2018-19 South Australian Water Corporation **Annual Report**

FOR THE YEAR ENDING 30 JUNE 2019

Government of South Australia

SA Water

FOR FURTHER DETAILS CONTACT

SA Water Corporation
ABN 69 336 525 019

Head office
250 Victoria Square/Tarntanyangga
Adelaide SA 5000

Postal address
GPO Box 1751
Adelaide SA 5001

Website
sawater.com.au

Please direct enquiries about this report to our Customer Care Centre on 1300 SA WATER (1300 729 283) or customerservice@sawater.com.au

ISSN: 1833-9980

0043R11909
27 September 2019

Letter of Transmittal

27 September 2019

The Honourable David Speirs MP
Minister for Environment and Water

Dear Minister

On behalf of the Board of SA Water, I am pleased to present the Corporation's Annual Report for the financial year ending 30 June 2019.

The report is submitted for your information and presentation to Parliament, in accordance with requirements of the *Public Corporations Act 1993* and the *Public Sector Act 2009*.

This report is verified as accurate for the purposes of annual reporting to the Parliament of South Australia.

Andrew Fletcher AO
Chair of the Board

Contents

A message from the Chair 05
A message from the Chief Executive 06

About SA Water 08
Our vision 08
Our values 08
Our organisation 08

Our strategy 10

Our services 12
Overview of our networks and assets 12
Map of our supply areas 13
Map of our reservoirs, water treatment plants, borefields and major pipelines 14
Map of our reservoirs, water treatment plants and supply areas, metropolitan Adelaide 15
Map of our reservoirs, water treatment plants and supply areas, outer metro 16
Map of our sewage treatment plants 17

2018-19 snapshot 18

Year in review 20
Getting the basics right every time 20
Working together 31
Leading the way 39
Capable and committed team 47
Keeping it simple 52
Sustainable Development Goals 54
Water quality 56

Effective governance 62
Legislation 62
Key regulators 62
The Board 62
Directors' interests and benefits 62
Board committees 62
Organisation structure 63

Financial performance 65
Financial performance summary 65
Consultants 65

Supplementary reporting items 66
Fraud 66
Strategies implemented to control and prevent fraud 66
Whistleblowers disclosure 66
Summary of complaints 66

Appendices 69
Audited financial statements 69
Drinking water quality data 136

A message from the Chair

Water services have great capacity to build a resilient community through health and wellbeing, cooling green spaces and enabling economic growth, all the while supporting daily life. All factors which contribute to increasing liveability in South Australia.

The Corporation has a long history of innovation and the Board continues to look beyond a 20-year horizon to actively position and prepare SA Water as a utility of the future.

As a leader in many fields, it is important SA Water draws on global trends and developments to understand how customers' needs are changing. The Corporation's vision and strategy remain strong and focused on investing to create the future services and life customers will expect. Lessons learnt and best practice are also being gathered from different sectors, beyond the water industry. All the while, the Corporation continues to deliver for customers' evolving water services needs while remaining focused on getting the basics right in the delivery of these services.

In 2018-19, SA Water joined the United Nations' Global Compact, the world's largest corporate sustainability initiative which supports progress towards achieving the Sustainable Development Goals. These goals seek to make positive change for people, planet and prosperity by 2030.

Sustainability — of services, community and environment — is a global issue which the Corporation is working to address at a local level. With significant investment now underway in renewable energy generation and storage, there is a focus on improving sustainability while contributing to low and stable pricing, and ever reliable services.

By embracing innovation and new ideas, SA Water is supporting the state's economy. One example this year is the collaboration on the first commercial pilot of a molten silicon energy storage system built at the Glenelg Wastewater Treatment Plant by South Australian company 1414 Degrees. Providing an opportunity to trial a new application of this technology in the capture and use of biogas, SA Water is demonstrating how partnerships and innovation are helping to foster homegrown solutions for a more sustainable future.

With a view to meeting customers' evolving expectations, work is underway to implement a new model for service delivery in metropolitan Adelaide. Comprising two parts — production and treatment, and field services — this refreshed approach will combine the best of local knowledge and experience with national and international expertise. Partnerships with industry expertise will enable continuous improvement in customer service delivery.

SA Water's workforce is its biggest asset and the safety of our people, customers and the wider community remains an unwavering focus for the Board. It is pleasing to see such a strong safety culture in the Corporation. In particular, results from the State Government's *I Work for SA* survey show that 92 per cent of the workforce agree SA Water is committed to workplace safety.

With a strong connection to their local communities across the state, the contributions from the skilled, dedicated and adaptive workforce has ensured the Corporation continues to deliver for more than 1.7 million South Australians every day.

Andrew Fletcher AO
Chair of the Board

A message from the Chief Executive

With a focus on creating a better life in South Australia, this year we have made some significant achievements towards our vision.

Investing in renewable energy generation and storage, as we work towards an ambitious goal of zero net electricity costs from 2020-21, is an important contributor to a sustainable future for our business and our state. Neutralising large operating costs like electricity — which reached $83 million in 2018-19 — contributes to low and stable prices over time for our customers.

Digital transactions continue to increase in popularity among our customers and in response we are developing and growing our digital offering. This includes our website, online account management options and use of social media. Visits across our websites were up 15 per cent from 2017-18, and self-service transactions through *my*SAWater grew nearly 90 per cent. In May 2019 we achieved a new record with more than 16,000 online transactions in just one month.

As a member of the cross-government taskforce responsible for opening reservoir reserves for public access, we worked closely with the community and a range of government agencies to open Myponga Reservoir Reserve to the public in April 2019. With a focus on supporting the implementation of this government initiative, we successfully balanced public access with ensuring drinking water quality and security, attracting more than 6,000 visitors to Myponga Reservoir Reserve in its first three months of being open.

Our shift to a harm based approach to safety has supported and influenced the engagement of our people and there has been a noticeable improvement in our proactive safety reporting of potential harm. This shift is enabling conversations through sharing opportunities to learn within our business, as well as with our partners and wider supply chain.

With a high participation rate of 74 per cent in the South Australian Government's *I Work for SA* survey, our people indicated strong levels of engagement. Across all major indicators, our people tracked above the public sector average, including engagement levels, leadership, values and wellbeing. In particular there was a high commitment to workplace safety, and a willingness to go above and beyond and suggest improvement ideas. The survey also identified opportunities for improvement such as further simplification of processes. Results are informing our ongoing work to foster a constructive and collaborative culture right across our business.

This year's long, dry summer and autumn saw an increase in water sales and a corresponding increase in energy used to deliver this extra water to our customers. With sound management, we responded to customer demand while also meeting our budgeted return to government.

In November 2018 we recognised our people who went above and beyond delivering great outcomes for our customers at our inaugural Innovation and Excellence Awards. Competition was strong across the seven award categories. Among the winners we celebrated the implementation of trenchless pipe repair techniques, improved sludge lagoon monitoring, community engagement outcomes from the Hallett Cove Wastewater Pump Station upgrade, and the retrieval of a vehicle from the Blue Lake/War War in Mount Gambier.

Receiving a number of local, national and global awards, we are leading the way in the water industry, particularly for our adoption and use of new technologies for customer, commuter and community benefit.

The Adelaide smart water network trial received global recognition when it was awarded a bronze medal at the International Water Association Awards in September 2018, edging out 160 entries from 45 countries in the Smart Systems and the Digital Water Economy category. The network was also acknowledged at the Institute of Asset Management Awards in London winning the Customer Service Award in November 2018.

Our smart wastewater network in trial underway in Stonyfell and Gawler was named the Best Industrial Internet of Things Project at the 2019 Internet of Things Awards.

Recognition was also received for our water quality testing laboratories with awards for the use of advanced DNA testing, combating greenhouse gas emissions from wastewater systems, and for Cryptosporidium research.

Change is all around us and it will continue as we prepare for the next regulatory period. *Our Plan 2020-24* is well advanced, having been prepared together with our customers. Extensive engagement with customers and representative groups has ensured we understand what they value and expect from us, so we can continue to deliver world class water services that support a better life in South Australia.

Roch Cheroux
Chief Executive

90%
increase in self-service transactions using *my*SAWater

6,000+
people visited Myponga Reservoir Reserve after its opening in April 2019

Our adoption and use of new technologies received a number of local, national and global awards

About SA Water

Our vision

World class water services for a better life.

Our values

Together we deliver safely and stand accountable, genuine and innovative every day.

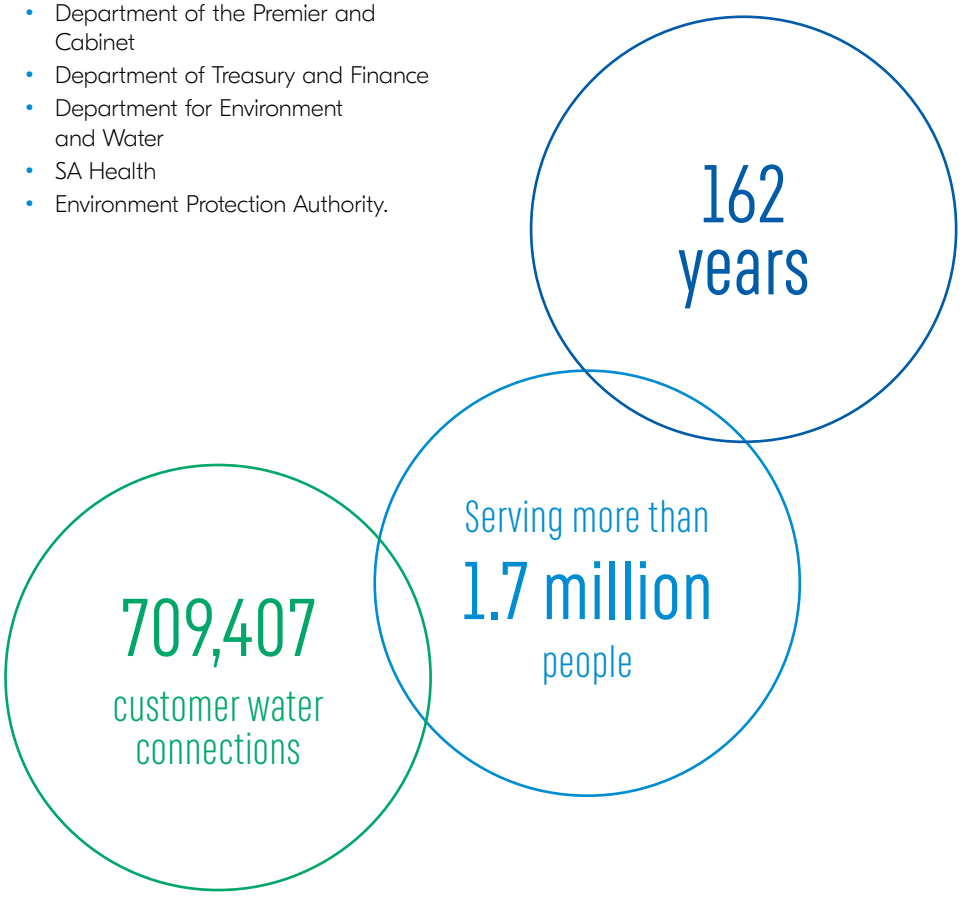
Our organisation

We are South Australia's leading provider of water and sewage services for more than 1.7 million people. For more than 160 years we have been working together with South Australians to ensure a reliable supply of safe, clean water and a dependable sewerage system. We are committed to ensuring our services represent excellent value.

As a statutory corporation we report to an independent Board and balance the delivery of services in a competitive market with our responsibility to provide a return to government.

We are included in the portfolio of the Minister for Environment and Water and work closely with a number of South Australian government agencies including:

- Department of the Premier and Cabinet
- Department of Treasury and Finance
- Department for Environment and Water
- SA Health
- Environment Protection Authority.



Our strategy

The world and our customers shape everything we do, and they are constantly changing and evolving, so we monitor global megatrends and explore the impact they may have on us and our customers, now and into the future. By anticipating future directions, we are best placed to deliver our vision of *world class water services for a better life*.

Our strategy sets our path as we work towards this vision, guiding the decisions we make each day. We listen to our customers to understand what matters to them, and include this insight in our strategic goals, outlined below.

Global megatrends and future directions informed our 10-year corporate business plan, developed in 2018-19. In late 2018 we developed future customer personas to further enrich our business planning process.

Getting the basics right every time

Customers expect us to get the basics right: the safety and availability of safe drinking water and dependability of sewerage services. We are responsive when things go wrong, fix faults quickly and meet our regulated responsibilities. Customers expect our prices to be low and stable.

Working together

As a team, our productive, respectful relationships with our customers, regulators and stakeholders are key to delivering services our customers value. Understanding and supporting our customers is vital.

Leading the way

We are leaders nationally and globally to give our customers confidence that we are innovating to achieve great outcomes for them. We support the South Australian community and economy.

Capable and committed team

Our experienced and capable team consistently lives our values with actions and behaviours to safely deliver for our customers every day. Our people are valued brand ambassadors.

Keeping it simple

Simple, easy, customer friendly processes are important to create value for our customers.

WE SUPPORT

UN GLOBAL COMPACT

Supporting the Sustainable Development Goals

In 2015, the United Nations General Assembly adopted 17 Sustainable Development Goals (SDGs). These goals are part of a global development blueprint through to 2030. They are universal, transcend borders and apply across the workplace, marketplace and community. They seek to reduce poverty, inequality, unrest and environmental stress around the world. Water, essential to life, plays an integral role to achieving each goal.

We are a signatory to the Australian water industry's commitment to support the SDGs as a plan of action for people, planet and prosperity. We are doing our part to achieve these goals while delivering world class water services for a better life.

This year we joined as a participant of the United Nations Global Compact, the world's largest corporate sustainability initiative which exists to implement universal sustainability principles and support progress towards achieving the SDGs.

As a participant in the Global Compact, we are actively involved in achieving the SDGs. There are 170 Australian businesses and organisations supporting the Global Compact with 30 signed up as participants, and the remainder as signatories. Participants pledge to:

- operate responsibly, in alignment with universal sustainability principles
- take actions that support the society around them
- commit to the effort from the organisation's highest level
- report annually on their ongoing efforts
- engage locally where they have a presence.

The Global Compact supports businesses and organisations to be guided by the Ten Principles of human rights, labour, environment and anti-corruption, and to contribute to the 17 SDGs.

Our services

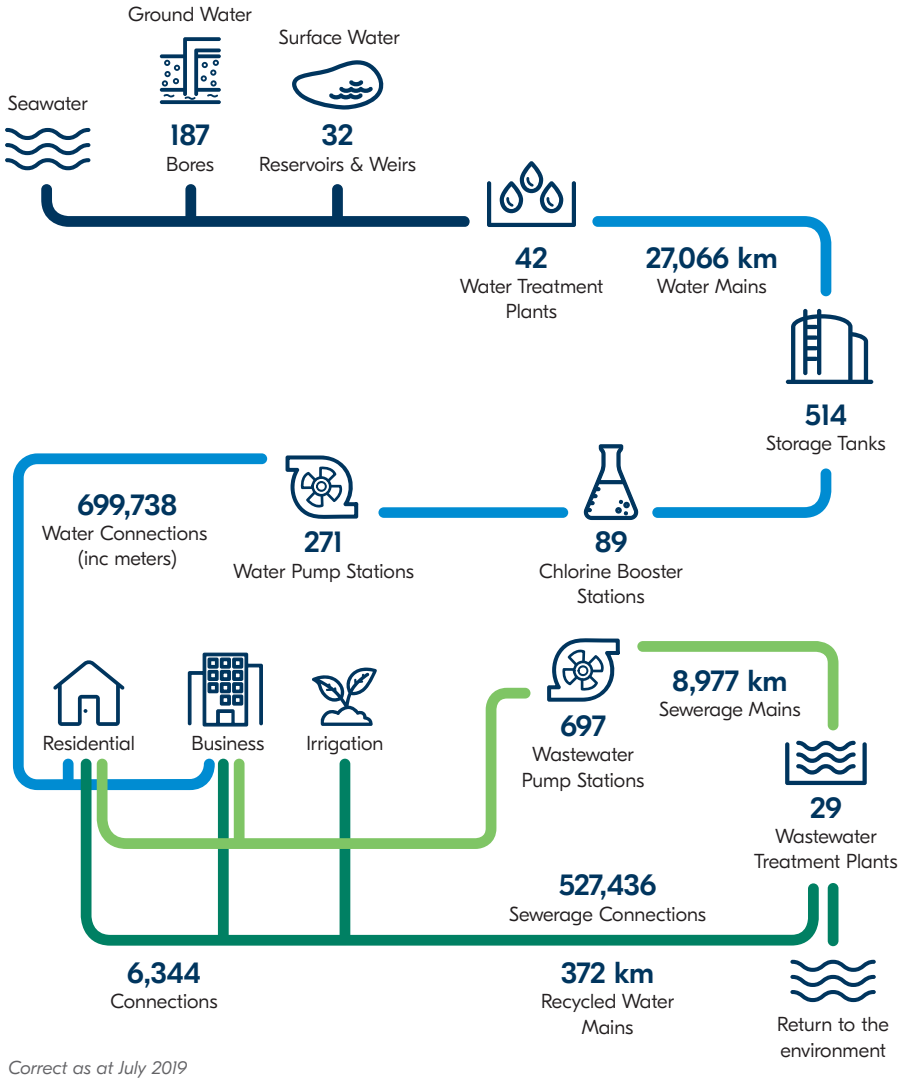
Each year we supply more than 220 billion litres of water to South Australians via our extensive and largely hidden pipes deep underground across our cities, suburbs and towns.

Every day we're providing essential services and as one of the most efficient water utilities in Australia, we are continually improving the way we do this to achieve our vision of world class water services for a better life. With the aim of keeping prices as low and stable as possible for our customers, we strive to make smart, long-term investments, the best use of new technologies, and to deliver on our commitment to efficiency.

We remain focused on meeting our legal and regulatory responsibilities as well as what is most important to our customers.

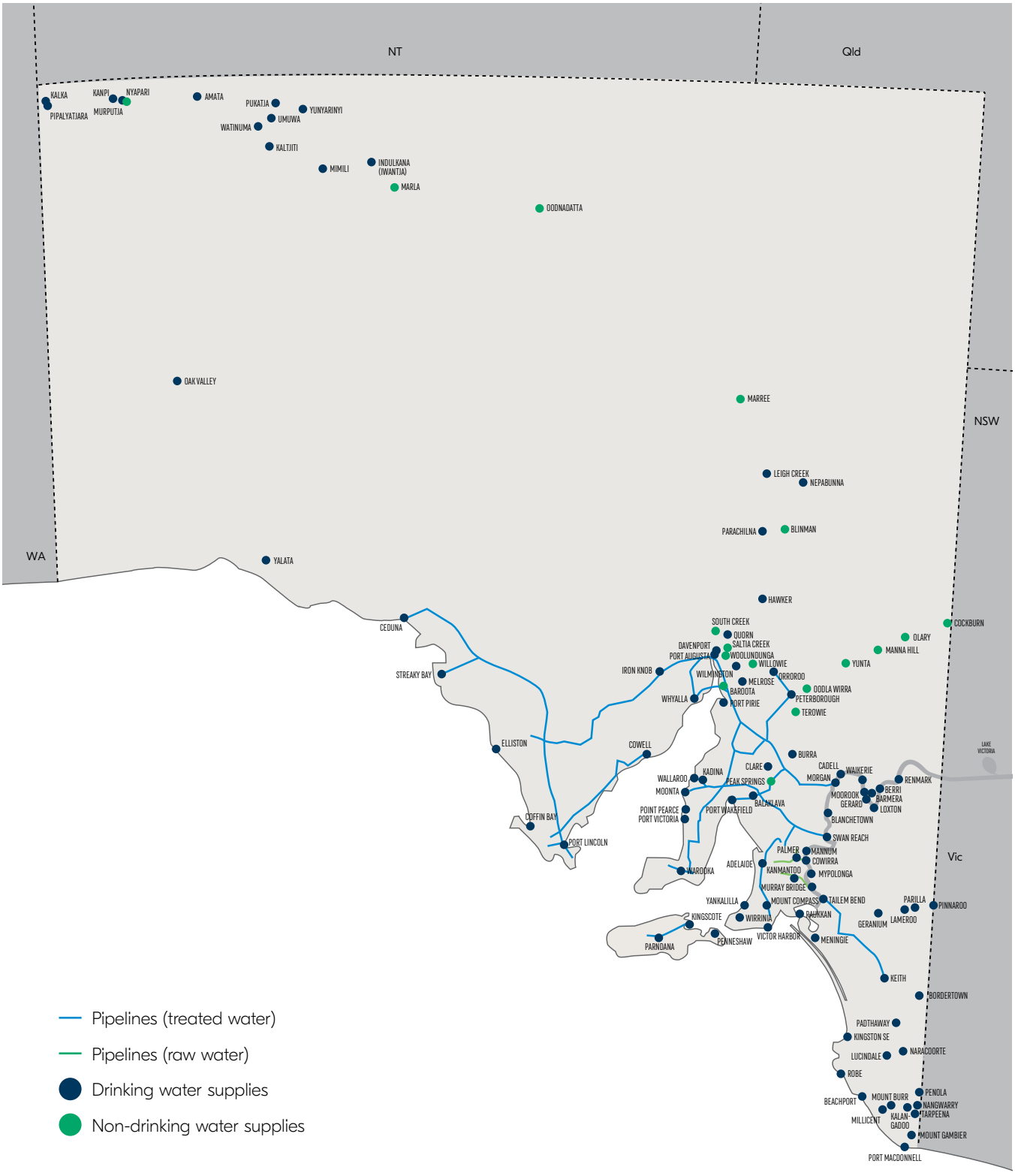
Of all Australian water utilities, we have the longest water mains supply network at more than 27,000 kilometres. In addition, we manage nearly 9,000 kilometres of sewerage mains and the longest recycled water network in the country, at more than 370 kilometres.

