	15	✓
Conductivity	uS/cm	802	159	333	205	1000	✓
Copper	mg/L	102	<0.01	<0.01	<0.01	1	✓
Iron	mg/L	292	<0.01	0.08	<0.01	0.3	✓
Manganese	mg/L	292	<0.01	0.01	<0.01	0.1	✓
pH	pH Units	770	6.9	8.9	7.7	6.5-9.2	✓
Silica	mg/L	3	11	12	12	80	✓
Sodium	mg/L	12	11	23	16	180	✓
Temperature	^{0}C	770	17.4	29.9	23.6		
Total Hardness	mg/L CaCO3	9	45	66	53	200	✓
Turbidity	NTU	770	<0.05	0.94	0.08	5	✓
Zinc	mg/L	292	<0.01	0.02	<0.01	3	✓

Caloundra

Parameter	Units	Number of Samples	Min Result	Max Result	Average Result	ADWG Aesthetic Guideline	Met ADWG
Aluminium	mg/L	221	<0.02	0.04	<0.02	0.2	✓
Ammonia (free) NH3	mg/L	71	<0.02	0.03	<0.02	0.5	✓
Colour (apparent)	PCU	221	<1	3.1	<1	15	✓
Colour (true)	PCU	221	<1	1.2	<1	15	✓
Conductivity	uS/cm	510	146	250	181	1000	✓
Copper	mg/L	86	<0.01	0.04	<0.01	1	✓
Iron	mg/L	194	<0.01	0.06	<0.01	0.3	✓
Manganese	mg/L	221	<0.01	0.01	<0.01	0.1	✓
pH	pH Units	510	7.1	8.5	7.5	6.5-9.2	✓
Silica	mg/L	1	11	11	11	80	✓
Sodium	mg/L	5	9	10	9	180	✓
Temperature	^{0}C	513	17.1	29.4	23.4		
Turbidity	NTU	510	<0.05	2.8	0.13	5	✓
Zinc	mg/L	221	<0.01	0.04	<0.01	3	✓

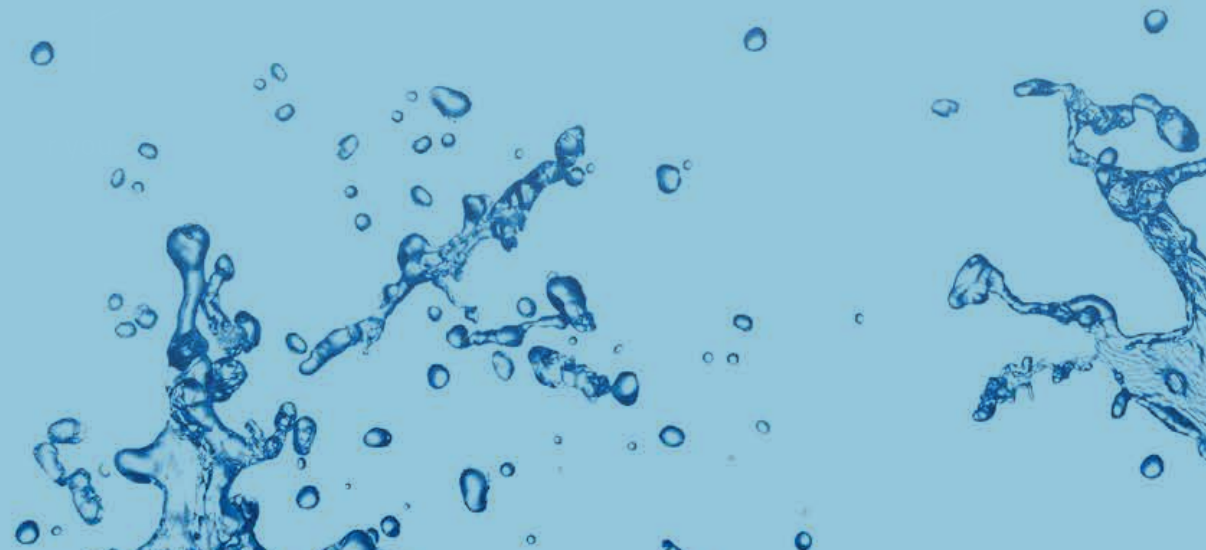


Dayboro

Parameter	Units	Number of Samples	Min Result	Max Result	Average Result	ADWG Aesthetic Guideline	Met ADWG
Aluminium	mg/L	36	<0.02	0.03	<0.02	0.2	✓
Colour (apparent)	PCU	40	<1	1.6	<1	15	✓
Colour (true)	PCU	40	<1	<1	<1	15	✓
Conductivity	uS/cm	161	216	368	316	1000	✓
Copper	mg/L	15	<0.01	0.02	<0.01	1	✓
Iron	mg/L	36	<0.01	0.03	<0.01	0.3	✓
Manganese	mg/L	36	<0.01	<0.01	<0.01	0.1	✓
pH	pH Units	155	7.3	8.2	7.6	6.5-9.2	✓
Silica	mg/L	1	19	19	19	80	✓
Sodium	mg/L	5	30	38	32	180	✓
Temperature	^{0}C	155	17.8	29.8	23.5		
Turbidity	NTU	155	<0.05	1.4	0.13	5	✓
Zinc	mg/L	36	<0.01	0.01	<0.01	3	✓