Overview of our networks and assets

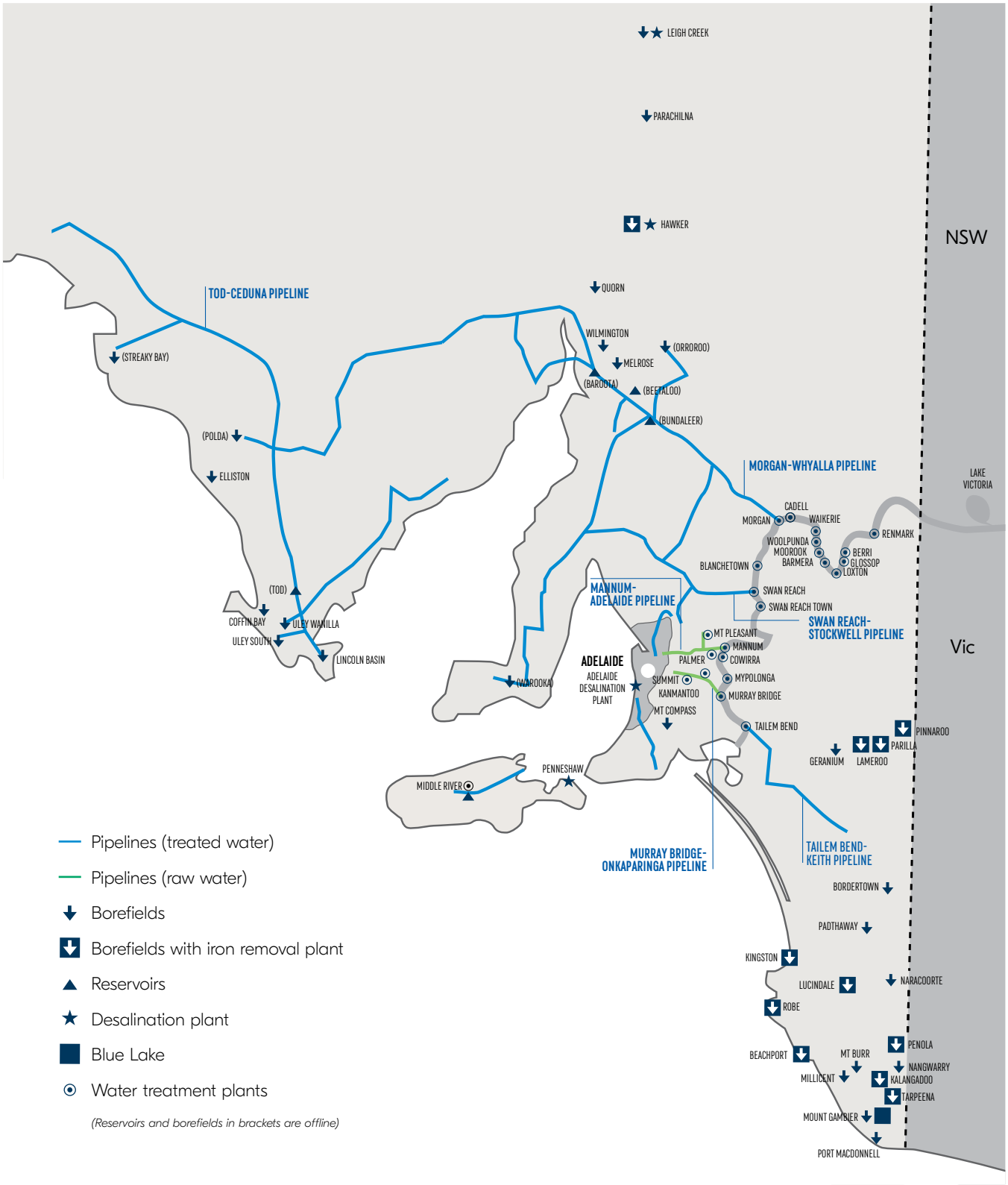


Correct as at July 2019

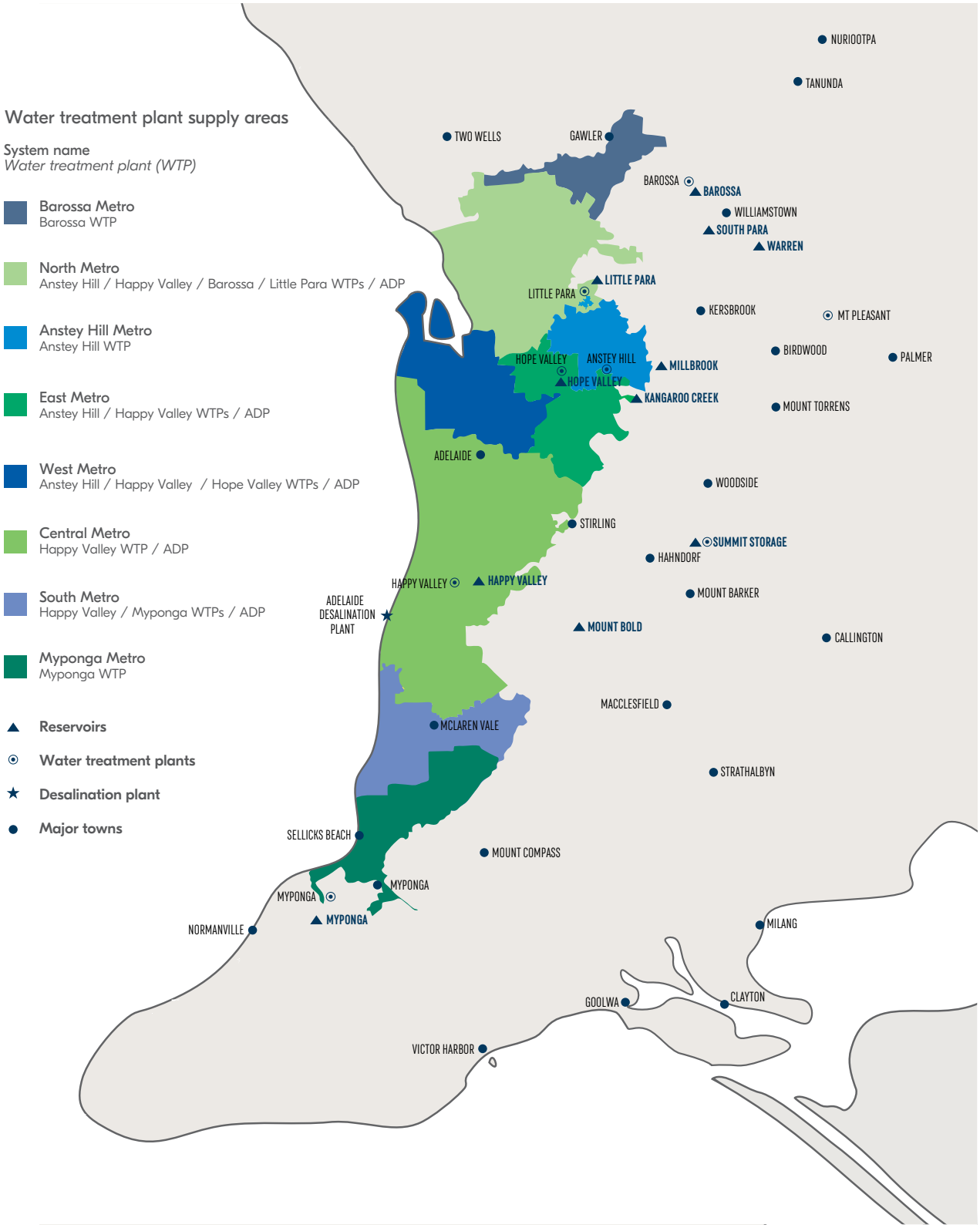
Map of our supply areas



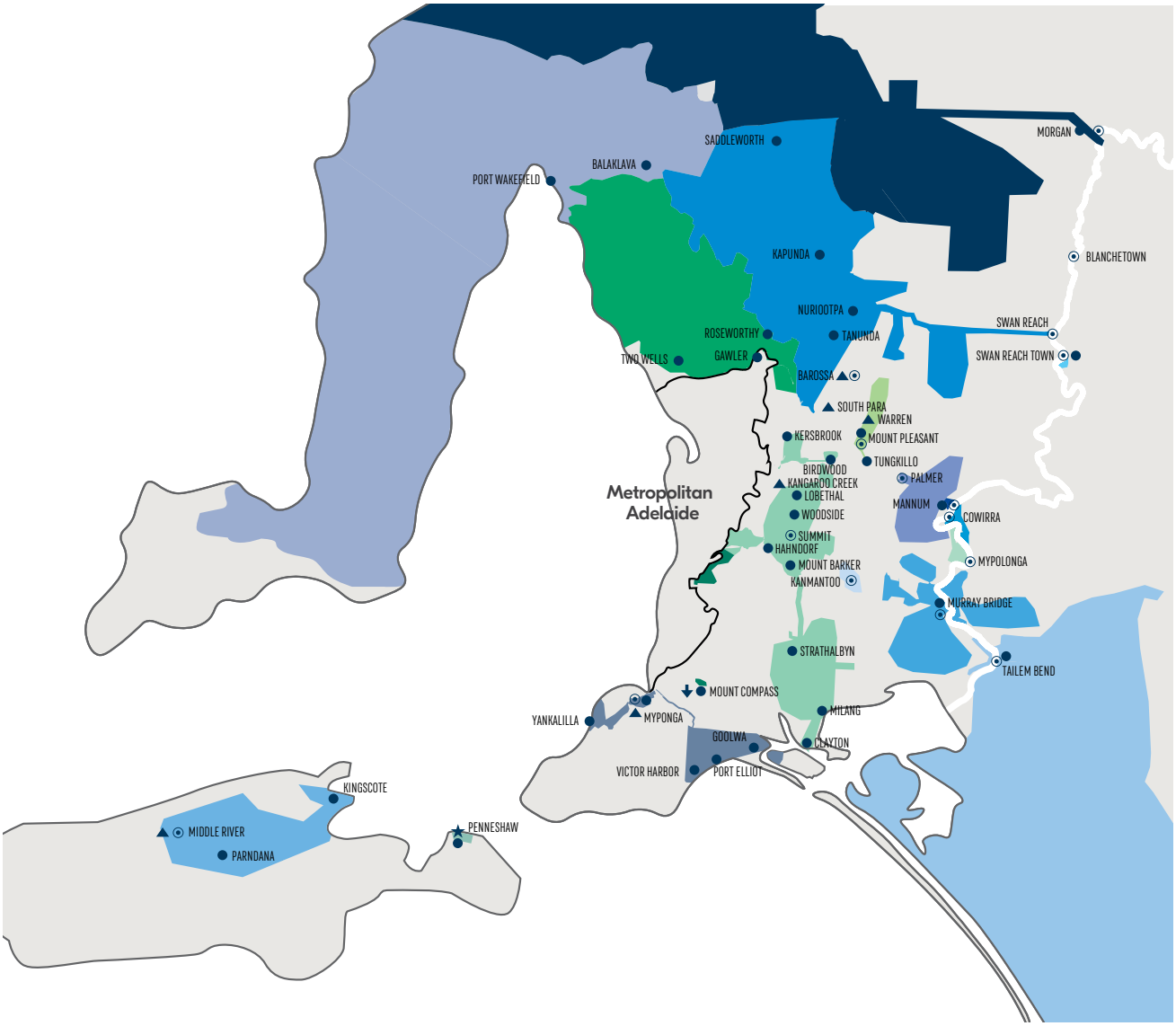
Map of our reservoirs, water treatment plants, borefields and major pipelines



Map of our reservoirs, water treatment plants and supply areas, metropolitan Adelaide



Map of our reservoirs, water treatment plants and supply areas, outer metro

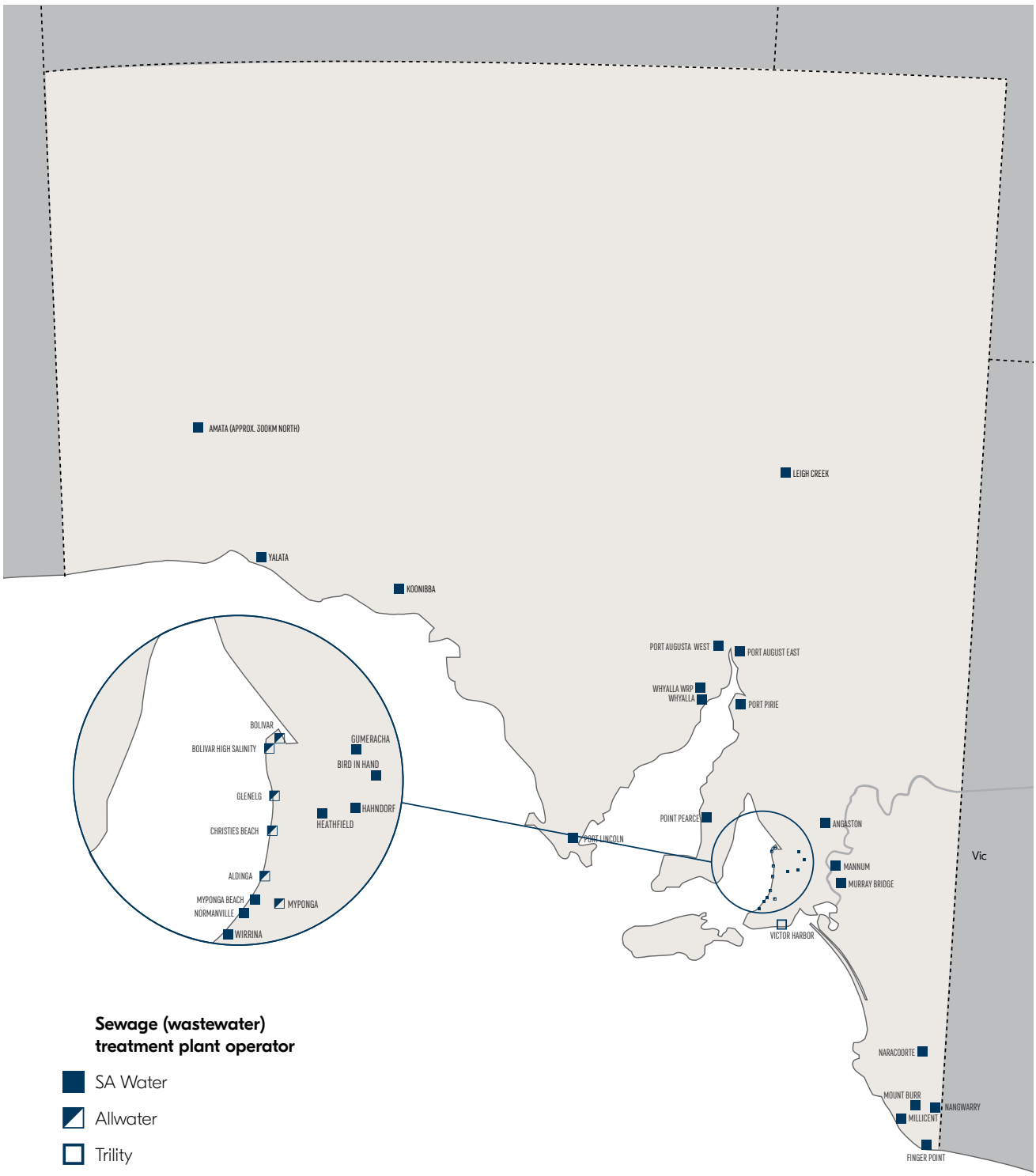


Water treatment plant (WTP) supply areas

- Morgan WTP
- Swan Reach WTP
- Mount Pleasant WTP
- Morgan-Swan Reach WTP
- Barossa WTP
- Happy Valley WTP
- Mannum WTP
- Cowirra WTP
- Swan Reach Town WTP
- Mypolonga WTP
- Murray Bridge WTP
- Palmer WTP
- Summit WTP
- Myponga WTP
- Kanmantoo WTP
- Mount Compass (bores)
- Tailem Bend WTP
- Middle River WTP
- Penneshaw WTP

- Borefields
- Reservoirs
- Water treatment plants
- Desalination plant
- Major towns
- Metro boundary

Map of our sewage treatment plants



2018-19 snapshot

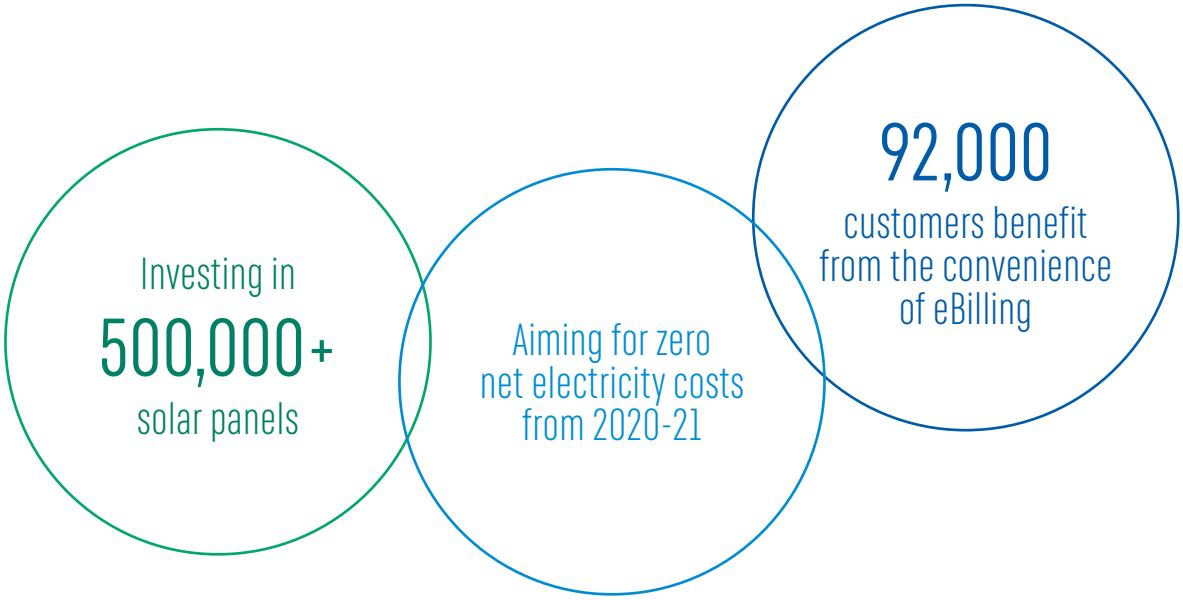
A BETTER LIFE IN SOUTH AUSTRALIA

Water is critical to how we live, work and play in this state, and we continue to explore opportunities to make our spaces more liveable and our services more accessible and sustainable.

Through our industry-leading initiative, we are changing the way we work to deliver better water services for our customers living with a disability or debilitating lifestyle condition (*Better understanding our customers*, page 31). Working together with this group of customers, we are gaining greater understanding of their water service needs and challenges. The goal is to ensure anyone living with a disability or accessibility issue is able to best engage with our services, and that we are meeting their needs.

Building on our trial at Adelaide Airport to cultivate green space to manage urban heat islands, we continued to use water in new ways. Cool zones were created at the 2019 Tour Down Under Village providing riders and spectators respite from the heat with the help of water misters. This type of innovation is creating new opportunities for people to use water differently and make our everyday lives more comfortable. See *Cooling the community* on page 46 for more details about this initiative.

Much has been achieved as we implement our 2017-20 Reconciliation Action Plan. Our activities this year range from education and training programs, infrastructure upgrades and supporting Aboriginal businesses, to community art projects, dual naming and sharing stories. There are full details on pages 39 to 41.



A sustainable future

Central to a sustainable future is our investment in renewable energy generation and storage. In February 2019 we awarded a contract to South Australian company Enerven to install about 154 megawatts of solar photovoltaic generation and 34 megawatt hours of energy storage across up to 70 of our sites. This investment in more than 500,000 solar panels will help us towards an ambitious goal of zero net electricity costs from 2020-21 and there are details under *Creating a zero cost energy future* on page 44.

Growing digital capability and offering

Technology and digital capability is increasingly central to how we operate our business and interact with our customers.

The smart water network has expanded, including to Penneshaw on Kangaroo Island (see *Penneshaw benefits from smart network expansion* on page 42), and continues to generate significant interest among our industry peers in Australia and around the globe. See *Getting smarter across the state* on page 42 and *Smart water network wins global prize* on page 43 for full details. With an investment of $5 million, we are trialling advanced smart sewer technology (see page 43) in the wider metropolitan area to complement our existing sewer maintenance programs with the aim of improving service reliability.

Nearly 92,000 customers across more than 100,000 properties now benefit from the convenience of eBilling (*Digital services for customers* on page 31), with interactions online and through social media continuing to grow.

Our people and their safety

Moving beyond the traditional lag metrics for work health and safety, we adopted a harm based approach to safety in March 2019 (*Safety and wellbeing of our people*, page 47). This focuses our attention on the potential outcomes of an incident or event as well as the actual outcomes. Actual or potential life changing events are classified as 'diamond events' enabling us to prioritise serious incidents and focus our resources to prevent the likelihood of a recurrence.

Our refreshed *Inclusion and Diversity Plan* (see page 47) builds on our culture and values to create a workforce that offers flexibility, with opportunities for emerging talent, women, and Aboriginal and Torres Strait Islanders.

Year in review

GETTING THE BASICS RIGHT EVERY TIME

Customers expect us to get the basics right: providing safe quality drinking water, and dependable sewerage services. We are responsive when things go wrong, fix faults quickly and meet our regulated responsibilities. While delivering services our customers value, we are mindful of keeping prices as low and stable as possible.

Technology for field-based workers is standard business practice.

Technology for our people in the field

The statewide rollout of our technology program for field-based workers is complete and now a standard business practice. With the formation of the Service Continuity team, which brought together our call centre, fault reporting, community support and statewide dispatch functions, this technology is a key enabler to consolidate and streamline how our network teams operate across metropolitan and regional areas.

There are now 760 field-based workers using the Work Order App, our electronic workflow management tool. This year, 180 people from our alliance partner Allwater were trained in using the Work Order App and it is now core kit for our Technical Services and Trade Waste teams.

Access to our eMap tool, which enables electronic access to asset information in the field, was expanded to include people employed by Allwater. The capability of this tool is being further developed. During 2018-19, the capture in eMap of water shutoffs in the metropolitan area has started, enabling us to notify customers of an unplanned temporary service interruption.

Right across the state, our people are now using a digital scheduling and dispatch system, known as Click. A pilot of Click is underway in the Technical Services team where it has been identified this technology can improve the service we provide for customers.

Further development of our Capacity Planning Tool is underway to enable short- and long-term forecasting, as well as work and resource planning.

With our in-vehicle safety system rolled out to regional areas, in 2018-19 it was successfully integrated into Click enabling improved dispatch decision making for high priority incidents and occurrences by using current location and resourcing information.

Warooka pipeline construction on Hardwicke Bay Road.

Managing our networks

To ensure delivery of reliable, high quality services to our customers across the state, during 2018-19, we invested $294.6 million in the water network and infrastructure, and $217.8 million in the wastewater network and infrastructure.

Our ongoing water network management program focuses on improving the reliability of supply for our customers. We installed more than 58 kilometres of new water mains: more than 47 kilometres in metropolitan Adelaide and more than 11 kilometres in country areas.

Across our water network of more than 27,000 kilometres, including more than 9,000 kilometres in metropolitan Adelaide and nearly 18,000 kilometres in country South Australia, there were 4,115 main breaks and leaks in 2018-19.

A key measure used to assess and compare the performance of water distribution networks is the rate of breaks per 100 kilometres of water main. The Bureau of Meteorology's *National performance report 2017-18: urban water utilities*, released in February 2019, analyses the performance of 85 water utilities across Australia and confirmed our customers experience 13.6 water main breaks per 100 kilometres of water main, which is well below the national average of 19.4, and only bettered by four other major utilities.

We continue to innovate to improve network maintenance and provide reliable services for our customers. In 2018-19 our use of smart network technology increased and incorporates both water and wastewater networks. See more details under 'Leading the way' (see page 39).

Building proactive maintenance capability

We purchased and implemented five portable vibration analysers plus machinery health management software for asset health diagnostics and prognostics.

This advanced and highly scientific technology is being used to move assets located across the state from fixed, time-based maintenance to data-driven and condition-based sustainment. By identifying the condition of assets early, we are better placed to minimise impacts on customers' supply and the network.

Our overall maintenance approach is moving from reactive to proactive management, enabling increased asset reliability and availability in our network supporting the provision of reliable services for our customers.

Yorke Peninsula towns tap into better water

From October 2018, 1,500 people living and working in Warooka and Point Turton on the Yorke Peninsula began receiving a more secure supply of high quality drinking water through a newly-constructed pipeline.

The $9 million upgrade resulted in construction of a 38.5 kilometre pipeline, a booster pump station along the route, 1,250 metres of new water mains in Point Turton and re-roofing of the Warooka storage tank.

The towns' water source was switched from a bore field in the Para-Wurlie Basin in the lower Yorke Peninsula to the River Murray. Our extensive modelling showed the bore field was not adequate to meet future drinking water demand.

Water for Warooka and Point Turton is now treated at either the Morgan or Swan Reach Water Treatment Plant and then transported within the new pipeline, which connects to our existing network at Minlaton, before being piped to homes and businesses.

Above: The new earth bank storage at Morgan Water Treatment Plant.

Right: General Manager Asset, Operations and Delivery Mark Gobbie and District Leader for Clare and Mid Murray David Daly with new Orroroo pipeline infrastructure.

Increased Morgan water storage provides security, quality and economic benefits

Increased operational flexibility provided by extra storage at our Morgan Water Treatment Plant further improved the quality of drinking water, ensuring demand can continue to be met while achieving long-term cost savings.

A new double-lined earth bank storage was the major component of a $15 million upgrade to the plant, and following completion of construction and relevant testing in March 2019, is now operating as part of the wider water network.

Water storage capacity at the plant has increased from 12 to 42 million litres and with more available storage, water from the plant can be supplied at a steadier rate to meet the needs of the network it feeds.

The more consistent the flow within and out of the plant, the more control we have of our treatment systems, which makes it easier to manage water quality.

The treatment plant and network can essentially operate more independently of each other, giving our operators the ability to schedule energy-intensive activities like pumping at times when electricity prices are favourable.

We use pumps to move water from the plant and along the 358-kilometre Morgan to Whyalla pipeline, which supplies safe, clean drinking water to more than 130,000 people from the state's mid north all the way to central Eyre Peninsula.

A filter backwash tank and an additional 130 metres of underground pipework at the treatment plant site was also installed as part of the project.

This new infrastructure will help ensure the filtration and disinfection stages in our water treatment process continue to be safe, efficient and ready to meet an expected increase in demand.

New pipeline delivering for Orroroo

Customers in Orroroo have a new, high-quality drinking water supply reaching them through a 36 kilometre water pipeline to Peterborough which connects the town to our River Murray network.

From March 2019, the pipeline has significantly improved the aesthetic quality of the township's drinking water through the supply of water produced by the Morgan Water Treatment Plant. Through the pipeline, water is sent to a storage tank just outside Orroroo before being delivered to homes and businesses.

The project included the replacement of 17 kilometres of water main between Peterborough and Yongala.

Orroroo's supply was previously sourced from Walloway Basin groundwater, which although classified under the Australian Drinking Water Quality Guidelines as drinkable, did not meet certain taste qualities due to its natural salinity, a common feature of groundwater in Australia.

Glenelg water main renewal

In October 2018, we completed the installation of 970 metres of new water main at Glenelg, including under the southern side of Jetty Road, to improve the reliability of drinking water supply to local customers and reduce the potential for disruptive breaks and leaks.

Working together with the City of Holdfast Bay, local traders' association and the Department of Planning, Transport and Infrastructure, we ensured minimal disruption to traders and people travelling through the area, including a pause in activity to accommodate the summer trade and peak tourist period.

Free-flowing traffic was maintained during the day with work undertaken at night along Jetty Road, and during the day on side roads to minimise noise and traffic inconvenience for residents.

About 370 metres of the new water main installed was under Jetty Road, with the remainder moved to parts of Newmans Lane, Cowper Street and Milton Street.

APY Lands upgrades for a better life

Water infrastructure upgrades at Watinuma in the state's Anangu Pitjantjatjara Yankunytjatjara (APY) Lands were completed in May 2019 to improve the safety and reliability of drinking water for the local communities.

Since taking on management of water services in an additional three Aboriginal communities in the region — Kanpi, Nyapari and Watinuma — as well as government facilities at Murputja in late 2017, we have undertaken works to upgrade the water systems in these remote parts of the state ensuring they are durable and sustainable.

In Watinuma, we replaced water storage, treatment and distribution infrastructure, upgraded two bores — one solar and one electric — and installed smart meters to monitor water use, a new remotely monitored computer system as well as a 10 kilowatt solar and battery, plus a storage facility, to provide back-up power.

The use of solar and battery helps reduce our environmental footprint and costs and, when needed, is a reliable alternative to conventional electricity supply, given the region's warm climate and plentiful sunlight.

Works have begun in Murputja where we will construct a new water desalination treatment and storage plant which will also supply drinking water to nearby Kanpi and Nyapari.

Throughout we work closely with local people to ensure the outcomes are community-driven, this includes the engagement, planning, design and construction phases, as well as ongoing management and maintenance.

This is part of how we work with Aboriginal communities to support them through innovative solutions to provide safe, clean water, a key focus in our Reconciliation Action Plan.

The new water storage tanks in Watinuma.

Above: The new tank at Coomandook will support customers supplied through the Tailem Bend to Keith pipeline.

Right: Refurbishment of the water storage tanks in Kingscote is underway.

111

water storages will be restored and renewed across South Australia by 2020

A boost for water tanks and storage

As part of our $89 million tank rehabilitation and renewal program running from 2016 to 2020, we are investing in 111 water storages across South Australia to maintain the supply of water to customers.

New tank at Coomandook

Construction began in November 2018 on a new nine megalitre drinking water storage tank at Coomandook. The $10 million project improves water security for customers in the Lower Murray, Mallee and Upper South East regions who are supplied through the Tailem Bend to Keith pipeline.

When completed, the pipeline's storage capacity in the region will increase by about 30 per cent.

The pipeline is the primary source of drinking water for more than 10,000 people and increasing the area's water security supports the water demand from the growing population and economy.

Whyalla water tank refurbishment

In early 2019 we began refurbishing Whyalla's tank which, at 12 metres high, has a capacity of 56 million litres, or about 22 Olympic swimming pools of water.

This year's work follows similar maintenance work on Whyalla's other identical tank in 2018. The two large storages are important in supplying water to thousands of customers in the area including industrial customers like the large steelworks, so it is vital they support the delivery of safe, clean drinking water for years to come.

Works included internal concrete rehabilitation, new overflow pipework, new external concrete drains, as well as new roof beams and almost 5,000m^2 of roof re-sheeting. The tank refurbishment continues into 2019-20.

Increasing water storage on Kangaroo Island

Two nine megalitre concrete water storage tanks on Kangaroo Island are being restored. In 2018-19, one tank was completed and the second tank will be refurbished in 2019-20.

Prior to restoration the tanks were last operational about 20 years ago. When filled they will quadruple treated water storage capacity in the Kingscote water supply network enabling a more reliable service for customers.

Valuable valves improving Murray Bridge water service

In early 2019 we installed four isolation valves on the main pipe supplying drinking water to Murray Bridge, to improve reliability of supply to the regional city and limit impact on the community during any future required works.

Construction was undertaken overnight to minimise impacts with an alternate supply of drinking water arranged for water-dependent businesses.

Having more valves in our network means we can better isolate sections of pipeline for repairs. This reduces the size of areas and number of customers that experience temporary supply interruptions.

Improved flow in Waikerie

Beginning in May 2019, a series of upgrades were undertaken to our drinking water network in Waikerie to further improve the quality and reliability of water supplied across this area.

Work included the installation of about 25 metres of water main to the town's storage tank. In addition, specialised valves now better manage water pressure and modifications were made to the network where water leaves the treatment plant before being delivered to customers. The upgrade ensures consistent flow and pressure of the water in the network.

All works are expected to be complete in 2019-20.

Extra desalination to secure Kangaroo Island's long-term water needs

An additional desalination plant at Penneshaw was identified as the preferred option to secure Kangaroo Island's long-term water supply, in a refreshed plan developed together with the local community.

The plan, released in late 2018, confirms the existing Middle River and Penneshaw networks have adequate capacity to meet current needs and sustain growth until around 2036, unless a major development accelerates a step-change in water demand.

Under this organic growth scenario, development of the new water source will likely be actioned from 2030.

First created in 2009 and reviewed annually, our long-term plan for Kangaroo Island's water supply was significantly updated in 2018-19 to reflect current weather and climatic data, water supply and demand projections, and community priorities.

We currently operate two water supply systems for customers on Kangaroo Island — the Middle River, which supplies an average of 356 million litres of water across 1,500 customer connections, and the 400 kilolitre per day capacity Penneshaw Desalination Plant for approximately 300 customers on the eastern end of the island.

In time, expanded desalination capacity at Penneshaw could serve the entire island and provide additional benefits including options for new areas to connect to the mains network.

Left: Construction is underway on the final stages of the Port Lincoln Wastewater Treatment Plant upgrade.

Below: The new trickle filter is lifted into place at the Port Adelaide Wastewater Pump Station.

Port Lincoln's sewerage network upgrade

The three-year program of sewerage network upgrades to support residential and industrial growth in Port Lincoln reached its final stages in June when construction started on a new anaerobic digester and associated infrastructure at The Port Lincoln Wastewater Treatment Plant.

At a cost of $18 million, the new wastewater treatment infrastructure will increase the site's ability to receive waste produced by local industry, as well as reducing methane emissions and improving odour management.

Working together with the local industry we identified a sustainable solution, paving the way for continued expansion of Port Lincoln's major economic contributors.

The sewerage network upgrade project is expected to be completed by late 2020.

New trickle filters for Port Adelaide wastewater system

A $2 million-plus system to reduce and manage odour from the Port Adelaide Wastewater Pump Station was completed in December 2018.

The solution was implemented to benefit local residents and with a similar system already in use at our Parafield Gardens facility, it has proven to be a highly-effective filtering system that benefits odour management. It has a three-stage bacterial odour control process requiring the installation of a 12.1 tonne, 13-metre-high bio-trickling filter and three smaller bio-filters.

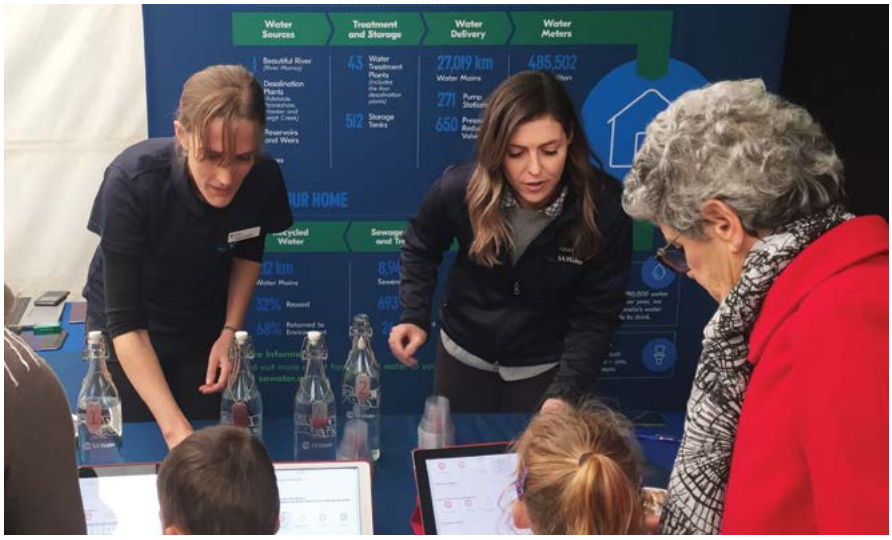
The bio-trickling filter uses bacteria to remove the odorous gas from the wastewater. As the air rises through the tank, water feeds the bacteria which eats away at the odour and eventually releases treated, clean air through the top of the unit.

Receiving an average of 22.5 million litres of sewage every day, the Port Adelaide Wastewater Pump Station is a vital facility serving more than 30,000 homes and businesses in Adelaide's western suburbs.

Throughout, the design and installation process, we worked together with the local community to keep them updated and ensure their expectations were met.

Below: The refurbished Largs North Wastewater Pump Station.

Right: Customers on the Eyre Peninsula take the tap test at the Cleve Field Days.



Improving sewerage services in Adelaide's north-west

The upgrade of sewerage services in north Le Fevre continued in 2018-19, as part of the $12 million works to support future growth in this area.

This project includes refurbishment of the Largs North Wastewater Pump Station and installation of about 4.5 kilometres of new sewer main connecting this site to its counterpart in Ethelton.

It has been undertaken to ensure we continue to provide a dependable sewerage service for our customers as the local area grows through new developments. There are additional benefits with improved odour management and reduced potential for overflows.

The new pipeline was installed in early 2019 and works are due to be completed in 2019-20.

Improving water aesthetics

In 2018-19, we undertook a number of initiatives to improve our customers perception of drinking water quality. Our ongoing work in this area has seen customer satisfaction with drinking water quality lift to 74 per cent in 2018-19, up from 68 per cent in 2017-18.

Technical improvements included:

- Changing the disinfection process for the Myponga township's water supply from chlorine to chloramine. This had a positive impact on customer perceptions of the taste and smell of their drinking water.
- A more proactive and effective addition of powdered activated carbon at water treatment plants to remove the earthy/musty taste and odour that can be associated with algal blooms at surface water reservoirs.
- Proactive flushing of key areas of the metropolitan Adelaide network to remove pipeline sediment and reduce the number of dirty water occurrences customers may experience.
- A pipeline connecting Warooka, Point Turton and Orroroo to our River Murray supply and improving the quality of drinking water in these townships.

Engagement with our customers continued including:

- *Take the Tap Test*, and *You Be the Judge* activities, giving the community the opportunity to taste and provide feedback on tap water sourced from various parts of South Australia. Analysis of this feedback continues to improve our understanding of the water tastes and smells our customers prefer, which helps inform future investment in our water network and treatment management.
- Proactive media to improve our customers' awareness of drinking water quality management and the benefits of drinking tap water.
- The installation of ten drinking water fountains in the community this year, following installation of four in 2017-18.

Trade waste servicing goes digital

Management of grease arrestor servicing has improved with the development and rollout of an app for use by liquid waste haulers, improving trade waste customer monitoring and compliance.

In 2018-19, the grease arrestors and settling pits of all trade waste customers were tagged with a code haulers use to collect pumping information. The new system provides us with data on the pump out frequency enabling us to better manage each customer's compliance with trade waste discharge authorisation conditions. Customers who are not servicing their grease arrestors, or whose pre-treatment devices are not compliant will be readily identified for follow up by our Trade Waste team. Improved monitoring and compliance also helps reduce the number of fat chokes in the sewerage network associated with poorly serviced or absent grease arrestors.

Liquid waste hauler companies received training to use the new system which came into effect 1 July 2019.

Ensuring service continuity and support when things go wrong

The Service Continuity team has continued to develop its capability to respond to temporary service interruptions. Since January 2019, the team has been operating 24/7 providing a dedicated service and enhanced customer experience across the state.

To achieve this, we have:

- Recruited and cross-trained our people in the new Service Impact Management role.
- Created a single, multi-function centre which manages fault calls, scheduling, dispatch and monitoring of work, data and information management, and reporting.
- Created a single point of contact to coordinate a statewide service for our customers and the community.
- Embraced new technology available through our customer relationship management systems which provides us with a single view of customers, work and available resources.
- Improved notifications for customers experiencing temporary service interruptions.

With the service continuity initiative completed in April 2019, improvements now continue as part of our normal business operations.

Price increase held to CPI

The 2019-20 water and sewerage price adjustments were capped at 1.3 per cent on average, to reflect the Consumer Price Index (CPI)*, and our ongoing commitment to keeping water and sewerage prices for South Australians as low and stable as possible.

The average metropolitan residential customer receiving water and sewerage services will see an annual increase of about $16**.

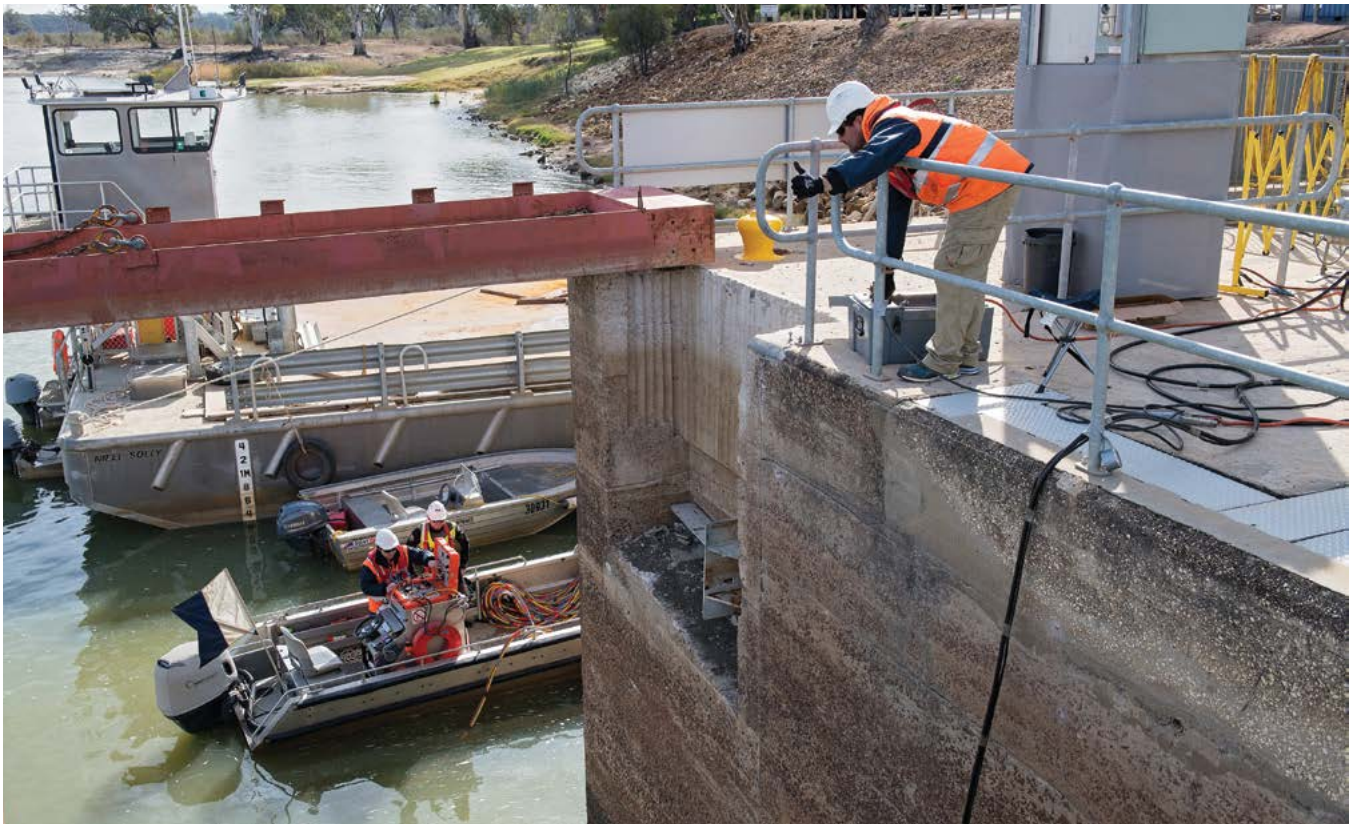
Prices take into account a range of factors, including the cost to provide, sustain and enhance the delivery of water and sewerage services across the state.