Kenilworth

Parameter	Units	Number of Samples	Min Result	Max Result	Average Result	ADWG Aesthetic Guideline	Met ADWG
Aluminium	mg/L	33	<0.02	<0.02	<0.02	0.2	✓
Ammonia (free) NH3	mg/L	10	<0.02	<0.02	<0.02	0.5	✓
Colour (apparent)	PCU	33	<1	1.6	<1	15	✓
Colour (true)	PCU	33	<1	1.1	<1	15	✓
Conductivity	uS/cm	90	259	671	505	1000	✓
Copper	mg/L	8	<0.01	<0.01	<0.01	1	✓
Iron	mg/L	27	<0.01	0.07	<0.01	0.3	✓
Manganese	mg/L	33	<0.01	<0.01	<0.01	0.1	✓
pH	pH Units	92	7.1	8.1	7.4	6.5-9.2	✓
Silica	mg/L	1	29	29	29	80	✓
Sodium	mg/L	4	58	82	69	180	✓
Temperature	^{0}C	92	19.5	31.5	25.3		
Total Hardness	mg/L CaCO3	9	82	141	108	200	✓
Turbidity	NTU	92	<0.05	0.37	0.08	5	✓
Zinc	mg/L	33	<0.01	<0.01	<0.01	3	✓

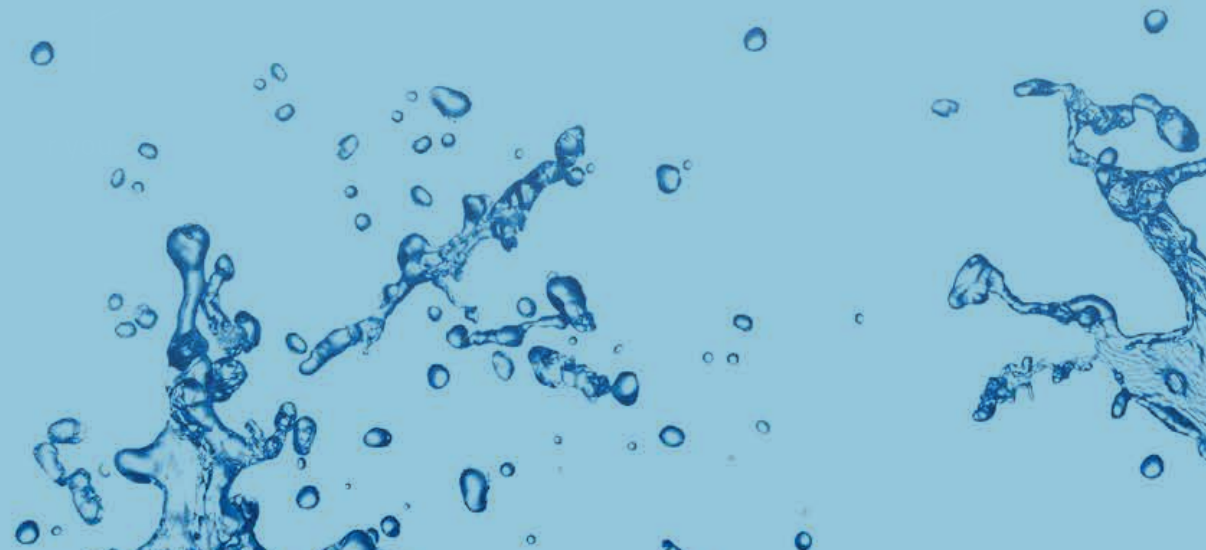


Maleny

Parameter	Units	Number of Samples	Min Result	Max Result	Average Result	ADWG Aesthetic Guideline	Met ADWG
Aluminium	mg/L	59	<0.02	0.14	0.02	0.2	✓
Ammonia (free) NH3	mg/L	19	<0.02	<0.02	<0.02	0.5	✓
Colour (apparent)	PCU	59	<1	25	1.23	15	✓
Colour (true)	PCU	59	<1	1.1	<1	15	✓
Conductivity	uS/cm	150	161	225	188	1000	✓
Copper	mg/L	24	<0.01	<0.01	<0.01	1	✓
Iron	mg/L	56	<0.01	0.26	0.01	0.3	✓
Manganese	mg/L	59	<0.01	0.058	<0.01	0.1	✓
pH	pH Units	150	7.3	9.1	8.0	6.5-9.2	✓
Silica	mg/L	1	11	11	11	80	✓
Sodium	mg/L	4	9	10	10	180	✓
Temperature	^{0}C	150	16.4	28.1	21.4		
Turbidity	NTU	150	<0.05	3.4	0.16	5	✓
Zinc	mg/L	59	<0.01	0.02	<0.01	3	✓