Statewide pricing ensures most of our customers pay the same price per kilolitre of water, no matter where they live or the actual cost of providing the service to that location. Sewerage prices, based on the capital value of a customer's property as set by the Valuer-General, are also designed so average bills are as consistent as possible across the state.

Our performance compares favourably with our interstate counterparts. Our annual residential water and sewerage bill (based on 200 kilolitres) was the eighth cheapest among 15 similar-sized Australian utilities, according to the Bureau of Meteorology's *National performance report 2017-18: urban water utilities*.

* *March Consumer Price Index, All Groups Index Number (weighted average of eight capital cities) published by the Australian Bureau of Statistics, to align to ESCOSA's 2016-20 revenue determination.*

** *Based on the average metropolitan residential water use of 184 kilolitres and property value of $467,000.*



The refurbishment of Lock 3.

Maintenance on the Murray

From July through to September 2018, work to upgrade the Tauwitchere Barrage Lock at the Murray Mouth was undertaken as part of the essential maintenance schedule on behalf of the Murray-Darling Basin Authority.

The barrage is one of the little known structures along the River Murray with only about 250 boats and other vessels navigating through each year.

At about 3.5 by 13 metres, it is one of the smaller structures, yet it plays an important part in the wider river system.

It is a small hand-operated lock which is very rare in Australia. The lock upgrade was undertaken to make the operating procedure quicker and easier.

Work included the installation of new valves to reduce opening and closing times by up to 80 per cent, and repainting the lock chamber gates.

Tauwitchere is one of five barrages, as part of the wider Goolwa Barrages system, which extends from Sir Richard Peninsula in the west to Pelican Point on the northern side of the Murray Mouth. The other barrages include Goolwa, Mundoo, Boundary Creek and Ewe Island.

Further up the river, Lock 3 at Overland Corner was re-opened for navigation in September 2018, following the completion of a $700,000 refurbishment of the River Murray structure.

In just three months, our teams:

- repainted lock gates
- replaced gate seals and bottom fenders
- rehabilitated upstream and downstream valves and tunnels
- replaced all cathodic protection systems.

The lock was emptied while these sustainment works were completed and then gradually refilled in September to its usual eight million litres of water.

Ensuring information security

We continue our investment in cyber security and verified our performance standards by engaging in regular external reviews and testing. In 2018-19, Board Directors, General Managers and Senior Managers participated in specialised cyber security training.

Build organisational resilience

To embed our organisational resilience, we have developed a Resilience Capability Plan which is now being implemented.

This work strengthens and improves our mitigation and management of disruptive events and incidents to create opportunities for continual improvement to the reliable services we provide to our customers.

The plan focuses on developing maturity in:

- organisational awareness
- planning and decision making
- risk and governance
- performance management
- communication
- major incident management and technology tool
- business continuity
- training, exercises and lessons learned.

In 2018-19 we have:

- Shifted our thinking towards a holistic organisational resilience approach.
- Built resilience into all levels of our corporate planning process.
- Brought the risk and resilience teams together and begun the process to integrate our risk and resilience frameworks to include temporary service disruption-related risks, in accordance with AS/NZ 5050.
- Started building resilience into relevant performance management measures.
- Communicated with key groups within the business to build awareness about resilience.
- Introduced a simple method for managing major service interruptions and trained key senior leaders in how to apply it.

Improved asset management

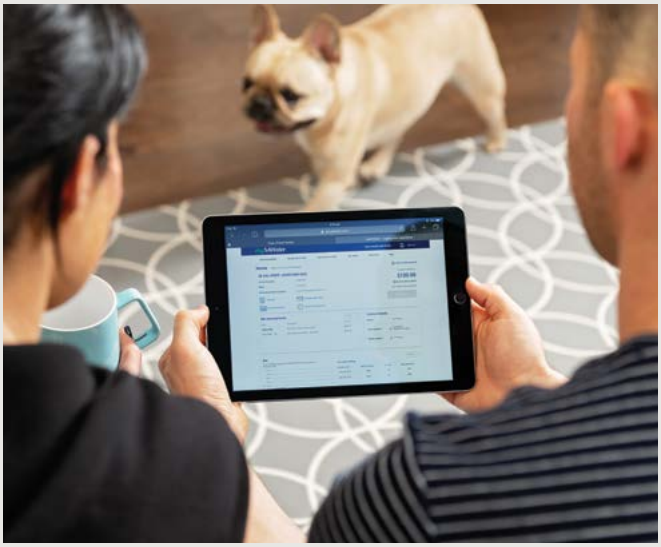
Work continued in 2018-19 to embed our Asset Management System and integrate it across the business. This follows recent work to increase the maturity of our asset management.

Our strategic asset management approach ensures performance is continually reviewed and improved. A team realignment this year, and the creation of an Asset Management System team, support delivery of this initiative as we embed the system into our business.

Maturing the way assets are managed helps us strengthen the customer and stakeholder experience by maintaining the desired levels of service and raising the value of the services we provide, without increasing our expenditure.

WORKING TOGETHER

As a team, our productive, respectful relationships with customers, regulators and other stakeholders are central to delivering valued services. Understanding and supporting our customers is vital.



Customers are increasingly using digital and self-serve channels we offer.

Better understanding our customers

Our customer profile groups continue to be used across the business to help us plan, and tailor products, services and communication for our customers.

In 2018-19, we had a particular focus on understanding the needs of people living with a disability so we could better respond to and meet the needs of these customers.

Following discussions with the Department for Human Services and the South Australian Council of Social Service, we facilitated a survey plus one-on-one meetings with customers who live with disabilities and their carers.

Through this research we built an understanding of the challenges and experiences these groups face, and we mapped four focus areas where we can make changes to help make their lives a little better:

1. customers with high needs
2. communication challenges
3. high information needs
4. assistance with tasks.

Up to 15 initiatives have been identified to provide service solutions for these customers, with some already being implemented and others requiring investment over time. They range from a language aide program for customers using Auslan and other alternate languages, to investigating ways to reduce the anxiety that many people living with a disability face when answering the door.

This initiative was presented at Ozwater'19, the Australian water industry's major annual conference, and awarded best paper, acknowledging its national significance.

Customer profile work continues to evolve and inform the services we provide. Work to expand profiles beyond residential customers began and we conducted extensive research of our business customers to better understand their water and wastewater service needs.

Digital services for customers

In 2018-19 we implemented a customer relationship management system which enables improved customer experience when people interact with us, including account inquiries and service issues.

Direct debit by credit card and self-serve payment arrangements are now available by simply calling us, in addition to the self-service offerings of *my*SAWater.

As at 30 June 2019, there were 91,787 customers across 100,847 properties registered for eBills, either as a direct arrangement or through *my*SAWater.

Our customers' use of digital channels continues to grow with self-service transactions through *my*SAWater growing nearly 90 per cent up from 79,312 in 2017-18 to 150,368 in 2018-19.

Supporting customers with bill payments

The needs of our customers continue to change and we are committed to adapting and responding to deliver the services and support they need and value.

Through our Customer Assist Program we work together with people experiencing financial difficulties and agree a bill payment plan.

During 2018-19, there was an average of 1,770 customers per month participating in the program, with 954 customers successfully completing the program and returning to paying their bills quarterly.

Additional financial assistance was available to eligible customers participating in the program through incentive co-contribution payments. This financial year we began work to automate this payment support program which helps customers to complete the Customer Assist Program and return to regular bill payments.

Customers inform future planning

Building on our customer research and engagement work in 2017-18, this year we worked with customers in two significant engagement phases. This customer feedback is informing *Our Plan 2020-24* (Our Plan), which will detail how and what we plan to deliver for customers in the next four-year regulatory period.

Our customers have helped shape future focus areas, which are in addition to the services we are required to provide to meet our legislative and regulatory responsibilities.

From July to October 2018, our Customer Working Group, comprising 22 customers, focused on draft proposals we developed using feedback received in previous stages of customer engagement and workshops.

Insights from the *What matters to you?* survey, which ran from April to May 2018, were used to prepare business cases for initiatives which customers told us they value and support.

Working together with the Customer Working Group, we shared, discussed and deliberated items including service level priorities that were tested in *What matters to you?*, and proposed service standards to ensure Our Plan is aligned with our customers' values and priorities.

Following this, from November 2018 through to May 2019 we did further work to understand where our customers want us to invest. Through the online survey — *Would you invest in this?* — in excess of 6,000 customers took the opportunity to have their say on five initiatives proposed for inclusion in Our Plan.

Survey responses helped us understand if customers were willing to pay for five proposed investment projects. This feedback informed the ongoing negotiation process being managed by the Essential Services Commission of South Australia (ESCOSA) and the final drafting of Our Plan.

As well as online engagement opportunities, in September 2018 we engaged customers at the Royal Adelaide Show, with more than 400 people completing our quick poll survey.

Our Plan will be submitted to ESCOSA in October 2019.

Building our reputation in the community

To ensure we keep our customers well informed, a series of training masterclasses were provided to nearly 200 of our people so they can provide more effective, meaningful and timely communication. In addition, we made information about the breadth of our operations behind the scenes and day to day more available to our customers and community through traditional and social media.

The Customer Working Group deliberated on service level priorities.

The *Bring Your Own Bottle* (BYOB) community education campaign got underway in 2018-19 to reduce reliance on expensive bottled water and reduce plastic waste. The campaign is supported by the beginning of the rollout of drinking water fountains, with the installation of six fountains at Adelaide Oval. In addition, numerous local councils have embraced the opportunity to install a fountain for the benefit of their local community and visitors, with more details below.

Development of a BYOB app is underway to help people more easily find locations to have a drink or refill their bottle with our clean, safe drinking water for free. Information from metropolitan and regional councils is expected to be released in the second half of 2019 with more than 1,000 fountains mapped around the state.

Field staff, project teams and contract partners have been supported to effectively build relationships, gather feedback and structure decision making processes. This enables genuine and meaningful opportunities for our stakeholders to understand community needs as we develop and deliver new projects and initiatives.

An increased understanding of our customers is helping us better meet their communication needs. Using developments from our customer relationship management system, we have begun providing customers with more relevant and meaningful communication via their bill. This capability will continue to evolve.

1,000+
free and safe refill locations will be mapped around the state

Above & right: New drinking water fountains have been installed at Myponga Reservoir Reserve and the Adelaide Oval.

New fountains provide more water for drinking

Our network of free drinking water fountains across the state has been expanded with 10 fountains installed in 2018-19, providing more options for South Australians and visitors alike to refill their bottles or stop for a quick drink.

The fountains are all connected to our supply network and feature a modern design 'water window' for easy filling of a reusable bottle. Many also feature a foot pedal-operated in-ground dog bowl which lowers and fills with water for single use, ensuring adequate drainage and clean water every time. They have built-in solar lighting making them bright and easy to find at night.

In December 2018, a drinking water fountain was installed in Kapunda's main street in time for the town's end of year party. It was the first to feature artwork created by Aboriginal artist Paul Herzich, which depicts waterholes specific to Aboriginal groups from across South Australia.

In partnership with Adelaide Oval's Stadium Management Authority, we unveiled six water fountains at the start of the AFL season in March 2019, giving visitors access to free drinking water on the eastern plaza, at the Victor Richardson Gates on the southern side, in the western stand near the Sheffield Shield Room, and on the Northern Deck.

To support access to Myponga Reservoir Reserve, which opened in April 2019, two water fountains were installed with one in the reserve and one in the town's park. In June a fountain was installed outside SA Water House in Victoria Square/ Tarntanyangga for people out and about in the city.

There are clear environmental and economic benefits of choosing tap water and with a growing network of drinking water fountains across the state, we are helping our customers build a healthy habit by bringing their own reusable bottles.

2,099
people toured the Adelaide Desalination Plant and Kauwi Interpretive Centre

11,912
students participated in the Brainwave program

120,000L
of drinking water provided by the Quench Benches to 1.8 million people

210,000+
600mL single-use plastic bottles saved from use

Community programs and events

In 2018-19, our community and education program provided learning opportunities including:

- 11,912 students and their teachers participating in our Brainwave program learning about the importance of water as a resource, the water cycle, ways to overcome scarcity and how we can all contribute to sustainability.
- 2,099 people toured the Adelaide Desalination Plant and Kauwi Interpretive Centre.
- 677 people attended community presentations about water services and toured our treatment plants.
- Our Quench Benches proved popular providing more than 120,000 litres of drinking water to about 1.8 million people at more than 150 public events across South Australia. This is equivalent to saving more than 210,000 single use 600ml plastic bottles.
- More than 8,000 people stopped by and talked with us about water services as well as ask us questions at events including the Royal Adelaide Show; Eyre Peninsula, Riverland and South East field days; and the annual *Science Alive!* exhibition.

The Quench Benches were used by more than 1.8 million people around the state in 2018-19.

Partnering with the community

Through our Community Partnerships Program, we supported 17 grass-roots not-for-profit organisations deliver programs in their local communities.

Among the initiatives delivered was Uniting Country SA's Itchy Emu Clinic in Port Augusta. The clinic provides free head lice treatment for local children, tackling the problem of nits through a chemical-free treatment and a fun educational program to help inform parents and school-aged children about how to prevent infestations.

On the Eyre Peninsula, a 27,000 litre rainwater tank and guttering was installed as part of a water harvesting project at the Elliston Community Sports Centre. The captured water is used in the toilet and shower facilities. The centre hosts functions, community groups and more than 40 sporting and social teams so wanted to ensure its facilities could support a more sustainable water future.

In January 2019, more than 300 people took part in Can:Do 4Kids' annual client end of year celebration which provides a safe and inclusive environment for children with sensory needs to improve their aquatic skills. As well as being the primary partner for the event, we provided portable drinking water fountains and re-useable water bottles.

Rosetta Street Greening, a group of West Croydon residents, came together to green the space alongside the train line on Day Terrace. Their Bee and Butterfly waterwise garden was planted in May 2019, with our support providing two new water connections to irrigate the garden.

Building our state's women in STEM

In March 2019, we announced an important partnership with the University of Adelaide to support career and development opportunities for women in the fields of Science, Technology, Engineering and Mathematics (STEM).

Our sponsorship of the University's 2019 Women in STEM Careers Program, helped 100 women throughout the year through access to workshops focusing on leadership, career development and entrepreneurship.

Supporting one of the largest leaderships for female STEM students in Australia aligns with our ambitious target on the number of female graduates joining our business — 60 per cent by 2024.

This goal is within reach with women making up more than half of our current STEM graduates and 43 per cent of total graduates.

Crystal Brook students have the smarts on water

Crystal Brook Primary School is one of 10 South Australian schools participating in our Smart Water Schools program.

Through the program, students have access to a secure portal gathering real-time information from loggers attached to their site's smart water meter.

Students from Crystal Brook Primary School showed they have the smarts on water management when they presented findings from their smart water meter study to members of our executive team in August 2018.

The school's smart meter began delivering water and cost savings shortly after it was installed, helping find a malfunctioning water timer on the school's irrigation system, which was always on and unnecessarily using up to 11,000 litres a day.

Popular with both students and teachers, the smart meter project links to the Australian Curriculum across Science, Technology, Engineering and Mathematics.

Top: Rainwater tanks installed at the Elliston Community Sports Centre.

Middle: The Bee and Butterfly waterwise garden in West Croydon.

Bottom: Students from Crystal Brook Primary School presented results from their work as part of the Smart Water Schools program.

Improving customer service for developers

To better support developers and growth in South Australia, in 2018-19 we made improvements to account management services and access to our people and information. These include:

- A single point of contact for major developer customers providing a quick response when they need help.
- A new process for disinfection of assets constructed by developers which resulted in better understanding of the responsibilities of everyone involved.
- Case managers allocated to land development applications giving customers a direct relationship with our people who deal with their application.
- Improved access to AquaMap — a system that provides map-based information about our network — is now available making it easy for developers to access network information as they undertake preliminary design work.

In addition, an online service for developers has been scoped ahead of further work in 2019-20.

Land subdivision billing changes

This year we worked with conveyancers and the development industry to change how customers are billed following the subdivision of land.

Acting on feedback from customers and developers, we reviewed the practice which resulted in charges remaining on one billing account through to the end of the financial year, regardless of when a subdivision had taken place. This system was based on the timing of land valuation information received from Land Services SA.

Conveyancers play an important role in calculating settlement payments when a property is subdivided and sold, yet customers who sold newly subdivided blocks would continue to receive SA Water bills with charges that no longer belonged to them.

Our Billing team re-engineered the process to ensure property owners who sell do not receive a bill for the property for the remainder of the financial year after they sell. It also enables the new owners to monitor their water use from the time they buy the property instead of from the next financial year. All process and system changes were made, ready for full implementation from 1 July 2019.

Outback towns join our supply network

The drinking water supply to Copley and Lyndhurst in South Australia's far north came under our management from August 2018.

Migrating the full provision of water services to our operations followed ongoing engagement with the previous water providers and the local communities. Residents and businesses in both towns were supported through the transition to becoming SA Water customers.

Ongoing water use charges for the 73 new customers in Copley and Lyndhurst have moved to our statewide price, which enables most of our customers to pay the same price regardless of where they live or the actual cost of providing the service.

As with all our residential customers across the state, these communities now benefit from a 24/7 customer response service, access to bill payment support when necessary, and network maintenance provided by a locally-based crew.

Drinking water for both communities continues to be sourced from an existing series of bores near Leigh Creek, which is then desalinated and treated to meet the Australian Drinking Water Guidelines.

Future water supply for Eyre Peninsula

In 2018 we reactivated plans to enhance the Eyre Peninsula's drinking water supply network with a proposed new seawater desalination plant.

A new seawater desalination plant was identified as the preferred option to supplement future supply in a long-term plan developed with the local community and Natural Resources Management Board in 2008. Community engagement was integral to the development of this plan.

This financial year we have worked with the region's residents to share details of the plans and receive their feedback to help us as we develop the proposal. Community open days were held in November 2018 in Port Lincoln, Ceduna, Wudinna and Cowell.

Water produced from the proposed desalination plant would supplement groundwater from the Uley South Basin, and may help improve water aesthetic issues such as hardness, a natural characteristic of the region's groundwater.

A site at Sleaford Bay was identified as the preferred location for a stand-alone desalination plant, based on a number of factors including its proximity to the water supply network, strong ocean currents and accessibility.

Targeted community meetings with traditional and local property owners began in late 2018 to share our planning and investigations associated with the proposal and to talk through site-related issues.

Engagement with the Eyre Peninsula community will continue throughout the planning and construction phases to ensure their interests are being accounted for and opportunities for local knowledge is identified to add value to the delivery of the project.

Left: Sleaford Bay has been identified as the preferred site for a proposed seawater desalination plant for the Eyre Peninsula.

Top right: The main under King William Road was relocated in May and June 2019.

Bottom right: A new supply of recycled water is supporting the expansion of businesses in the Adelaide Hills.

Water main move supports King William Road renewal

To help facilitate the City of Unley's redevelopment of King William Road, we relocated about 200 metres of water main under the Hyde Park strip during May and June 2019.

Overnight works kept community impact to a minimum enabling the free flow of traffic during the day and avoiding peak trade periods for businesses on Friday and Saturday nights.

Key to this project's planning was working with businesses in the area and understanding their individual water needs.

The relocation enables the City of Unley to install new kerbing without damaging our infrastructure and ensures safe access to the water network for any future maintenance.

Recycled water supporting economic growth in the Adelaide Hills

Recycled water supply in the Adelaide Hills is providing great economic and environmental value, while ensuring security of supply and underpinning local business growth.

A new supply of recycled water from our Gumeracha Wastewater Treatment Plant is supporting the expansion of businesses in the Adelaide Hills.

Leading South Australian apple grower Joyson Orchards harvested their first premium Rockit apple crop in autumn 2019, just four years after expanding, enabled by recycled water.

By adapting existing vineyard infrastructure with industry-leading growing techniques, and direct drip feed irrigation, the business is building a resilient and sustainable food production system to meet local and national demand. Growth in the business resulted in two additional full-time jobs and up to 45 seasonal positions.

In 2018-19 we also began working with the community in Hahndorf to explore prospective uses for high quality recycled water from the Hahndorf Wastewater Treatment Plant.

The local community was invited to participate and submit ideas through our Water Talks website as we look to expand our already extensive recycled water network.

The public responded positively with many parties keen to explore the opportunity in more detail. A sustainable approach to the reuse of water is important to South Australians and we will continue to work with customers to develop options for recycled water use in the Adelaide Hills.

Any reuse scheme from the Hahndorf treatment plant will likely be operational within the next four years.

Below: District Leader Port Pirie and Crystal Brook Shaun Northcott and Manager Customer Field Services Darren Walker at the new odour dome in Port Pirie.

Right: The vehicle being lifted out of the Blue Lake/War War by crane.

Port Pirie sports new odour dome

A collaboration with the Port Pirie Regional Council has helped ensure the success of the town's reinvigorated Memorial Oval sporting complex, thanks to the installation of an innovative fibreglass dome above the site's wastewater ventilation.

With the oval's proposed two-storey function centre to be built just 15 metres from an existing wastewater vent, the team at our Crystal Brook workshop found an innovative solution to ensure visitor comfort.

To minimise potential odour impacts and ensure visual amenity, a unique one metre green fibreglass dome which uses charcoal to filter odour and gas from the wastewater system, proved the best solution.

Council installed a timber fence around the perimeter of the dome which helps screen the facility while still providing full and easy access for us to maintain the equipment.

Working closely with Council, having early discussions and understanding what we each needed to achieve was key to delivering the best technical solution, and great outcomes for the complex and its thousands of visitors every year.

Car retrieved from Blue Lake/War War

In September 2018 our Mount Gambier-based team, together with crane and diving experts, safely removed a partially-submerged vehicle from the south-east's iconic Blue Lake/War War.

The car had been floating in a secure, sectioned off part of the reservoir, following an incident in early August.

The retrieval was a complex and delicate process which required considerable planning. The safety of the community and our people was at the forefront during the process.

A dive crew floated the vehicle around 200 metres to the retrieval area, before it was lifted out of the water by a 220 tonne crane with a 71-metre arm, which was situated on a higher level within our pumping station site.

Mount Gambier's drinking water supply was switched to being sourced from the local bore field during the retrieval as a precaution.

Quick response ensures customer supply on Eyre Peninsula

In February 2019 crews from across the state responded when a truck damaged a water pipeline near Poochera on the western Eyre Peninsula.

A road train collided with an above-ground water pipeline on the Eyre Highway causing damage to about 170 metres of pipeline that delivers water to Ceduna and Streaky Bay. Our crews acted quickly, working together to ensure the situation did not affect supply to these major towns.

Water stored in tanks near Ceduna, Smoky Bay and Streaky Bay ensured ongoing water supply to customers in the three townships, with an alternative water supply available for our approximately 100 farming and residential customers in Poochera.

The repairs proved a large and complex job, with crews coming from a number of our Eyre Peninsula depots and welding teams mobilised or on standby from Crystal Brook, South Para and the Riverland.

About 25 people worked safely and swiftly throughout the weekend to ensure local customers could access water.

LEADING THE WAY

To achieve our vision, we must be national and global leaders giving our customers confidence we are innovating to achieve outcomes for them. As a leader in South Australia, we support our local community and economy.

Leading reconciliation

Our stretch *Reconciliation Action Plan 2017-20* (RAP) guides our reconciliation actions and in 2018-19, we achieved in a number of areas detailed below and in the following report items.

Working together with remote communities we have completed a project for wastewater reuse and greening of the Amata oval to AFL standard. Upgraded infrastructure at Watinuma has been commissioned, see *APY Lands upgrades for a better life* (page 23) for details of these upgrades.

In September 2018, the innovation space in SA Water House was named Kurlanaintyerlo with the assistance of the Kaurna community, a Kaurna word meaning on the crest of a wave. The word and its meaning guided the design of the space which is an adaptable area suitable for a range of activities and aims to help us challenge the status quo.

In addition to SA Water House, the Aboriginal and Torres Strait Island flags are now installed at our offices in Port Lincoln and Crystal Brook.

Tia Tuckia, Warevilla and Yarilena homelands have been supported with community infrastructure matters throughout the year, including leak detection and fixes.

At the end of June 2019, 57 per cent of our RAP actions have been delivered.

Education and training opportunities in Aboriginal communities

Through education and training, we worked with communities and groups across South Australia including:

- Facilitating 15 plumbing courses on the Anangu Pitjantjatjara Yankunytjatjara Lands with more than 40 students and community members learning plumbing basics to increase sustainability by fixing leaking taps.
- An Aboriginal education program, which we deliver in partnership with KESAB *environmental solutions*, with a focus on teacher training for Anangu educators to enable community ownership and delivery of the program. The program is linked to curriculum and promotes the value of water and encourages sustainable use. This year we partnered with the South Australian Museum and took Anangu students to local water holes to test water quality and build their understanding of safe drinking water. The program was also delivered to Aboriginal communities on the far west coast.

Top left: The green Amata oval.

Bottom left: One of 15 plumbing courses for students and community members on the Anangu Pitjantjatjara Yankunytjatjara Lands.

Right: Testing water quality at water holes on the Anangu Pitjantjatjara Yankunytjatjara Lands.

- Involvement of Aboriginal and Torres Strait Islanders from within our business in the STEM Aboriginal student congress, which attracted more than 500 students from 140 schools. The congress engages Aboriginal students in years five to 10 through a range of interactive, challenging and culturally relevant experiences to encourage more Aboriginal students to choose STEM subjects in years 11 and 12. We provided a tour of the Kauwi Centre and Bush Tukka Garden at the Adelaide Desalination Plant, and delivered our Sustainability Challenge education program.
- Partnering with Volunteering SA to deliver our twinning program which matches Aboriginal not-for-profit businesses with skilled people to work on short-term, high-impact projects.

Reconciliation Week 2019

During National Reconciliation Week, 27 May to 3 June 2019, we hosted nine events for our people across the state aligned to the theme: grounded in truth walk together with courage. Activities included Kaurna language sessions for people based in SA Water House helping to bring Aboriginal culture to the forefront of our work.

In Mount Gambier, newly installed paintings and signage were unveiled, giving the Blue Lake its traditional Boandik name: War War. War War means 'the sound of many crows' and reflects the crow Dreaming of the Boandik people, who are the Traditional Owners of the Mount Gambier region.

Recognising and acknowledging the lake's name and story is a step towards revitalising culture and reforming the community's connection with Country.

Dual naming, and use of local Aboriginal languages, including Kaurna lessons during National Reconciliation Week, aligns with 2019 being designated the UN Year of Indigenous Languages.

Top: Barngarla artwork on the pipeline near Port Lincoln.

Bottom: Boandik Elder Aunty Penny Bonney, Boandik artist Belinda Bonney and Boandik Elder Aunty Valda with the painted panels at Blue Lake/War War pump station.

Connecting with communities through art

A 40 metre section of the above ground water pipeline near Port Lincoln was painted with an artwork we commissioned depicting the importance of water to the Barngarla people.

Several members of the Barngarla Aboriginal community worked with local school students in early 2019 to design and create the art, which was unveiled to the wider public during National Reconciliation Week.

The painting tells the story of the goordla gawoo ngaoowiridi — fresh water cycle. It shows the strong relationship Aboriginal people have to water and their connection to the sea, the animals and plants that rely on it, and how water was and continues to be used to sustain life.

At Beetaloo Reservoir in the state's mid-north, an artwork by Nukunu artist Jessica Turner was installed in September 2018.

Erected at the reservoir's public lookout, the colourful artwork titled 'Wobma' details the cultural and spiritual relationship the Nukunu people have with land and water in the Spencer Gulf and southern Flinders Ranges.

Working together with the Burrandies Aboriginal Corporation, Boandik community artists and Elders, as well as several local school students in Mount Gambier, four panels were painted to tell the story of Craitbul, the giant Boandik ancestor. These floor to ceiling pieces are now on display inside the Blue Lake/War War pumping station.

Digital stories capture water wisdom

Working with the Barngarla people (Port Lincoln to the far west coast), the Kaurna people (Adelaide), and the Boandik people (Mount Gambier), we produced digital stories about Aboriginal innovation, management and treatment of water.

By capturing important insights and knowledge about how water was used and managed by the first Australians, we can respectfully convey the understanding and practice of sustainable water management, and how it has shaped spiritual and living connection to Country and, importantly, how it can influence contemporary water management practices.

It is hoped Water Wisdom will build understanding and appreciation of the significant innovations and technologies developed and used by Aboriginal people for thousands of years. Documenting this knowledge ensures it can be made available to the wider community and future generations to keep culture and knowledge alive.

To keep the knowledge of Kaurna people alive, their knowledge about key water sites and resources on the Adelaide Plains is being gathered and captured to form a cultural water knowledge database on how water ways were used and managed.

Supporting Aboriginal businesses to grow

Continuing our efforts to support the growth of South Australian Aboriginal businesses, we brought 24 Aboriginal-owned businesses together with our tier one construction partners in October 2018.

At our inaugural Aboriginal Business Forum, everyone learned more about the challenges faced by major contractors and Aboriginal businesses, and had the opportunity to establish or foster effective working relationships.

This supported our commitment to reconciliation, by bringing people together, promoting equity and working to find the best outcomes possible for Aboriginal and Torres Strait Islander people through economic development and business opportunities.

In 2018-19, our direct spend with Aboriginal owned businesses was nearly $500,000 and the indirect spend was in excess of $3 million. Contributing to this has been the Aboriginal Business Forum, greater awareness among our people about Aboriginal businesses, and updates to procurement methodology and plans to support commitments in our Reconciliation Action Plan.

Vera Richards, Jack Buckskin, Kaiden Richards and Emma Richards share their water wisdom during filming at Port Lincoln.

Below: With smart meters installed, Penneshaw residents and businesses can monitor their water use online.

Right: Advanced smart water network technology is improving network management and maintenance.

Getting smarter across the state

In 2018-19, the installation of advanced smart water network technology expanded to four targeted locations in metropolitan and regional areas of South Australia, building on the successful trial in the Adelaide CBD.

This technology enables us to identify and proactively fix a number of fault types before they affect our customers or inconvenience commuters.

As the smart network in the CBD continues to evolve, we are further refining its operation, including how to use the data to best effect in network management. With the CBD implementation bringing benefits for our customers through network management improvements, the technology is now being expanded.

An analysis of our water network identified Athelstone, North Adelaide, Penneshaw and Port Lincoln as appropriate areas to extend our smart water network. The type of technology installed at each location differs, depending on the issue being addressed.

Athelstone has a relatively high rate of water main breaks due to some of the most reactive clay soils in Adelaide, coupled with high supply pressure as a result of the area's topography.

To help combat this, we installed a pressure modulating control station, as well as sensors to monitor the pressure and sound activity within the network. Using data from the sensors we can use the control station to remotely measure and maintain a stable water pressure in the network at varying periods of demand through the day.

We have also installed several sensors along a large trunk main on Gorge Road in Athelstone to reduce the impact of breaks and leaks on commuters in this high traffic area.

In total, 35 pressure sensors (including 15 transient loggers), 19 flow meters, 120 acoustic leak detection sensors and two water quality sensors were fitted across the four locations.

Penneshaw benefits from smart network expansion

In late 2018, people living in Penneshaw were our first residential customers to access smart technology en masse with the installation of about 300 smart water metres at residences and businesses in the Kangaroo Island township. Flow and pressure sensors were also placed at key points in the broader local network as part of our smart water network expansion.

As with customers participating in the smart water network trial in the Adelaide central business district, customers in Penneshaw are using these smart meters to monitor their water consumption through a secure, online portal.

The smart meters send water use information to the portal every hour with customers able to opt in to receive text message or email notifications about water use or inconsistencies, on a daily, weekly or monthly basis. This interconnected system has helped customers identify leaks and other faults in their plumbing which may have resulted in high water use, had it not been detected by the smart meter.

Smart meter data is also providing us with a holistic view of Penneshaw's water needs. The two flow and pressure sensors have the ability to help identify any network water losses and inform our operational, planning and investment decisions.

The trial in Penneshaw will continue through to August 2019 and guide wider smart network investments.

Smart water network wins global prize

Our world-leading adoption of smart water network technology was recognised with a bronze prize at the International Water Association's Project Innovation Awards held in Tokyo in September 2018.

The smart water network trial in Adelaide's CBD edged out 160 entries from 45 countries in the *Smart Systems and the Digital Water Economy* category, cementing our position as an international leader in integrating digital and smart technologies for the benefit of customers.

The network, implemented in a $4 million trial, combines acoustic sensors, pressure and flow data, high speed transient pressure sensors, smart meters and water quality sensors to identify potential leaks and trigger intervention before leaks or breaks escalate to inconvenience customers or commuters.

Smart sewers

Stonyfell and Gawler are the two locations in our $5 million trial of advanced smart sewer technology, which aims to reduce the incidence and impact of sewerage network faults and issues for our customers and the wider community.

In Stonyfell, our focus is on detecting sewer pipe blockages to prevent overflows either inside or outside homes, which occur in the Adelaide foothills suburb at a higher than average rate than other areas.

The smart technology complements existing ongoing sewer maintenance programs by enabling a more targeted approach. We are one of the first Australian water utilities to use the technology in a comprehensive whole of suburb approach.

The sewer system in Stonyfell has been fitted with flow and level sensors, which monitor the movement of sewage in the pipes. This gives us near-real time information on where a blockage is, making it easier to despatch our crews to fix it, well before it affects our customers.

In Gawler, we have installed odour detection sensors and weather stations to better understand the behaviour of odour in this part of the network and how we can better manage the issue over time.

In total for the wastewater network, there are 88 level sensors, 88 odour detection sensors and 11 weather stations.

The combination of technology across both our water and wastewater networks, a world-leading analytics platform and the expertise of our smart network team is giving us a more detailed view of our underground systems than ever before, and helping us continually improve.

This trial was named the Best Industrial Internet of Things Project at the 2019 Internet of Things Awards, acknowledging our pioneering work in the rapidly evolving field of smart networks.

Woolpunda takes out top gong in state water taste test

Water produced from Woolpunda Water Treatment Plant was awarded best tasting tap water in South Australia at the Water Industry Operators Association of Australia annual competition in August 2018.

Woolpunda was one of 14 samples from across the state judged by a panel of water industry experts and interested members.

The competition showcases South Australia's drinking water, acknowledging the somewhat unsung work of water operators, and getting people talking about tap water.

Top: A smart sewer sensor installation in Stonyfell.

Bottom: Woolpunda Treatment Plant Operator Greg Haynes with the state's top drop.

Left: The solar array at Glenelg Wastewater Treatment Plant.

Below: Solar panels installed at Hope Valley Water Treatment Plant.

Growing innovation

Improving, refining and innovating are helping us lead the way in the water industry.

In 2018-19, our *Innovation Speaker Series* continued to expose us to fresh ideas and approaches, with presentations from Queensland Urban Utilities, the University of Adelaide and Uber.

People from all areas of the business also came together to develop a framework for growing our people's ideas. Since forming in September 2018, the group has continued to uncover insights into how we create a cultural change to encourage and spread innovation.

The innovation team continued to connect and collaborate across the business on a number of projects including:

- our zero cost energy future
- reimagining water and wastewater master planning
- asset management
- odour approach
- work zone traffic management
- liveability
- integrated utility
- agile working.

A case study of our recent innovation journey was presented to industry peers at Ozwater'19, the national water industry's annual conference.

Creating a zero cost energy future

The idea to create a zero cost energy future was conceived and shaped by our people and is a demonstration of how we are leading the way to integrate renewable energy and storage with the nation's longest water network.

Installation of solar panels was completed at three of our Adelaide metropolitan sites: Hope Valley Water Treatment Plant, Christies Beach Wastewater Treatment Plant and Glenelg Wastewater Treatment Plant.

At Hope Valley, the system achieved savings on electricity costs of 61 per cent in June 2019, down from an average of $21,000 to $8,000.

In February 2019 we appointed Enerven as the contractor to deliver our $304 million investment in solar photovoltaic panels and energy storage. This project will see the installation of 154 megawatts of solar generation and 34 megawatt hours of storage across up to 70 of our sites.

With an energy bill of $83 million in 2018-19, this investment in more than 500,000 solar panels is expected to deliver a return in six years with the view to reducing our costs and keeping water service charges as low and stable as possible over time for our customers.

Construction work will support about 250 jobs, and includes a commitment to engage local Aboriginal-owned businesses evaluated on their competitive rates, as well as apprentice training and opportunities for the supply chain within South Australia.

Remote boats improve sludge management

Two remote-controlled boats are navigating the lagoons of our wastewater treatment plants in a novel and efficient new way to improve sludge management and minimise odour at facilities across the state.

Developed by the University of Western Australia, vessels use sonar navigation technology to remotely survey sludge build-up at the bottom of wastewater lagoons.

Fine sediment that remains suspended in the water after primary treatment stages settles at the bottom of wastewater polishing lagoons to form a sludge, which is then periodically removed to maintain the lagoons' holding capacity and minimise the potential for odour to develop.

A sonar unit scans the bottom of the lagoon and records data to an SD memory card that is then overlaid with a Google Earth map to visually display the sludge depths.

Removing sludge is an important yet often time consuming exercise, and this new technology provides a highly efficient way to accurately survey and know when to de-sludge.

One of the new remote-controlled boats now being used to survey sludge lagoons.

Biosolid breakthrough a boost for farmers

A study undertaken by our Water Expertise and Research team into high-quality organic biosolids this year confirmed a faster timeframe to eliminate pathogens, realising significant benefits to the agriculture and water industries in Australia.

Each year we collect and safely treat about 30,000 tonnes of organic biosolids from our wastewater treatment plants, and we provide it free to primary producers who use it to improve soil quality for crops such as cereals, citrus or vines.

Our research challenged the guidelines to store high-grade biosolids for three years to ensure all pathogenic microorganisms were inactive before delivering the final product. The project demonstrated a better quality biosolid product can be achieved in just one year.

Following an intensive monitoring program for both fresh and aged biosolids of up to 30 months, we detected no additional improvement in the guideline requirements of biosolids tested by extending the stockpiling period beyond 12 months.

This is a significant outcome for both farmers and water utilities across the country, with the potential to reduce costs for on-site storage and deliver a better quality biosolid product to primary producers.

Greenhouse gas reductions inform global guidelines

Our world-leading climate change research has successfully demonstrated an ability to monitor and reduce nitrous oxide emissions by 30 per cent from Bolivar Wastewater Treatment Plant.

Setting a benchmark for treatment plants around the world, the research has also informed the United Nations' greenhouse gas guidelines.

Trialled in partnership with the University of Queensland, the ground-breaking research collected and modelled nitrous oxide through floating 'hoods' anchored along activated sludge plants and pipes through a computer monitoring system, which then analysed the gas in short intervals.

The technology was created using the engineering resources and more than 20 years' expertise of our commercial business unit Water Engineering Technologies, which designs and manufactures customised solutions for water and wastewater utilities across Australia.

The technology developed by the team allows emissions of the gas to be monitored in real time, for the very first time.

The research has been scientifically validated and published in four academic publications, putting us at the forefront of addressing a major problem commonly facing wastewater treatment across the world.

With nitrous oxide having a global warming potential 310 times greater than carbon dioxide, it is vitally important that all utilities work to reduce emissions in their operations without compromising on plant performance.

Misters cool the air at the Tour Down Under Village (right) and TreeClimb in the Adelaide Park Lands (below).

Cooling the community

Riders and spectators at this year's Tour Down Under could escape the extreme hot weather and keep cool thanks to unique new 'cool zones' we created in partnership with race organisers.

Throughout this major event, hundreds of water misting jets provided refreshing blasts of cool air to people visiting the City of Adelaide Tour Village in Victoria Square/Tarntanyangga, and helped them manage the warm conditions experienced during the race.

Following the successful use of misters at the corporate hospitality facility for the Down Under Classic and Women's Tour Down Under, they were installed at the Tour Village for everyone to enjoy.

Using water in different ways can increase the use of spaces and liveability during our hot summers and is an important way we are working to create a better life for South Australians.

The 'cool zones' proved popular and followed trials looking at ways to keep suburban houses and gardens cool, as well as our world-first heat mitigation trial at Adelaide Airport.

A similar misting system was installed at TreeClimb in the Adelaide Park Lands, to help keep aerial adventurers cool over the busy summer school holiday period.

Growth in laboratory services

In 2018-19, the Australian Water Quality Centre (AWQC), our national laboratory service, positioned itself to better meet the current and future needs of water utilities seeking its services. This included building understanding of the national water industry and its needs, and research to inform and shape service development for AWQC laboratories in Adelaide and Melbourne.

Molecular testing services were expanded in the Adelaide laboratory, while the Melbourne laboratory increased its capabilities to include sampling and a wider range of chemical testing services. To support growth in the Melbourne laboratory, new premises were identified ahead of a move planned for early 2020.

The AWQC continued to actively support the national water industry through conference exhibitions, sponsorships and presentations.

At the 2018 Water Industry Alliance Smart Water Awards, the AWQC was recognised for its world-leading molecular services winning the Innovation in Large Organisations Award. The paper by the AWQC's Method Development Coordinator was shortlisted for best paper at Ozwater'19.

In 2018-19, the AWQC actively participated in a number of national water industry conferences including Water Industry Operators Association of Australia, Australian Water Association state conferences in South Australia, Northern Territory and Tasmania, and Ozwater'19.

CAPABLE AND COMMITTED TEAM

Our experienced and capable team consistently lives our values to safely deliver for our customers every day.

Safety and wellbeing of our people

The introduction of a harm based approach to safety in March 2019 has seen a shift in focus from traditional lag metrics to events that could have been life altering, if not for luck. These actual or potential life-changing situations are called diamond events.

As part of this change, we reviewed and modified our approach to incident investigation enabling us to prioritise serious incidents and better focus our resources to prevent the likelihood of recurrences. Harm Based Diamond Alerts are now distributed to our people to share information and lessons from these events, and start safety conversations.

Random drug and alcohol testing began in September 2018. Through to 30 June 2019, we conducted 448 tests with an equal split of regional and metropolitan sites and no confirmed positive results.

In 2018-19 our wellbeing initiatives have largely focused on mental wellness with 25 workshops conducted for people leaders to improve their understanding of how to effectively support our people.

People leaders in the Customer Field Services team have started the Leadership Fundamentals program, which incorporates safety leadership and the principles of our safety framework — engagement and empowerment. All field-based workgroups continue to develop and implement their own safety frameworks.