Maroochy North

Parameter	Units	Number of Samples	Min Result	Max Result	Average Result	ADWG Aesthetic Guideline	Met ADWG
Aluminium	mg/L	181	<0.02	0.12	<0.02	0.2	✓
Ammonia (free) NH3	mg/L	54	<0.02	0.04	<0.02	0.5	✓
Colour (apparent)	PCU	181	<1	35	2.03	15	✓
Colour (true)	PCU	181	<1	2.1	<1	15	✓
Conductivity	uS/cm	420	148	340	228	1000	✓
Copper	mg/L	76	<0.01	0.01	<0.01	1	✓
Iron	mg/L	163	<0.01	0.18	<0.01	0.3	✓
Manganese	mg/L	181	<0.01	0.13	<0.01	0.1	✓
pH	pH Units	420	7	9.1	7.6	6.5-9.2	✓
Silica	mg/L	1	7	7	7	80	✓
Sodium	mg/L	5	18	34	26	180	✓
Temperature	^{0}C	415	17.6	29.8	23.7		
Total Hardness	mg/L CaCO3	1	46	46	46	200	✓
Turbidity	NTU	420	<0.05	2.7	0.18	5	✓
Zinc	mg/L	181	<0.01	0.01	<0.01	3	✓

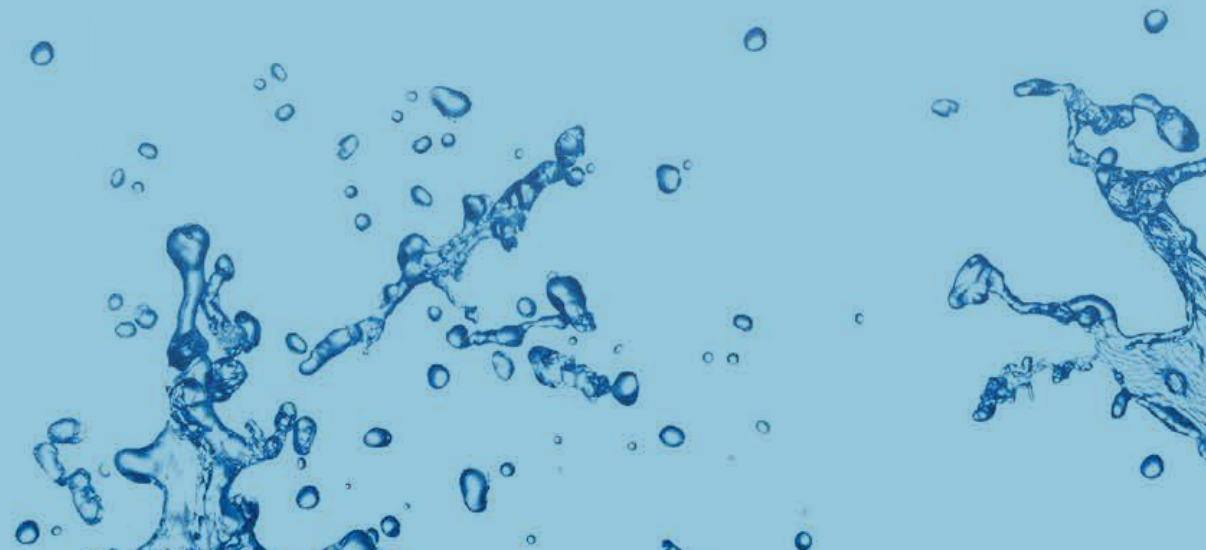


Maroochy South

Parameter	Units	Number of Samples	Min Result	Max Result	Average Result	ADWG Aesthetic Guideline	Met ADWG
Aluminium	mg/L	203	<0.02	0.04	<0.02	0.2	✓
Ammonia (free) NH3	mg/L	59	<0.02	<0.02	<0.02	0.5	✓
Colour (apparent)	PCU	203	<1	4.6	<1	15	✓
Colour (true)	PCU	203	<1	2.5	<1	15	✓
Conductivity	uS/cm	511	149	307	180	1000	✓
Copper	mg/L	85	<0.01	0.02	<0.01	1	✓
Iron	mg/L	179	<0.01	0.04	<0.01	0.3	✓
Manganese	mg/L	203	<0.01	<0.01	<0.01	0.1	✓
pH	pH Units	511	7.1	9.5	7.6	6.5-9.2	✓
Silica	mg/L	1	12	12	12	80	✓
Sodium	mg/L	4	9	10	10	180	✓
Temperature	^{0}C	511	13.6	30.4	23.5		
Turbidity	NTU	511	<0.05	4.5	0.14	5	✓
Zinc	mg/L	203	<0.01	0.02	<0.01	3	✓