Our work health and safety asset improvement program has focused on seven high-risk categories:

1. Fall prevention — addressing the hazard of working at height.
2. Hazardous substances — addressing issues identified through site audits relating to working with or near dangerous or corrosive chemicals.
3. Asbestos removal — progressively removing all asbestos containing materials.
4. Wastewater pump station relocation — moving stations located in-road or at the roadside.
5. Electrical safety — identifying and addressing assets, primarily switchboards, that are deemed to pose an unacceptable risk to operators.
6. Fire detection and emergency evacuation — ensuring all sites where our people are based are well protected by compliant fire detection and evacuation systems
7. General and minor health and safety — addressing specific sites or hazards that do not fit in the above categories.

Field worker safety

Rollout of the in-vehicle safety system supporting our remote and isolated workers to undertake their roles safely, was completed and is now installed in 550 vehicles. The system has an in-built alert that automatically raises an alarm in the event immediate help is needed. The system is monitored 24 hours a day, seven days a week by our Operations Control Centre in Adelaide.

A wider assessment was undertaken of the risks relating to the personal safety of our field crews in remote or isolated areas, and the safety support we provide them. While there is significant support already in place, this exercise highlighted a number of opportunities for improvement which will be progressed in 2019-20.

Inclusion and diversity

A refreshed Inclusion and Diversity Plan was prepared to ensure alignment with our vision and strategy. It has four focus areas:

1. Women in SA Water — increasing opportunities for women in leadership and non-traditional roles including field-based, STEM and trades.
2. Aboriginal and Torres Strait Islander employment and retention — supporting our Reconciliation Action Plan.
3. Flexible and inclusive workforce — overcoming unconscious bias, increasing and supporting diversity in all its forms.
4. Emerging workforce — growing innovation and diversity of thought through opportunities for new and emerging people in our business.

Each focus area is led by a General Manager with the Chief Executive taking leadership of the overall plan.

Our existing recruitment and retention processes, as well as our culture and values underpin our inclusion and diversity program.

Participants in our 2018-19 graduate program.

Building a high performing and collaborative team

There were two key focus areas for developing our people in 2018-19:

1. Leadership Fundamentals

Leadership Fundamentals was piloted with managers from our Customer Field Services team. The program has an emphasis on building on the basics, developing greater consistency in our leadership capability, and supporting our leaders to:

- provide clear performance expectations
- create greater levels of accountability
- build a constructive workplace culture within their teams
- improve their leadership communication
- effectively lead their teams in an environment of constant change
- recognise great work.

2. Teamgage

Teamgage is an online tool that enables our people to effectively collaborate and have meaningful conversations with their team. It provides an opportunity for teams to regularly provide feedback to their people leaders and track how everyone is going. The ongoing process is designed to measure change and improvements in key areas over time.

Teamgage was piloted with more than 160 of our people, with the rollout across the business will continue in 2019-20.

As well as these focus areas, in 2018-19, 74 per cent of our people responded to the South Australian Government's *I Work for SA* survey. The results showed that across all major indicators, our people tracked above the public sector average.

The 72 per cent engagement level corresponds to 74 per cent when compared with our previous engagement methodology, which is an increase of five per cent over 12 months. It shows our people have a strong commitment towards the business and strive to do their best.

The key highlights from the survey include:

- 94 per cent of the respondents feel our workplace is committed to safety
- 92 per cent say we go the extra mile and are willing and comfortable to suggest ideas to improve the way we do things.

The survey also identified opportunities for improvement such as further simplification of processes and growing the number of people who feel comfortable to speak up and challenge the way we work when they see a better way. Results will inform our ongoing work to build a constructive and collaborative culture.

Awards celebrate our innovation and excellence

In December 2019, our inaugural Innovation and Excellence Awards acknowledged our people who are excelling as they deliver for our customers. There were seven awards:

1. **Innovation Award** — presented to members of our Woodside Depot team in recognition of their work to test and implement trenchless pipe repair techniques that are delivering cost, safety and environmental benefits.
2. **Together Award** — for the large, cross-disciplinary team involved in the retrieval of a vehicle that crashed through a railing in Mount Gambier and into the Blue Lake/War War. This was a complex operation and our people played a critical role ensuring the incident was managed safely and proactively. See Car retrieved from Blue Lake/War War on page 38.
3. **Safety Leadership Award** — presented to the team that worked on improving sludge monitoring of lagoon-based wastewater treatment plants. See Remote boats improve sludge management on page 45.
4. **Inspirational Leadership Award** — Riverland District Leader Shaun Elphick received this award in recognition of his positive approach and inspirational endeavours.
5. **Environment and Energy Award** — awarded to Manager Environmental Opportunities Greg Ingleton for his work on the innovative Adelaide Airport heat trial. Through smart application of irrigation techniques to an open environment at the airport, he was able to show that the surrounding area could be cooled significantly, bringing a range of benefits to the airport operators.

Above: Winners of the Together award — representatives from the team involved in the vehicle retrieval at Blue Lake/War War.

Left: The team from Crystal Brook, winners of the Surprise and Delight (Internal) award.

6. **Surprise and Delight Award (External)** — presented to the team that delivered the Hallett Cove Wastewater Pump Station upgrade. In delivering two major upgrades at the pump station over 12 months, Environmental Services together with the Stakeholder Engagement and Asset Management teams and alliance partner Allwater managed and improved our relationship with the local community. The result is a beautiful landscape that the community uses and enjoys.
7. **Surprise and Delight Award (Internal)** — won by electricians from our Crystal Brook Workshop who took on the challenge to install new switchboards, power supplies and control cabling while the Henley Beach and Fulham sewer pump stations continued to operate. The successful outcome was a collaboration between our electricians, alliance partner Allwater and external contractors.

KEEPING IT SIMPLE

Simple, easy, customer friendly processes are important to create value for our customers. Keeping it simple motivates our people to challenge the status quo, get involved and act on their ideas for improving how we work.

Increasing technology and digital capability

The delivery of information technology projects has accelerated this year with 50 additional digital features newly available to the business, up from 40 introduced in 2017-18. Our IT Delivery team has worked with our change managers to help ensure our people make best use of the technology features being delivered.

In addition, there has been ongoing development and scaling of the agile framework, which is used by more than 35 per cent of our IT projects. This has been well supported by our internal agile coach helping our people understand the mindset and method.

The IT services panel came into effect on 1 July 2018 enabling us to consolidate and better manage and use our suppliers. The panel provides services for both operational and project activity.

Simple processes

During 2018-19, we worked on 59 projects to simplify a range of processes. Of these, 22 were completed and 25 remain in progress as at the end of June. Among those delivered, we have:

- **Reduced the number of internal sewer overflows** experienced by customers by simplifying processes and improving the way we work. We have reduced repeat blockages and known 'black spots' in the network, used trenchless repair technology and improved levels of customer service.
- **Developed and implemented *Keeping it Simple***, an improvement process and system that can be used by anyone in the business. Through this process, 96 improvement ideas were raised with benefits identified for implemented ideas in excess of $2.5 million.
- **Customer Assist process review**, for optimised compliance with the *Water Industry Act (2011)* and regulated reporting requirements. This work led to quicker and easier responses to customers experiencing financial difficulty who call us; meeting targets for responding to written correspondence; a simpler way to manage some types of customers inquiries; and clearly defined processes for training and skill development for our people.
- **Improved laboratory test turnaround times** to meet customer expectations by creating capacity in the team to focus on method development. Results included a 10 per cent increase in productivity in two of our laboratories following a 5S LEAN audit, as well as efficiencies gained through the acquisition of a new instrument and more efficient digital archiving.
- **Improved timesheet processes** for our people not yet recording their time digitally, leading to time savings for our Payroll team and district leaders.

Integrating risk management

By simplifying processes related to risk management, we are improving safety outcomes, operational and capital efficiencies, and better integrating enhanced risk intelligence and behaviours in our business.

In 2018-19 we delivered:

- Improvements to tools including our electronic risk, hazard and incident register (known as SAAM), and risk assessment template.
- A completed framework and tool for multi-criteria analysis and integration with our risk management framework.
- Updated risk management framework and consequence criteria review.
- A risk champion network within the business and their guiding terms of reference.
- An embedded standard risk process which aligns the risk calculation approaches from different disciplines with our corporate risk criteria.
- Alignment of risk scanning, insights and coordination with our business strategy development, incorporating lessons learnt and risk insights from environmental scans.
- A review and future state flow chart of risk process integration between health and safety and asset management.
- One consolidated system for all risk-related information with 30 environmental aspects and impacts registers brought into SAAM.

As a result of these actions, risk management in the business has been standardised, enabling an end-to-end process, eliminating duplication, and facilitating better connection of risk management with business activities and decision making.

Our risk intelligence has improved through consolidating risk data and making it more available. These actions are moving us towards the aim of using risk data to inform corporate performance. Our collaboration on risk is improving as we enhance and harness the value of risk management.

Integrating management systems

This year we focused on nine core quality management system processes with the aim to improve their effectiveness and efficiency. By identifying and partnering with the process owners, we initiated work to collaboratively deliver the design and implementation of improvements.

The nine processes were:

1. audits and reviews
2. capability development
3. customer and stakeholder engagement
4. improvement innovation
5. knowledge management
6. performance management
7. planning
8. procurement
9. risk management.

In 2018-19 we upgraded and expanded our hazard, incident and risk management tool to incorporate environmental risks. An audit module was added to the system to facilitate audits and ensure findings are captured and managed from one central tool.

Continual improvement of our Business Management System was introduced, applying an agile approach to deliver incremental improvements.

The internal management systems audit schedule was redesigned using risk to define the frequency of audits, ensuring efforts are focused on the areas where most value will be added.

Organisational change readiness

Building on the pilot run in 2017-18, our Leading Change Module — including eLearning, classroom training and one-on-one coaching — was completed by 40 people leaders and 25 IT project managers.

Rollout of five change management approach elements began in 2018-19:

1. base methodology
2. consistent change processes
3. training — leading change
4. roles and responsibilities
5. tools and templates.

These were targeted for IT project managers, customer delivery managers and other people leaders managing significant change.

Our people leaders are key to achieving change effectively. Training delivered is a critical part of implementing and maturing our organisational change readiness capability.

Additionally, a standardised induction package for change leads was piloted to ensure best practice is applied consistently, regardless of business demand.

At 30 June 2019, we were considered 'project level' mature in our change capability. Achieving this level is part of our progress to be at 'enterprise level' of maturity which enables improved customer experiences from a workforce that is ready, willing and able to lead and deliver improvements and change.

Adelaide service delivery into the future

As we continue to evolve to meet our customers' changing expectations and our regulatory requirements, we have reviewed the way services are delivered for our customers in metropolitan Adelaide.

In November 2018, we notified Allwater that the current contract would not be extended, to enable a new contracting arrangement that reflects the evolving needs of our customers. Preparations are now underway for changes that will come into effect from 1 July 2021 when we adopt a new contract model comprising two components: production and treatment, and field services.

Best practice service delivery models from around the world were reviewed as we developed our new approach which balances local knowledge and experience with the best national and international expertise available.

The procurement process for both contracts is underway and will continue to progress during 2019-20.

SUSTAINABLE DEVELOPMENT GOALS

As the providers of essential water and sewerage services to 1.7 million South Australians, our core business aligns with the UN Sustainable Development Goal number 6, clean water and sanitation. In addition, a number of activities undertaken in 2018-19 support additional Sustainable Development Goals, as outlined below.

Action	Sustainable Development Goals	More information
Water infrastructure upgrades in the Aṉangu Pitjantjatjara Yankunytjatjara (APY) Lands to improve the safety and reliability of drinking water to the local communities.	7 AFFORDABLE AND CLEAN ENERGY; 10 REDUCED INEQUALITIES	Page 23
Building an understanding of the challenges and experiences of customers living with a disability to help us better plan, and tailor products, services and communication.	10 REDUCED INEQUALITIES	Page 31
Through our Customer Assist Program we work together with customers who are experiencing financial difficulties to agree a bill payment plan and help them return to paying bills quarterly.	10 REDUCED INEQUALITIES	Page 32
An expanded network of free drinking water fountains across the state, providing more options for South Australians and visitors to build a healthy habit and refill reusable drink bottles or stop for a drink of tap water.	11 SUSTAINABLE CITIES AND COMMUNITIES	Page 33
Our community and education program provided opportunities for students and community to learn about the importance of water as a resource and how we can all contribute to sustainable water use and management.	4 QUALITY EDUCATION; 12 RESPONSIBLE CONSUMPTION AND PRODUCTION	Page 34
Through our Community Partnerships Program, we supported 17 grass-roots not-for-profit organisations deliver programs in their local communities including: • Uniting Country SA's Itchy Emu Clinic in Port Augusta providing free head lice treatment for local children, tackling the problem of nits through a chemical-free treatment and a fun educational program. • A 27,000 litre rainwater tank and guttering for a water harvesting project at the Elliston Community Sports Centre to ensure the facilities can support a more sustainable water future. • Can:Do 4Kids providing a safe and inclusive environment for children with sensory needs to improve their aquatic skills. • Supporting a group of West Croydon residents to green the space along the trainline on Day Terrace with two new water connections.	3 GOOD HEALTH AND WELL-BEING; 4 QUALITY EDUCATION; 10 REDUCED INEQUALITIES; 11 SUSTAINABLE CITIES AND COMMUNITIES; 12 RESPONSIBLE CONSUMPTION AND PRODUCTION; 17 PARTNERSHIPS FOR THE GOALS	Page 35
In partnership with the University of Adelaide, supporting career and development opportunities for women in the fields of Science, Technology, Engineering and Mathematics.	4 QUALITY EDUCATION; 5 GENDER EQUALITY	Page 35

Action	Sustainable Development Goals	More information
Through our Smart Water Schools program, which is linked to the Australian Curriculum, students have access to a secure portal to gather, analyse and act on real-time information collected from loggers attached to their school's smart water meter.		Page 35
Recycled water supply in the Adelaide Hills is providing great economic and environmental value, while ensuring security of supply and underpinning local business growth.		Page 37
Our stretch Reconciliation Action Plan 2017-20 guides our reconciliation actions. Outcomes in 2018-19 include: • education and training programs • upgrading infrastructure • greening the Amata oval • Reconciliation Week activities • dual naming of sites • community art projects • capturing and sharing stories • displaying the Aboriginal and Torres Strait Island flags • conceiving and hosting an Aboriginal Business Forum.		Pages 39-41
To create a zero cost energy future, we will install 154 megawatts of solar generation and 34 megawatt hours of storage across up to 70 of our sites. With an energy bill of $83 million in 2018-19, this investment in more than 500,000 solar panels is expected to deliver a return on investment in six years with the view to reducing our costs and keeping water services charges as low and stable as possible for our customers.		Page 44
Our world-leading climate change research has successfully demonstrated an ability to monitor and reduce nitrous oxide emissions by 30 per cent from Bolivar Wastewater Treatment Plant. Setting a benchmark for treatment plants around the world, the research has informed the United Nations' greenhouse gas guidelines.		Page 45
Using water in different ways can increase the use of spaces and liveability during our hot summers and is an important way we are working to create a better life for South Australians. 'Cool zones' created with water misters were popular with spectators at events such as the Tour Down Under and aerial adventurers at TreeClimb.		Page 46
A refreshed Inclusion and Diversity Plan was prepared to ensure alignment with our organisational vision and strategy. It has four focus areas: 1. women in SA Water 2. Aboriginal and Torres Strait Islander employment and retention 3. flexible and inclusive workforce 4. emerging workforce.		Page 47

WATER QUALITY

SA Health statement

SA Health and SA Water continued to work cooperatively and successfully throughout 2018-19 to ensure the protection of public health in relation to the supply of safe, clean drinking water across South Australia. SA Water complied with all requirements under the *Safe Drinking Water Act 2011* including the notification of incidents under the interagency *Water/Wastewater Incident Notification and Communication Protocol.*

SA Water collected 46,118 samples from drinking water supplies throughout the state. Samples were analysed for compliance with the Australian Drinking Water Guidelines (2011) (ADWG) and results were reported to SA Health in line with agreed reporting protocols. Compliance with the ADWG for *E. coli* was achieved in 100 per cent of metropolitan Adelaide samples, 99.99 per cent of country samples and 100 per cent of remote Aboriginal community samples. Overall compliance with the ADWG for health-related parameters was 100 per cent for metropolitan systems, 99.90 per cent for country areas and 99.49 per cent for remote community supplies.

The total number of incidents reported by SA Water in 2018-19 was significantly lower in comparison to the previous financial year. A reduction was observed across a range of incident categories including detections of enteric protozoa and exceedances of ADWG values for health-related inorganic chemicals and disinfection-by-products. Incidents in relation to the detection of high numbers of cyanobacteria in source water also decreased significantly. A trend in decreasing numbers of incidents has been observed over the past few years and could be attributed to a number of factors including improvements in source water quality and enhanced treatment implemented by SA Water.

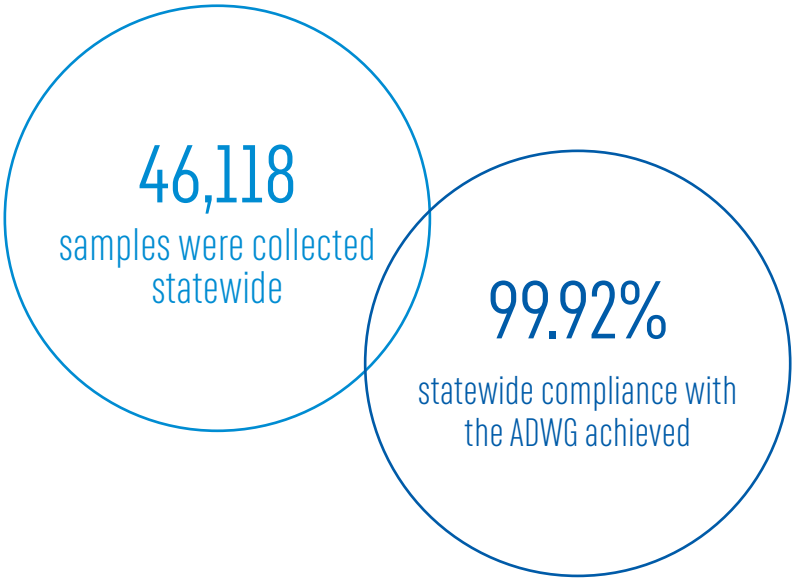
Water quality incidents were notified by SA Water in a timely manner. Appropriate remedial actions were implemented and ensured that the protection of public health was maintained at all times. No incidents required public notification during the reporting period.

Safe drinking water legislation

The *Safe Drinking Water Act 2011* (the Act) provides the regulatory framework for drinking water providers in South Australia and is administered primarily by SA Health with assistance from local government. Provisions in the Act are underpinned by the ADWG and prescribe requirements for drinking water providers, including:

- registration of drinking water providers with SA Health
- development and implementation of risk management plans (RMPs)
- establishment of approved drinking water quality monitoring programs
- notification of incidents or non-compliance
- audits and inspections to determine compliance with the Act
- use of National Association of Testing Authorities accredited laboratories for sample testing
- reporting of water quality test results to SA Health and providing consumers with drinking water quality information.

SA Water is registered as a drinking water provider and has established RMPs including approved monitoring programs and an incident notification protocol. SA Water provided water quality testing reports for metropolitan, country and remote community water supplies on a monthly basis with results showing a very high level of compliance.



Under the Act, SA Water is required to undergo an annual independent audit. In 2018-19, the fifth audit of SA Water was undertaken since commencement of the Act. A number of representative SA Water drinking water supplies were included in the audit. The audit outcomes were consistently positive and noted that SA Water was operating in compliance with the requirements and intent of the Act. Compliance improved relative to the four previous audits and no significant non-compliances were detected.

Further information on the *Safe Drinking Water Act 2011* can be found at sahealth.sa.gov.au/safedrinkingwateract/.

Additional information about water quality can be found at sawater.com.au/.

Catchment to tap

We manage drinking water quality from catchment to tap in line with our Drinking Water Quality Management System to ensure a consistent and reliable supply of high quality, safe drinking water for our customers.

This management system is based on the Framework for Management of Drinking Water Quality outlined in the ADWG and endorsed by the National Health and Medical Research Council. The framework outlines good drinking water supply management, based on the best available scientific evidence that will assure drinking water quality and safety at the tap.

Water quality monitoring and testing

To ensure the quality of our product, we have SA Health-approved drinking water quality monitoring programs across metropolitan, country and remote Aboriginal communities of South Australia, from catchment to tap, including field and laboratory tests.

We monitor for health and aesthetic compliance and to optimise water quality. Samples are collected by our trained field workers to ensure they are taken correctly, and field results have a high degree of integrity. Laboratory analyses are carried out by our Australian Water Quality Centre in accordance with ISO 9001 Quality Systems and the requirements of the National Association of Testing Authorities.

The following table summarises routine monitoring and testing activities in our SA Health-registered drinking water supply systems in 2018-19.

Number of sample taps and test analytes — statewide, metropolitan, country and remote Aboriginal communities water supply systems, 2018-19

Drinking water systems	Statewide	Metropolitan	Country	Remote Aboriginal Communities
Supply systems	87	8	60	19
Customer tap sample locations	490	186	285	19
Catchment to tap sample locations*	1,439	372	950	117
Catchment to tap routine test analytes	372,352	72,279	289,997	10,076

* *Includes drinking water customer taps*

Drinking water quality and performance

In 2018-19, we demonstrated robust management of water quality by consistently providing safe, clean drinking water for our customers.

The following table summarises our performance for health-related parameters of routine samples at customer taps.