Noosa

Parameter	Units	Number of Samples	Min Result	Max Result	Average Result	ADWG Aesthetic Guideline	Met ADWG
Aluminium	mg/L	233	<0.02	0.04	<0.02	0.2	✓
Ammonia (free) NH3	mg/L	68	<0.02	<0.02	<0.02	0.5	✓
Colour (apparent)	PCU	233	<1	13	<1	15	✓
Colour (true)	PCU	233	<1	2.7	<1	15	✓
Conductivity	uS/cm	548	164	496	248	1000	✓
Copper	mg/L	100	<0.01	0.02	<0.01	1	✓
Iron	mg/L	209	<0.01	0.2	0.01	0.3	✓
Manganese	mg/L	233	<0.01	0.03	<0.01	0.1	✓
pH	pH Units	548	7.1	8.9	7.6	6.5-9.2	✓
Silica	mg/L	1	12	12	12	80	✓
Sodium	mg/L	6	10	28	21	180	✓
Temperature	^{0}C	548	17.7	29	23.2		
Total Hardness	mg/L CaCO3	4	37	75	57	200	✓
Turbidity	NTU	548	<0.05	6.8	0.15	5	✓
Zinc	mg/L	233	<0.01	0.01	<0.01	3	✓

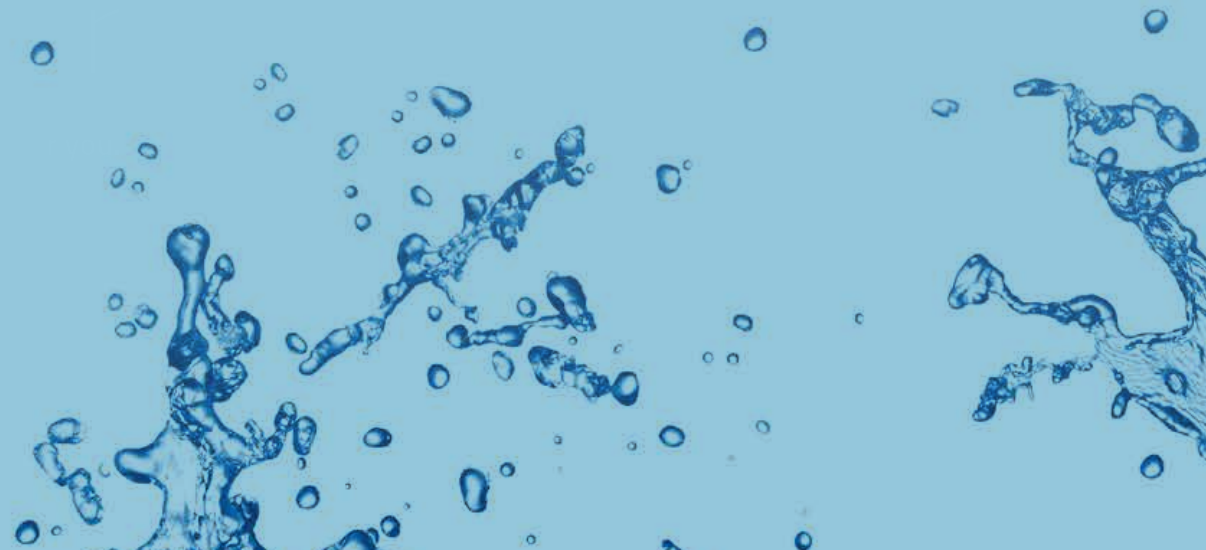


Pine Rivers North

Parameter	Units	Number of Samples	Min Result	Max Result	Average Result	ADWG Aesthetic Guideline	Met ADWG
Aluminium	mg/L	141	<0.02	0.05	<0.02	0.2	✓
Ammonia (free) NH3	mg/L	1	<0.02	<0.02	<0.02	0.5	✓
Colour (apparent)	PCU	141	<1	5.2	<1	15	✓
Colour (true)	PCU	141	<1	2.7	<1	15	✓
Conductivity	uS/cm	414	184	655	273	1000	✓
Copper	mg/L	69	<0.01	0.07	<0.01	1	✓
Iron	mg/L	141	<0.01	0.14	<0.01	0.3	✓
Manganese	mg/L	141	<0.01	0.02	<0.01	0.1	✓
pH	pH Units	398	6.9	8.5	7.6	6.5-9.2	✓
Silica	mg/L	3	4	4	4	80	✓
Sodium	mg/L	11	20	27	24	180	✓
Temperature	^{0}C	398	17.2	30.4	23.6		
Total Hardness	mg/L CaCO3	10	53	71	60	200	✓
Turbidity	NTU	398	<0.05	7.6	0.12	5	✓
Zinc	mg/L	141	<0.01	<0.01	<0.01	3	✓

Pine Rivers South

Parameter	Units	Number of Samples	Min Result	Max Result	Average Result	ADWG Aesthetic Guideline	Met ADWG
Aluminium	mg/L	227	<0.02	0.06	0.03	0.2	✓
Ammonia (free) NH3	mg/L	519	<0.02	1.35	0.16	0.5	✓
Colour (apparent)	PCU	239	<1	5.9	1.62	15	✓
Colour (true)	PCU	224	<1	1.9	<1	15	✓
Conductivity	uS/cm	784	181	688	303	1000	✓
Copper	mg/L	107	<0.01	0.06	<0.01	1	✓
Iron	mg/L	227	<0.01	0.03	<0.01	0.3	✓
Manganese	mg/L	227	<0.01	0.02	<0.01	0.1	✓
pH	pH Units	754	7.1	8	7.6	6.5-9.2	✓
Silica	mg/L	2	6	7	6.5	80	✓
Sodium	mg/L	10	19	52	28	180	✓
Temperature	^{0}C	754	16.2	29.8	23.0		
Total Hardness	mg/L CaCO3	6	62	171	97	200	✓
Turbidity	NTU	793	<0.05	1.1	0.13	5	✓
Zinc	mg/L	227	<0.01	0.02	<0.01	3	✓

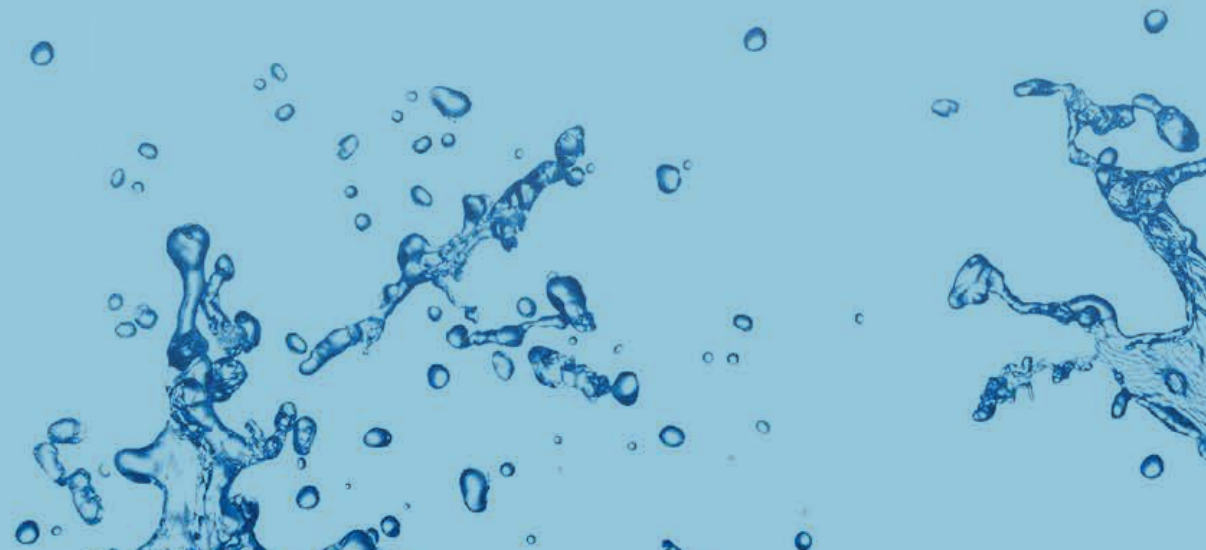


Railway Towns

Parameter	Units	Number of Samples	Min Result	Max Result	Average Result	ADWG Aesthetic Guideline	Met ADWG
Aluminium	mg/L	229	<0.02	0.04	<0.02	0.2	✓
Ammonia (free) NH3	mg/L	75	<0.02	<0.02	<0.02	0.5	✓
Colour (apparent)	PCU	229	<1	2.6	<1	15	✓
Colour (true)	PCU	229	<1	1.4	<1	15	✓
Conductivity	uS/cm	612	149	219	180	1000	✓
Copper	mg/L	86	<0.01	<0.01	<0.01	1	✓
Iron	mg/L	208	<0.01	0.06	<0.01	0.3	✓
Manganese	mg/L	229	<0.01	<0.01	<0.01	0.1	✓
pH	pH Units	612	7	9	7.7	6.5-9.2	✓
Silica	mg/L	1	12	12	12	80	✓
Sodium	mg/L	4	8	10	9	180	✓
Temperature	^{0}C	612	16.4	30.7	22.5		
Turbidity	NTU	612	<0.05	1.3	0.12	5	✓
Zinc	mg/L	229	<0.01	0.08	<0.01	3	✓