Statewide, metropolitan, country and remote Aboriginal communities drinking water supply systems health related performance, 2018-19

Health-related parameters	Statewide systems *(number of test analytes)*	Metropolitan systems *(number of test analytes)*	Country systems *(number of test analytes)*	Remote Aboriginal Communities *(number of test analytes)*
Samples free from *E. coli*	99.99% (10,560)	100% (3,309)	99.99% (7,151)	100% (100)
Samples compliant with ADWG health parameters*#	99.92% (46,118)	100% (13,408)	99.90% (32,126)	99.49% (584)
	Target: 99.90%	Target: 100%	Target: 99.80%	Target: 99.80%

* *Percentage of routine results at customer taps within drinking water systems which comply with the ADWG health limits (including E. coli).*

\# *Direct exceedances of the ADWG were used rather than the 95th percentiles for compliance of individual chemical parameters.*

\# *Prior to calculating per cent compliance for health-related chemicals, individual results are rounded to the same number of significant figures as the guideline value in the ADWG (as prescribed in the ADWG and agreed with SA Health).*

We analysed 46,118 routine test analytes from our drinking water supplies throughout South Australia to determine health related compliance.

- We achieved 99.99 per cent *E. coli* compliance across customer taps with an exception in one country system.
- Compliance with ADWG health-related parameters across customer taps was above target at 99.92 per cent.

Although we aim for 100 per cent compliance, the ADWG recognises that occasional exceedances may occur. In accordance with the guidelines and the interagency *Water/Wastewater Incident Notification and Communication Protocol,* all detections were immediately communicated to SA Health, investigated by us and corrective actions implemented as agreed with SA Health.

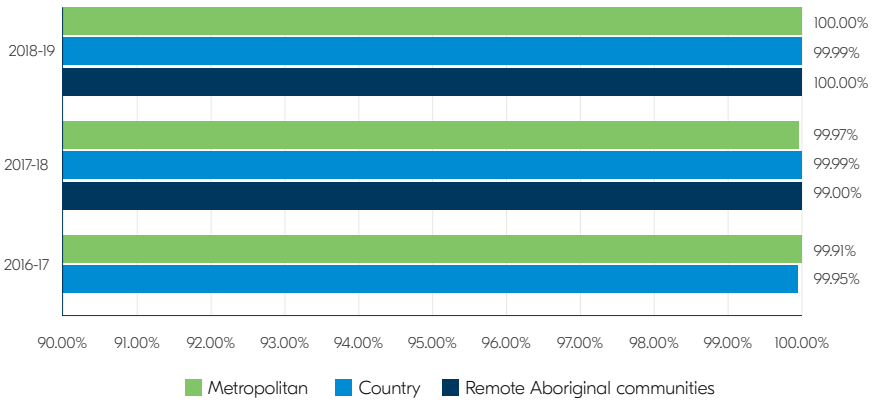
SA Health has confirmed that drinking water provided to customers by us was safe and appropriate responses and corrective actions were implemented in all cases and these mitigated any risks to public health.

The greatest challenge to country compliance is disinfection by-products due to several South Australian source waters containing high amounts of natural organic matter. We have identified these systems and are proactively implementing management strategies to address these situations.

In 2018-19 we successfully changed how we disinfect the filtered water delivered to the Myponga township from chlorine to chloramine. This change is the first step to convert the entire Myponga drinking water system, which serves a large proportion of the Fleurieu Peninsula, to chloramine which will help mitigate the disinfection by-products challenges faced in this system, as well as having the added benefit of improving the taste and smell of the water.

In late 2017 we took on the Aboriginal communities ground water supply systems of Kanpi and Murputja. At that time, these supplies did not meet all the process requirements and health objectives of the *Safe Drinking Water Act 2011* and have naturally occurring fluoride above the Australian Drinking Water Guidelines (2011). A water supply upgrade project is underway which will see Kanpi, Murputja and Nyapari water supplies merged, and the installation of a reverse osmosis treatment plant to remove the elevated fluoride. This project will improve the compliance and reliability of drinking water for the people living in these communities.

E. coli compliance at metropolitan, country and remote Aboriginal communities drinking water supply system customer taps since 2016 (customer tap samples free from _E. coli_)



Compliance in remote Aboriginal communities was first reported in 2017-18.

Incident management

We are committed to applying the Australian Drinking Water Guidelines (2011) (ADWG) Framework for Management of Drinking Water Quality which includes two components for the management of incidents and emergencies:

- communication
- incident and emergency response protocols.

We have a Water Quality Incident and Emergency Management Protocol in place and a web-based incident management system to record and generate notification of water quality incidents. These are in line with the interagency *Water/Wastewater Incident Notification and Communication Protocol* that is maintained by SA Health to adopt the principles of the ADWG and satisfy requirements of the *Safe Drinking Water Act 2011* and *Safe Drinking Water Regulations 2012*.

SA Health defines three types of health related incident classifications based on a precautionary approach:

1. Priority Type 1 incident notification

An incident that, without immediate appropriate response or intervention, could cause serious risk to human health and is likely to require immediate interagency meetings to consider responses. Procedures for Type 1 incident notifications also apply.

2. Type 1 incident notification

An incident that, without appropriate response or intervention, could cause serious risk to human health.

3. Type 2 incident notifications

An incident that, without appropriate response or intervention, represents a low risk to human health.

Following is a comparative summary of the Priority Type 1, Type 1 and Type 2 incident notifications reported against the interagency *Water/Wastewater Incident Notification and Communication Protocol.*

Statewide supplies (metropolitan, country, and remote Aboriginal communities)

Reporting period	Priority Type 1	Type 1	Type 2
2018-19	1	24	54
2017-18*	2	42	90
2016-17#	2	48	159
2015-16	4	32	74
2014-15	1	43	84

Note: these notifications do not include wastewater, recycled water and non-drinking supplies.
* *Remote Aboriginal communities incidents included in annual reporting from 2017-18. In 2018-19, there was one Type 1 and no Type 2 incident reported in remote Aboriginal communities.*
\# *Impacted by River Murray blackwater event.*

Priority Type 1 and Type 1 incidents are immediately reported to SA Health, while all Type 2 notifications are reportable within 24 hours, in line with the interagency *Water/Wastewater Incident Notification and Communication Protocol*. In 2018-19, the numbers of incident notifications decreased significantly when compared with 2017-18. This can be attributed to a reduction in cyanobacteria, disinfection by-products and enteric protozoa incidents, primarily due to improved process monitoring and control systems at water treatment plants and improved source water quality in the River Murray.

In 2018-19, we continued our focus on early detection and reporting to external agencies, briefing the Minister for Environment and Water in accordance with the interagency *Water/Wastewater Incident Notification and Communication Protocol*, ensuring prompt corrective action and addressing the causes of preventable Type 1 notifications, such as disinfection failures and filtered water turbidity exceedances. Strategies employed to achieve this include optimisation of our drinking water quality monitoring program, ongoing operational and capital improvements, and continuous improvement of our Drinking Water Quality Management System.

The proactive water quality management of targeted individual water supply systems and detection and management of risks continued during 2018-19. Changes in reporting criteria issued by SA Health in the interagency *Water/Wastewater Incident Notification and Communication Protocol* also occurred and contributed to a change in reporting requirements.

Incident Response Index

The Incident Response Index (IRI) drives and guides correct responses when a Priority Type 1 or Type 1 incident is detected. The IRI is assessed against a number of criteria, with each component in the IRI designed to assist the management of water quality incidents, including reporting, initial response and longer term preventive measures. The overall 2018-19 strategic target for the IRI is 85 per cent compliance.

Criteria used in the Incident Response Index (based on total reportable SA Health Priority Type 1 and Type 1 incident notifications)

Incident reported to relevant agencies by phone immediately (less than one hour)	Overall strategic 2018-19 target: 85%
Incident entered into the incident management system in less than two hours	
Initial effective response taken within three hours	
Written report to Minister for Environment and Water by 3pm next business day, in accordance with the interagency *Water/Wastewater Incident Notification and Communication Protocol*	
Root cause analysis completed within 10 working days	
Preventive actions implemented within agreed timeframes	

The continual review and improvement of our incident management processes has positively impacted our overall water quality incident response and performance, maintaining an overall score well above our target.

The Incident Response Index (IRI) achieved in metropolitan, country and remote Aboriginal communities and overall for 2018-19 compared to 2017-18

System	IRI 2017-18	IRI 2018-19
Metropolitan	97%	99%
Country	92%	97%
Remote Aboriginal communities	65%	67%
Overall (weighted combined metropolitan, country and remote Aboriginal communities)	90%	*96%*

Focus for 2019-20

In 2019-20 we will:

- Continue to improve our online incident management system for reporting and management of water quality incidents and hazards.
- Conduct refresher training on the *Water Quality Incident and Emergency Management Protocol* for country, metropolitan and remote Aboriginal communities incident managers.
- Continue to work collaboratively with SA Health in the review and update of the interagency *Water/Wastewater Incident Notification and Communication Protocol*.
- Streamline our incident management procedures to support our incident managers in their response.

Safe Drinking Water Act audit

In November 2018, we were audited under the *Safe Drinking Water Act 2011* (the Act) and successfully met all our legislative requirements. The successful outcome of the audit found:

- We operate in compliance with both the explicit requirements and the implied intent of the Act, Regulation, SA Health audit report template and the Australian Drinking Water Guidelines (2011) (ADWG). Our people and contractors consistently demonstrated this compliance and understanding of the need for such compliance.
- The audited sites and systems demonstrated improved compliance relative to the four previous audits (2014 to 2017) and showed positive responses to findings from those previous audits. The result was evidence of continual improvement in the spirit of the ADWG.
- The expertise in water quality management of our people was impressive and the auditor had confidence in how we discharged our responsibilities and showed our genuine organisational commitment to water quality management.
- The standard of our supporting systems was high and all twelve elements of the ADWG Framework were fully implemented.

Overall it was concluded that our water quality management planning was mature, embedded, extensive and comprehensive.

The audit result demonstrates the good level of collaboration across the business, with our contract partners, and SA Health.

There were no significant non-compliances from the audit, however several observations or opportunities for improvements were identified. These included actions such as further reducing drinking water safety and quality risks associated with power failures. We will take formal and systematic steps to review and address these opportunities in addition to the many other improvements we have planned.

Effective governance

Legislation

SA Water was established as a Public Corporation on 1 July 1995 under the *South Australian Water Corporation Act 1994*. SA Water's operations are guided by legislation, the most significant include:

- *Public Corporations Act 1993*
- *Water Industry Act 2012*
- *Safe Drinking Water Act 2011*
- *South Australian Public Health Act 2011*
- *Work, Health and Safety Act 2012*
- *Environment Protection Act 1993*
- *Natural Resources Management Act 2004*.

Key regulators

The Essential Services Commission of South Australia is the independent economic regulator for the water industry. It sets service standards and revenue levels for water and sewerage services we provide.

SA Health sets and monitors standards for drinking water quality and regulates recycled water use in the state.

The Office of the Technical Regulator is responsible for ensuring minimum industry standards and requirements for installation and operation of water and sewerage infrastructure are met, ensuring public and environment safety.

The Environment Protection Authority sets standards for acceptable discharge from SA Water's wastewater treatment facilities and monitors our operations and activities to minimise impact on the environment.

The Department for Environment and Water regulates access to natural water sources, protects water catchments and native vegetation and is the state body responsible for the River Murray as part of the Murray-Darling Basin.

The Board

The Board is appointed under the *South Australian Water Corporation Act 1994* to govern the business on behalf of the State Government, reporting to the Minister for Environment and Water. The Board sets the strategic direction and monitors performance, driving efficiency and protecting our long-term viability in accordance with the *Public Corporations Act 1993*.

The following Board directors, appointed by the Governor of South Australia, served during 2018-19:

- Andrew Fletcher AO, Chair
- John Bastian AM
- Janet Finlay
- Fiona Hele
- Ian Stirling
- Sue Filby
- Roch Cheroux.

Day-to-day management of the business is delegated by the Board through the Chief Executive to the Senior Leadership Team. Pursuant to section 18 of the *South Australian Water Corporation Act 1994*, the Minister has delegated authority to the Board of SA Water to approve procurements of up to $10 million and expenditure up to $4 million on any one project.

A charter prepared by the Minister and the Treasurer, in consultation with the Board, was in place for 2018-19 in accordance with section 12 of the *Public Corporations Act 1993*. The charter guided the Board in seeking to balance community service with prudent commercial principles.

Directors' interests and benefits

For 2018-19, no director had an interest in any contract or proposed contract with SA Water, other than contracts in the ordinary course of business. No benefits were received by any director of SA Water by virtue of a contract that was made with SA Water, other than in normal course of business as set out in the financial statements.

Board committees

The Board has established a committee structure to assist it in meeting its responsibilities. Each committee has a charter that guides its functions and duties and is reviewed regularly.

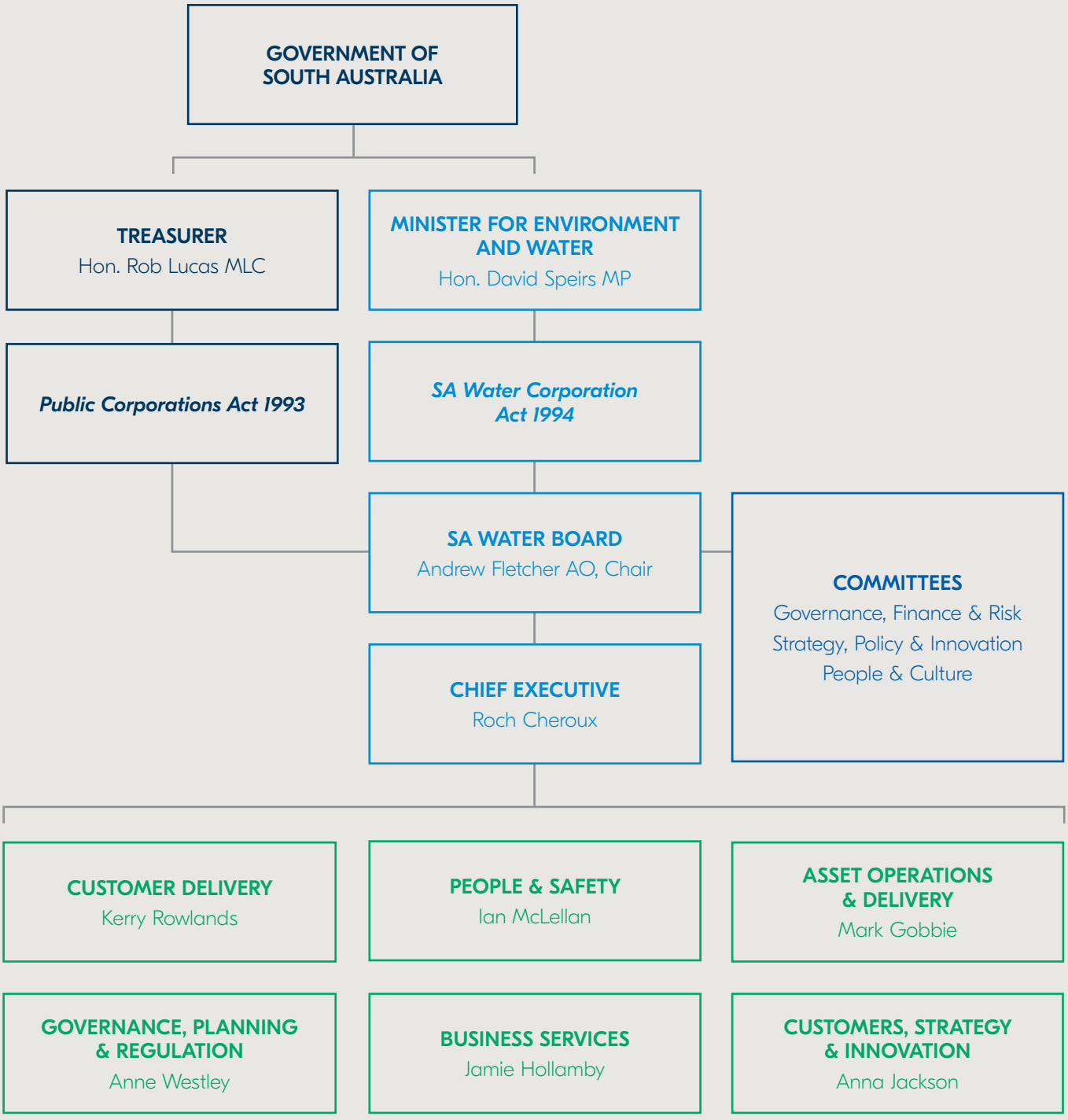
Governance, Finance and Risk Committee — supports and assists the Board in fulfilling its corporate governance and oversight responsibilities in relation to our financial planning and reporting, internal and external audit functions, internal control processes, risk management systems, compliance, and fraud control.

Strategy, Policy and Innovation Committee — assists the Board's oversight of the long-term strategy of the corporation to ensure it remains a valuable, relevant and effective water and sewerage service provider with high levels of customer, community and stakeholder service and support.

People and Culture Committee — supports and assists the Board on matters associated with workforce planning, remuneration and corporate culture, taking into account the strategy, government policy, relevant Board policies, business needs and regulatory requirements.

Organisation structure

As at 30 June 2019



Financial performance

Financial performance summary

The following is a brief summary of our overall financial performance.

The year-end profit before tax result is $272.5 million which is $39 million higher than the original budget. This result can be attributed to a number of factors including:

- higher operating revenues from an increase in water sales of $62 million and recycled water sales of $2.8 million
- interest and finance charges savings of $6.8 million.

These were offset by:

- higher electricity costs of $15.3 million and higher chemical costs of $2.4 million resulting from the increased water sales
- other underlying operating expenditure increases of $5.3 million
- accelerated depreciation and asset write offs of $7.7 million relating to plant and equipment, infrastructure and capital work-in-progress
- other reductions in revenue and expenditure of $1.9 million.

Consultants

The following is a summary of external consultants engaged, and the nature and cost of the work undertaken.

Consultant	Amount	Description/purpose
Less than $10,000		
Bakjac Consulting Pty Ltd	185.00	Coaching service
SA Federation of Ratepayers	945.72	Sitting fees
Marchment Hill Consulting	1,800.00	Civil maintenance benchmarking
J Bowley Consulting Engineers	4,500.00	Heritage engineer report, Cobdogla
The University of Adelaide	6,300.00	Technical report on Water RA Project 110-49 Environmental *E. coli*
Between $10,000 and $50,000		
J Squared Consulting	10,880.00	Fire system audit including site inspection and preparation compliance
Hudson Howells	24,793.50	Mount Barker irrigation scheme
Due Diligence Consultants Pty Ltd	28,283.40	Financial integrity and due diligence reporting for Trility contract
Inside Infrastructure Pty Ltd	37,500.00	Specialised sewer renewals program assessment, external resource to ensure integrity
Teamgage Pty Ltd	47,685.00	Subscription
Greater than $50,000		
Marsden Jacob Associates Pty Ltd	60,699.13	*Our Plan 2020-24* customer research
Acil Allen Consulting Pty Ltd	64,767.00	*Our Plan 2020-24* water demand model review and Acil energy trace price model
KPMG	217,133.80	Advisory services for the Adelaide Service Delivery Project, *Our Plan 2020-24* benchmarking review, rate of return peer review
Total	**505,472.55**	

See also tenders.sa.gov.au/tenders/index.do for a list of all external consultancies, including nature of work and value. See also the Consolidated Financial Report of the Department of Treasury and Finance at treasury.sa.gov.au for total value of consultancy contracts across the SA Public Sector.

Supplementary reporting items

Fraud

There were five instances of alleged fraud detected in 2018-19. The matters were either investigated, or are in the process of being investigated, and were reported to the appropriate authorities.

Strategies implemented to control and prevent fraud

We have a zero tolerance to fraud.

We perform a range of activities to control and prevent fraud. Key to these activities are:

- senior executive oversight of our Fraud and Corruption Control Policy by the General Manager, Governance, Planning and Regulation
- investigations of all allegations of fraud made under the policy
- data analytic reviews conducted by Internal Audit of all payroll and accounts payable transactions, as well as other ad-hoc audits
- regular communications and reminders to our people of the need to report matters of concern and to act in accordance with our values and Code of Conduct.

Whistleblowers disclosure

Pursuant to section 7 of the *Public Sector Act 2009*, we have appointed Responsible Officers for the purposes of the *Whistleblowers Protection Act 1993*.

We did not receive any whistleblower-related allegations during 2018-19.

Summary of complaints

Complaints received from customers are an opportunity to build and maintain customer confidence and trust as well as improve our customer experience performance and operational efficiency.

Our comprehensive approach to dealing with complaints includes a focus on first contact resolution with a dedicated team. Our Customer Advocacy and Resolution team is responsible for investigating and responding to complaints which were not able to be resolved on first contact.

In 2018-19, we registered 2.06 complaints per 1,000 customers. This is a decrease compared to 2.22 complaints per 1,000 customers in 2017-18. We continue to track below the national benchmark of 3.3, based on the Bureau of Meteorology's *National performance report 2017-18: urban water utilities*.

Together with the Water Services Association of Australia and other Australian water utilities, we are reviewing practices to ensure we are effectively capturing customer complaints to continue to generate valuable insights to improve overall customer experiences.

The most common complaint types relate to water quality, repairs and maintenance of infrastructure in the metropolitan area, and costs incurred for high water consumption.

In 2018-19, 195* complaints were made about us to the Energy and Water Ombudsman of South Australia (EWOSA) on a range of issues. Costs incurred for high water use continued to top the list of escalated concerns.

When compared to 2017-18, EWOSA complaints have remained consistent, with a slight decrease.

Our Customer Advocacy and Resolution team completes root cause analyses, post-complaint reviews and case studies, which are important steps in our complaint management process. Case studies include details of the complaint, a summary of the investigation, the outcome and process improvement recommendations.

**The number of EWOSA complaints referred to us may differ between our reporting and EWOSA's due to variances in reporting practices.*


SA Water
Government of South Australia
SA Water

Appendices

South Australian Water Corporation
Annual Financial Statements for the
year ended 30 June 2019.