Redcliffe

Parameter	Units	Number of Samples	Min Result	Max Result	Average Result	ADWG Aesthetic Guideline	Met ADWG
Aluminium	mg/L	120	<0.02	0.11	0.03	0.2	✓
Ammonia (free) NH3	mg/L	244	<0.02	0.4	0.05	0.5	✓
Colour (apparent)	PCU	123	<1	31	2.2	15	✓
Colour (true)	PCU	120	<1	3.4	<1	15	✓
Conductivity	uS/cm	261	205	576	282	1000	✓
Copper	mg/L	45	<0.01	<0.01	<0.01	1	✓
Iron	mg/L	123	<0.01	0.32	0.01	0.3	✓
Manganese	mg/L	120	<0.01	0.06	<0.01	0.1	✓
pH	pH Units	251	7.3	8.2	7.5	6.5-9.2	✓
Silica	mg/L	1	6	6	6	80	✓
Sodium	mg/L	4	18	33	23	180	✓
Temperature	^{0}C	251	17.8	32.6	25.0		
Turbidity	NTU	258	<0.05	5.2	0.13	5	✓
Zinc	mg/L	120	<0.01	<0.01	<0.01	3	✓



Woodford

Parameter	Units	Number of Samples	Min Result	Max Result	Average Result	ADWG Aesthetic Guideline	Met ADWG
Aluminium	mg/L	40	<0.02	0.04	<0.02	0.2	✓
Ammonia (free) NH3	mg/L	124	<0.02	2.11	0.23	0.5	✓
Colour (apparent)	PCU	46	<1	1.7	<1	15	✓
Colour (true)	PCU	46	<1	1.2	<1	15	✓
Conductivity	uS/cm	134	166	359	230	1000	✓
Copper	mg/L	14	<0.01	<0.01	<0.01	1	✓
Iron	mg/L	40	<0.01	0.02	<0.01	0.3	✓
Manganese	mg/L	40	<0.01	<0.01	<0.01	0.1	✓
pH	pH Units	129	7	8.6	7.6	6.5-9.2	✓
Silica	mg/L	1	12	12	12	80	✓
Sodium	mg/L	4	11	21	17	180	✓
Temperature	^{0}C	129	16.5	27.7	22.1		
Turbidity	NTU	129	<0.05	0.43	0.09	5	✓
Zinc	mg/L	40	<0.01	<0.01	<0.01	3	✓

Water Quality Statistics Explained

When assessing performance against the Australian Drinking Water Guidelines health based limits, a calculation known as the 95th percentile is used. Based on the individual test results over the course of the reporting period, this calculation provides an estimate of the value at which 95% of results fall below. This is the approach recommended in the Australian Drinking Water Guidelines 2011 for assessing compliance against health based guidelines.

A different approach is used to compare performance against aesthetic guideline values. The mean, or average, result of the dataset is used to compare against the guideline value. Again, this is the approach recommended in the Australian Drinking Water Guidelines 2011.

Unit of Measurement	
mg/L	milligrams per litre. Sometimes referred to as parts per million (ppm)
µg/L	micrograms per litre. Sometimes referred to as parts per billion (ppb)
mpn/100mL	most probable number per 100 millilitres of sample
NTU	Nephelometric Turbidity Units
°C	degrees celcius
µS/cm	microsiemens per centimetre
PCU	platinum-cobalt units

Footnotes

ADWG = Australian Drinking Water Guidelines 2011

* The ADWG guideline for total chlorine is 5mg/L in areas where free chlorine is used as the disinfectant. In areas where monochloramine is used as the disinfectant, the guideline value for total chlorine is 4.1mg/L. In some cases, free chlorine and monochloramine are used as disinfectants in different locations within the same region. This report provides details on exceedences of either guideline, whichever is relevant to the location at which the sample was collected.

^ Table 10.5 in the ADWG states the aesthetic guideline for pH as 6.5 to 8.5, however notes that values up to 9.2 are acceptable in new concrete tanks and cement-mortar lined pipes provided that monitoring indicates no deterioration in microbial quality of water.

Useful Information

Chlorinated tap water and aquariums

Please do not fill your fish tank directly from the tap!

Monochloramine and chlorine are both disinfectants used in Unitywater's water supplies, and both can be toxic to fish and other aquatic organisms. De-chlorination chemicals can usually be purchased from your local pet store, or alternatively leave a container of water open overnight to allow the chlorine or monochloramine to dissipate. Ideally less than one third of the tank volume should be replaced at any time, unless you are confident that all chlorine or monochloramine has been removed. Please ask your local pet store staff for further information.

Chlorine taste in water

Chlorination of drinking water first began in 1854, and this has been hailed as one of the defining historical moments in improving public health! Disinfection of naturally sourced drinking water is necessary in most cases, to kill or inactivate microorganisms that may be harmful to you or your families' health. Unitywater aims to strike the balance between maintaining sufficient chlorine (or monochloramine) to keep microorganisms at bay, while keeping in mind our customers' taste preferences.

Ultimately our goal is to keep you safe, and some customers located near a disinfection point may experience a regular noticeable chlorine taste in their water. You can reduce the chlorine taste in your drinking water by filling up a jug and leaving it on your kitchen bench overnight.

Disposal of fuel and chemicals around the home

Certain chemicals such as fuel, oil, kerosene, paint thinners and other petroleum-based products can represent a risk to your water supply if not disposed of properly. These chemicals, if tipped out onto the ground, can seep through plastic water pipes supplying your house and result in an unpleasant taste and potentially hazardous water entering your home. Tipping chemicals down the sink can also cause serious problems in your home and the Sewage Treatment Plants.

Please dispose of your unwanted fuels and chemicals in the appropriate manner! Contact your local council for more information on methods for disposal of chemicals.

Fluoride in water

Fluoride is added to drinking water by Seqwater.

Questions about the fluoridation process should be directed to Seqwater: **www.seqwater.com.au**

Questions about fluoride and your health should be directed to Queensland Health: **www.health.qld.gov.au**

Useful Information continued

Recently moved In?

If you have recently moved into a new home, or have been away on holidays, we recommend that you flush your taps for a few minutes before use. This will clear away any stagnant water that has been sitting in the internal household plumbing and ensure that you are getting the best quality of water possible. If you have moved from another area, you may notice that the water tastes different to what you are accustomed to. This is normal, and it may be worth talking to your neighbours before calling us to report an issue.

Sodium in drinking water

Those on a low sodium diet may be interested in the amount of sodium in drinking water. In 2013-14, sodium results ranged from 8 to 82mg/L across our supply regions. Please refer to Aesthetic Water Quality on page 41 for more detail on typical sodium results in your area.

Itchy Skin

In winter, the cold dry air can make people's skin dry out and become itchy particularly when taking a hot shower. We receive a few calls from customers who believe that something in the water is causing the itchiness. Bear this in mind during the winter months!

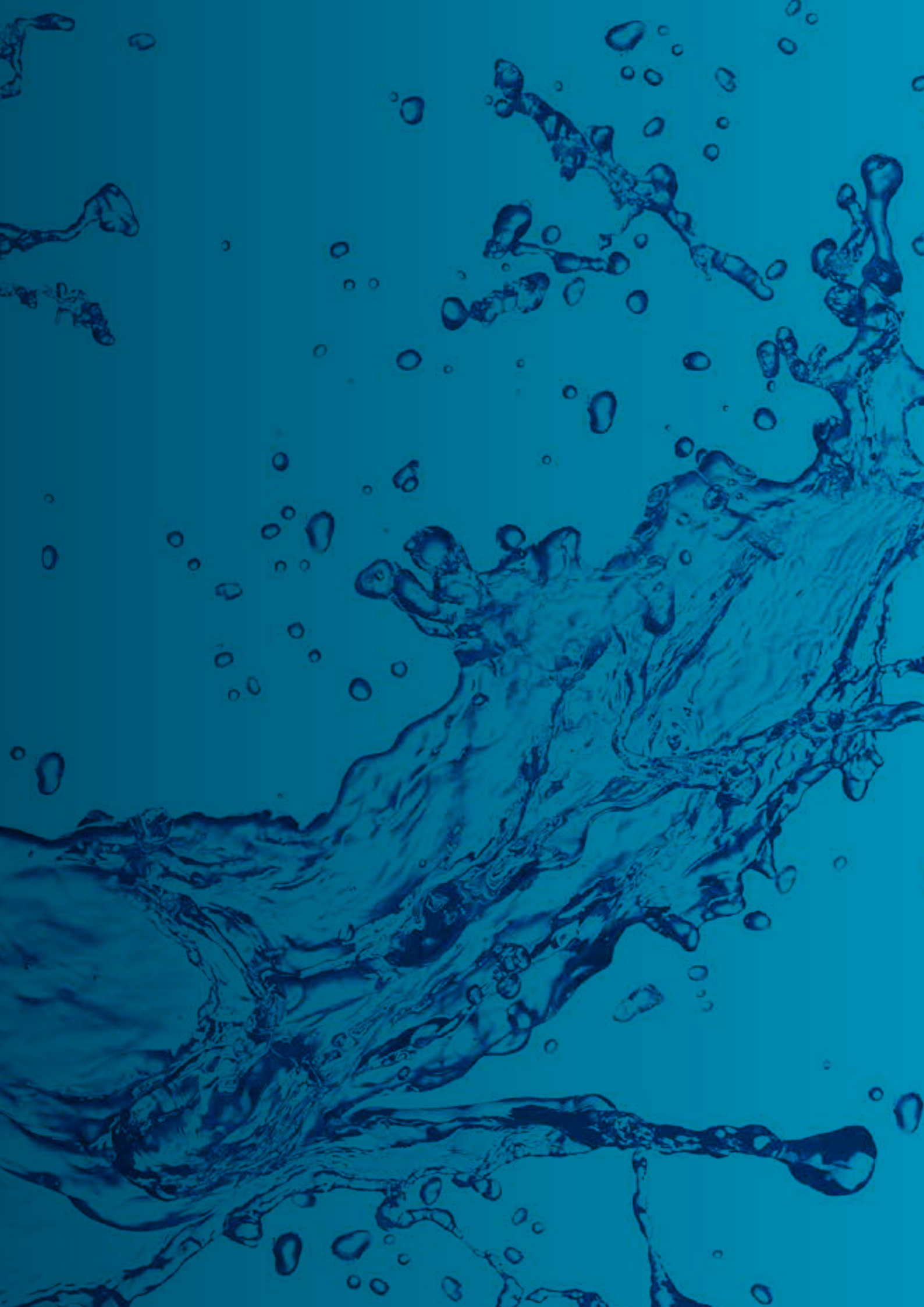
Water hardness

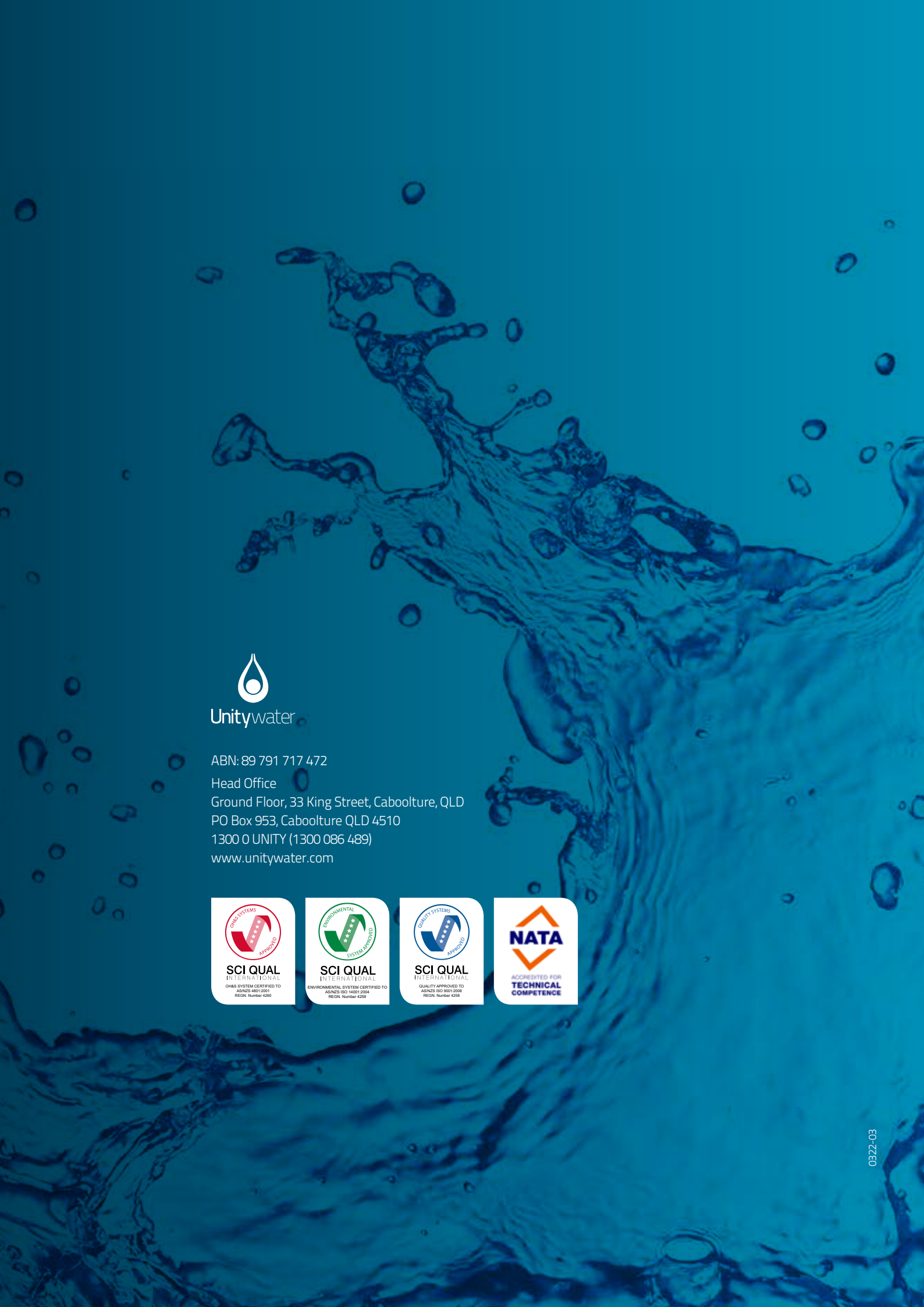
In most Unitywater regions, water can be classified as 'soft' to 'normal', with hardness results below 200mg/L. Please refer to Aesthetic Water Quality on page 41 for more detail on typical hardness results in your area. Some appliances will quote figures in mmol/L instead of mg/L. In this case you can easily convert using the following formula:

1mmol/L = 100mg/L hardness (as $CaCO_3$) = 100ppm hardness (as $CaCO_3$).

Water testing

Our laboratory can conduct testing for private customers at a fee.
Please visit our website for more details:
www.unitywater.com/Laboratory-services.aspx





Unitywater

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