INDEPENDENT AUDITOR'S REPORT

Government of South Australia
Auditor-General's Department

Level 9
State Administration Centre
200 Victoria Square
Adelaide SA 5000
DX 56208
Victoria Square
Tel: +618 8226 9640
Fax +618 8226 9688
ABN 53 327 061 410
audgensa@audit.sa.gov.au
www.audit.sa.gov.au

To the Chair
South Australian Water Corporation

As required by section 31(1)(b) of the *Public Finance and Audit Act 1987* section 32(4) of the *Public Corporations Act 1993*, I have audited the financial report of the South Australian Water Corporation for the financial year ended 30 June 2019.

Opinion

In my opinion, the accompanying financial report gives a true and fair view of the financial position of the South Australian Water Corporation as at 30 June 2019, its financial performance and its cash flows for the year then ended in accordance with the Treasurer's Instructions issued under the provisions of the *Public Finance and Audit Act 1987* and Australian Accounting Standards.

The financial report comprises:

- a Statement of Comprehensive Income for the year ended 30 June 2019
- a Statement of Financial Position as at 30 June 2019
- a Statement of Changes in Equity for the year ended 30 June 2019
- a Statement of Cash Flows for the year ended 30 June 2019
- notes, comprising a summary of significant accounting policies and other explanatory information
- a Certificate from the Chair, the Acting Chief Executive and the General Manager Business Services.

Basis for opinion

I conducted the audit in accordance with the *Public Finance and Audit Act 1987* and Australian Auditing Standards. My responsibilities under those standards are further described in the 'Auditor's responsibilities for the audit of the financial report' section of my report. I am independent of the South Australian Water Corporation. The *Public Finance and Audit Act 1987* establishes the independence of the Auditor-General. In conducting the audit, the relevant ethical requirements of APES 110 *Code of Ethics for Professional Accountants* have been met.

I believe that the audit evidence obtained is sufficient and appropriate to provide a basis for my opinion.

Responsibilities of the Chief Executive and the Board for the financial report

The Chief Executive is responsible for the preparation of the financial report that gives a true and fair view in accordance with the Treasurer's Instructions issued under the provisions of the *Public Finance and Audit Act 1987* and Australian Accounting Standards, and for such internal control as management determines is necessary to enable the preparation of the financial report that gives a true and fair view and that is free from material misstatement, whether due to fraud or error.

In preparing the financial report, the Chief Executive is responsible for assessing the entity's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the entity is to be liquidated or to cease operations, or has no realistic alternative but to do so.

The Board is responsible for overseeing the entity's financial reporting process.

Auditor's responsibilities for the audit of the financial report

My objectives are to obtain reasonable assurance about whether the financial report as a whole is free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes my opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Australian Auditing Standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of this financial report.

As part of an audit in accordance with Australian Auditing Standards, I exercise professional judgement and maintain professional scepticism throughout the audit. I also:

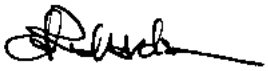
- identify and assess the risks of material misstatement of the financial report, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control

- obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the South Australian Water Corporation's internal control

- evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the Chief Executive
- conclude on the appropriateness of the entity's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the entity's ability to continue as a going concern
- evaluate the overall presentation, structure and content of the financial report, including the disclosures, and whether the financial report represents the underlying transactions and events in a manner that achieves fair presentation.

My report refers only to the financial report described above and does not provide assurance over the integrity of electronic publication by the entity on any website nor does it provide an opinion on other information which may have been hyperlinked to/from the report.

I communicate with the Chief Executive and the Board about, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that I identify during the audit.



Andrew Richardson
Auditor-General
18 September 2019

SA Water

Certification of the Financial Statements

We certify that the:

- Financial statements of SA Water Corporation:
  - are in accordance with the accounts and records of the authority;
    comply with relevant Treasurer's instructions;
  - comply with relevant accounting standards; and
  - present a true and fair view of the financial position of the authority at the end of the financial year and the result of its operations and cash flows for the financial year.
- Internal controls employed by SA Water Corporation over its financial reporting and its preparation of the financial statements have been effective throughout the financial year.

Mark Gobbie
Acting Chief Executive

Jamie Hollamby
GM Business Services

Andrew Fletcher
Chair

Date 16th September 2019

South Australian Water Corporation
Statement of comprehensive income
For the year ended 30 June 2019

	Notes	2019 $'000	2018 $'000
Income			
Revenue from ordinary activities	5	**1,568,608**	1,472,392
Other income	6	**13,861**	22,499
Total income		**1,582,469**	1,494,891
Expenses			
Depreciation and amortisation expense	7	**(360,594)**	(356,774)
Borrowing costs	7	**(329,766)**	(329,500)
Electricity expense		**(82,600)**	(62,063)
Services and supplies		**(181,765)**	(232,637)
Operational and service contracts		**(218,756)**	(184,920)
Employee benefits expense		**(136,508)**	(127,433)
Total expenses		**(1,309,989)**	(1,293,327)
Profit before income tax equivalents		**272,480**	201,564
Income tax expense	8	**(79,637)**	(58,357)
Profit after income tax equivalents		**192,843**	143,207
Other comprehensive income			
Items that will not be reclassified to net result			
Gain on revaluation of infrastructure, plant and equipment assets	28(a)	**116,837**	99,920
Income tax relating to components of other comprehensive income	8(c)	**(32,117)**	(27,390)
Other comprehensive income for the year, net of tax		**84,720**	72,530
Total comprehensive result		**277,563**	215,737
Total comprehensive result for the year is attributable to:			
The SA Government as owner		**277,563**	215,737

The above statement of comprehensive income should be read in conjunction with the accompanying notes.

South Australian Water Corporation
Statement of financial position
As at 30 June 2019

	Notes	2019 $'000	2018 $'000
ASSETS			
Current assets			
Cash and cash equivalents	25	**2,772**	3,966
Receivables	9	**233,886**	203,138
Inventories	10	**8,498**	9,118
Other financial assets	11	**-**	21
Other current assets	12	**12,761**	20,469
Total current assets		**257,917**	236,712
Non-current assets			
Deferred tax assets	13	**40,131**	40,169
Intangible assets	14	**155,603**	151,094
Infrastructure, plant and equipment	15	**14,212,169**	13,888,709
Other non-current assets		**221**	280
Total non-current assets		**14,408,124**	14,080,252
Total assets		**14,666,041**	14,316,964
LIABILITIES			
Current liabilities			
Payables	16	**225,480**	210,294
Financial liabilities/borrowings	17	**39,645**	39,118
Tax liabilities	18	**6,785**	10,167
Provisions	19	**17,370**	17,027
Other current liabilities	20	**15,640**	15,913
Total current liabilities		**304,920**	292,519
Non-current liabilities			
Payables		**2,519**	2,304
Financial liabilities/borrowings	21	**6,671,551**	6,462,021
Deferred tax liabilities	22	**1,677,241**	1,662,569
Provisions	23	**33,960**	29,469
Other non-current liabilities	24	**352,062**	361,466
Total non-current liabilities		**8,737,333**	8,517,829
Total liabilities		**9,042,253**	8,810,348
Net assets		**5,623,788**	5,506,616
EQUITY			
Contributed equity		**204,210**	185,110
Asset revaluation surplus	28(a)	**5,111,844**	5,049,757
Retained earnings	28(b)	**307,734**	271,749
Total equity		**5,623,788**	5,506,616

The above statement of financial position should be read in conjunction with the accompanying notes.

South Australian Water Corporation
Statement of changes in equity
For the year ended 30 June 2019

	Notes	Contributed equity $'000	Asset revaluation surplus $'000	Retained earnings $'000	Total $'000
Balance at 1 July 2018		185,110	5,049,757	271,749	5,506,616
Adjustment on initial adoption of AASB 9	28	-	-	(131)	(131)
Deferred income tax	8(c)	-	-	39	39
Restated total equity at the beginning of the financial year		**185,110**	**5,049,757**	**271,657**	**5,506,524**
Profit for the year		-	-	192,843	192,843
Gain on revaluation on infrastructure, plant and equipment assets	28	-	116,837	-	116,837
Transfer to retained profits on disposal	28	-	(22,594)	-	(22,594)
Transfer from asset revaluation surplus	28	-	-	22,594	22,594
Income tax relating to components of other comprehensive income	8(c)	-	(32,156)	-	(32,156)
Total comprehensive result for the period		**-**	**62,087**	**215,437**	**277,524**
Transactions with the SA Government in their capacity as owners:					
Contributions of equity*		19,100	-	-	19,100
Dividends provided for or paid	32	-	-	(179,360)	(179,360)
		19,100	-	(179,360)	(160,260)
Balance at 30 June 2019		**204,210**	**5,111,844**	**307,734**	**5,623,788**

* In 2018-19, SA Water received $19.1m from the SA Government, to partially fund the Northern Adelaide Irrigation Scheme (NAIS) project, after completing the second milestone of the NAIS project. In accordance with Interpretation 1038 Contributions by Owners made to Wholly-Owned Public Sector Entities, this has been recognised as contributed equity.

	Notes	Contributed equity $'000	Asset revaluation surplus $'000	Retained earnings $'000	Total $'000
Balance at 1 July 2017		173,610	4,989,256	255,925	5,418,791
Profit for the year		-	-	143,207	143,207
Gain on revaluation on infrastructure, plant and equipment assets	28	-	99,920	-	99,920
Transfer to retained profits on disposal	28	-	(12,029)	-	(12,029)
Transfer from asset revaluation surplus	28	-	-	12,029	12,029
Income tax relating to components of other comprehensive income	8(c)	-	(27,390)	-	(27,390)
Total comprehensive result for the period		**-**	**60,501**	**155,236**	**215,737**
Transactions with the SA Government in their capacity as owners:					
Contributions of equity*		11,500	-	-	11,500
Dividends provided for or paid	32	-	-	(139,412)	(139,412)
		11,500	-	(139,412)	(127,912)
Balance at 30 June 2018		**185,110**	**5,049,757**	**271,749**	**5,506,616**

* In 2017-18, SA Water received $11.5m from the SA Government, to partially fund the Northern Adelaide Irrigation Scheme (NAIS) project, after completing the first milestone of the NAIS project. In accordance with Interpretation 1038 Contributions by Owners made to Wholly-Owned Public Sector Entities, this has been recognised as contributed equity.

The above statement of changes in equity should be read in conjunction with the accompanying notes.

South Australian Water Corporation
Statement of cash flows
For the year ended 30 June 2019

	Notes	2019 $'000	2018 $'000
Cash flows from operating activities			
Receipts from customers		**1,463,748**	1,372,647
Payments to suppliers and employees		**(711,280)**	(632,411)
Interest received		**109**	55
Receipts from community service obligations		**139,592**	144,193
Receipts from contributions		**11,123**	10,826
Receipts from government grants		**42**	155
Borrowing costs paid		**(326,992)**	(333,100)
Income tax equivalents paid		**(100,425)**	(75,851)
Net cash inflow from operating activities	26	**475,917**	486,514
Cash flows from investing activities			
Payments for construction and purchase of infrastructure, plant and equipment		**(513,629)**	(406,263)
Payments for intangible assets		**(34,751)**	(31,658)
Proceeds from sale of intangible assets		**13,248**	3,304
Proceeds from sale of infrastructure, plant and equipment		**348**	297
Proceeds from sale of renewable energy certificates		**7,877**	21,495
Net cash (outflow) from investing activities		**(526,907)**	(412,825)
Cash flows from financing activities			
Proceeds from borrowings		**1,314,400**	867,500
Repayment of borrowings		**(1,093,200)**	(801,800)
Proceeds from equity contributions		**19,100**	11,500
Dividends paid	32	**(179,360)**	(139,412)
Repayments of finance lease liability		**(11,144)**	(9,961)
Net cash inflow/(outflow) from financing activities		**49,796**	(72,173)
Net (decrease) increase in cash and cash equivalents		**(1,194)**	1,516
Cash and cash equivalents at the beginning of the financial year		**3,966**	2,450
Cash and cash equivalents at end of period	25	**2,772**	3,966

The above statement of cash flows should be read in conjunction with the accompanying notes.

South Australian Water Corporation
Notes to the financial statements
30 June 2019

1 Summary of significant accounting policies

The South Australian Water Corporation ("SA Water" or the "Corporation") was established on 1 July 1995, as a State owned statutory corporation by the *South Australian Water Corporation Act 1994*, to which the provisions of the *Public Corporations Act 1993* apply. SA Water provides retail water supply and sewerage services in accordance with its licence, provided by *the Water Industry Act 2012* (the Act) which came into operation on 1 July 2012. The Act repealed the *Waterworks Act 1932*, *Sewerage Act 1929* and *Water Conservation Act 1936*.

The Corporation has prepared these financial statements in compliance with section 23 of the *Public Finance and Audit Act 1987*.

(a) *Basis of preparation*

These general purpose financial statements have been prepared in accordance with relevant Australian Accounting Standards and comply with the Treasurer's Instructions and Accounting Policy Statements promulgated under provisions of the *Public Finance and Audit Act 1987*, as well as complying with and Interpretations issued by the Australian Accounting Standards Board and the *Corporations (South Australia) Act 2001*. South Australian Water Corporation is a for-profit entity for the purpose of preparing the financial statements. Where the Treasurer's Instructions are more prescriptive than the equivalent Australian Accounting Standards, SA Water has applied the Treasurer's Instructions in the application of accounting frameworks.

The financial statements are prepared based on a 12 month reporting period and presented in Australian currency/ dollars. The historical cost convention is used unless a different measurement basis is specifically disclosed in the note associated with the item measured'

The Corporation's Statement of Comprehensive Income, Statement of Financial Position and Statement of Changes in Equity have been prepared on an accrual basis and are in accordance with the historical cost convention, except for infrastructure, plant and equipment, derivative financial instruments and renewable energy certificates which are measured on a fair value basis in accordance with the valuation policy applicable.

Change in accounting policy

Treasurer's Instructions (Accounting Policy Statements)

Treasurer's Instructions (Accounting Policy Statements) 2019 were issued by the Treasurer under the *Public Finance and Audit Act 1987*.

The new Accounting Policy Statements have largely been prepared on a no-policy change basis. Changes that have an impact on these financial statements are:

- removal of the additional requirement to report transactions with the SA Government.
- increasing the bands from $10,000 to $20,000 for employee and board member reporting.

These changes, however, do not impact on the amounts reported in the financial statements.

1 Summary of significant accounting policies (continued)

(a) *Basis of preparation (continued)*

Adoption of new accounting standards as at 30 June 2019

The Corporation has applied the following standards for the first time in the annual reporting period ended 30 June 2019:

AASB 9 Financial Instruments

AASB 9 Financial Instruments replaces the provisions of *AASB 139 Financial Instrument Recognition and Measurement* that relates to recognition, classification and measurement of financial assets and financial liabilities, derecognition of financial instruments, impairment of financial assets and hedge accounting. A review of this new standard identified that the only change in accounting policy and adjustments that were required related to the new impairment model associated with financial assets.

AASB 9 replaces the 'incurred loss' model in AASB 139 with an 'expected credit loss' model when determining the impairment of trade receivables. The new impairment requirements result in a provision being applied to all receivables rather than only on those receivables that are credit impaired. This is different to the incurred loss model which only recognised impairment losses when there was objective evidence of impairment as a result of an actual loss event occurring.

The Corporation has adopted the simplified approach under AASB 9 and measured lifetime expected credit losses on all trade receivables using historical write-off experience.

In accordance with the transitional provisions and the Treasurer's Instructions (Accounting Policy Statements), AASB 9 was adopted without restating comparative information. Therefore, all measurement related adjustments arising from the first time adoption of AASB 9 are recognised in retained earnings at 1 July 2018.

The impact of this change in accounting policy on the financial statements at 1 July 2018 is as follows:

An increase in the allowance for doubtful debts of $0.13m and a decrease in retained profits of $0.1m net of tax.

AASB 15 Revenue from contracts with customers

AASB 15 Revenue from contracts with customers replaces *AASB 18 Revenue* and related interpretations.The core principle of the Standard is that revenue is recognised to represent the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services.

To determine when and how much revenue must be recognised the standard requires the Corporation to follow a 5-step process:

- Identifying the contract with a customer
- Identifying the performance obligations
- Determining the transaction price
- Allocating the transaction price to the performance obligations
- Recognising revenue when/as performance obligations are satisfied

Revenue is recognised either at a point in time or over time, when (or as) SA Water satisfies performance obligations by transferring the control of the promised goods or services to its customers.

The Corporation recognises contract liabilities for consideration received in respect of unsatisfied performance obligations and reports these amounts as contract liabilities in the Statement of Financial Position.

The implementation of this new standard did not have any impact on the timing or amount of revenue recognised by the Corporation during the period.

1 Summary of significant accounting policies (continued)

(a) *Basis of preparation (continued)*

Comparative information

The presentation and classification of items in the financial statements are consistent with prior periods except where specific accounting standards and/or accounting policy statements have required a change.

Where presentation or classification of items in the financial statements have been amended, comparative figures have been adjusted to conform to changes in presentation or classification in these financial statements unless impracticable.

The restated comparative amounts do not replace the original financial statements for the preceding period.

Rounding

All amounts in the financial statements and accompanying notes have been rounded to the nearest thousand dollars ($'000) unless otherwise stated.

(b) *Taxes*

SA Water is liable for income tax equivalents, land tax and council rate equivalents, payroll tax, fringe benefits tax, goods and services tax (GST) and emergency services levy.

Income tax equivalents

From 1 July 2001, the Corporation has operated under the National Tax Equivalent Regime (NTER) pursuant to the Memorandum of Understanding on NTER between the Commonwealth of Australia, the Commissioner of Taxation and all of the States and Territories. The NTER is administered by the Australian Taxation Office.

Income tax expense is calculated in accordance with *AASB 112 Income Taxes* using the balance sheet liability method. The income tax expense for the period is the tax payable on the current period's taxable income measured at the current national income tax rate adjusted for permanent differences and movements in deferred tax assets and liabilities.

Deferred tax assets and liabilities are recognised for temporary differences arising between the tax bases of assets and liabilities and their carrying amounts in the financial statements. The measurement of deferred tax assets and liabilities reflects the tax consequences that would follow from the manner in which the Corporation expects, at the reporting date, to recover or settle the carrying amount of its assets and liabilities. Deferred tax assets and liabilities are recognised at the tax rates expected to apply when the assets are recovered or liabilities are settled. Current and deferred tax is recognised as an expense in the Statement of Comprehensive Income except where it relates to items that are credited or debited to equity, in which case the deferred tax is also recognised directly in equity.

Deferred tax assets are recognised to the extent that it is probable that future tax profits will be available against which deductible temporary differences can be utilised.

Land tax and council rate equivalents

The charge for land tax and council rate equivalents has been calculated by Revenue SA, based on valuations supplied by the Valuer General.

Goods and services tax

Income, expenses and assets are recognised net of the amount of GST except:

1 Summary of significant accounting policies (continued)

(b) *Taxes (continued)*
Goods and services tax (continued)

- when the GST incurred on a purchase of goods or services is not recoverable from the Australian Taxation Office, in which case the GST is recognised as part of the cost of acquisition of the asset or as part of the expense item applicable; and

- receivables and payables, which are stated with the amount of GST included.

The net amount of GST recoverable from, or payable to, the Australian Taxation Office is included as part of receivables or payables in the Statement of Financial Position.

Cash flows are included in the Statement of Cash Flows on a gross basis and the GST component of cash flows arising from investing and financing activities, which is recoverable from, or payable to, the Australian Taxation Office is classified as part of operating cash flows.

1 Summary of significant accounting policies (continued)

(c) *New accounting standards and interpretations not yet effective*

The Corporation did not voluntarily change any of its accounting policies during 2018-19.

Australian accounting standards and interpretations that have recently been issued or amended but are not yet effective, have not been adopted by the Corporation for the period ending 30 June 2019.

AASB 16 Leases will require the Corporation to recognise, as a lessee, right-of-use assets and lease liabilities for all operating leases with a term of more than 12 months, unless the underlying asset within those leases is of low value. In accordance with Treasurer's Instructions a low value threshold of $15,000 must be adopted and to include motor vehicles leased from the South Australian Financing Authority (SAFA) with a remaining lease term of less than 12 months. AASB 16 replaces *AASB 117 Leases* and *Interpretation 4 Determining whether an arrangement contains a lease*, *Interpretation 115 Operating Leases - Incentives and Interpretation*, and *Interpretation 127 Evaluating the Substance of Transactions Involving the Legal Form of a Lease*. This new standard is effective for the financial year commencing 1 July 2019.

In accordance with Treasurer's Instructions on transition to the adoption of the new standard the Corporation must adopt the partial retrospective approach. Under this approach the Corporation has adopted the practical expedient whereby the lease liability is recognised at the present value of the remaining lease payments, discounted using the lessee's incremental borrowing rate at the date of initial application. The right of use asset is recognised at an amount equal to the related lease liability, adjusted by the amount of any prepaid or accrued lease payments recognised in the statement of financial position immediately before the date of initial application. The incremental borrowing rate that will be adopted is the rate that has been published by the Department of Treasury and Finance (DTF) on 1 July 2019. A number of rates have been provided and the rate applied is the one that most closely aligns with the remaining lease term at 1 July 2019 plus the guarantee fee that is applicable to SA Water.

The estimated impact is based on applying AASB 16's transition approach to those leases identified as leases by the Corporation prior to 1 July 2019. The incremental borrowing rates applied to estimate the lease liability were SAFA's forecast interest loans to SA Government agencies.

The estimates provided below include non-lease components. Further work is required to separate these components prior to recognition of the right-of-use assets and lease liabilities on 1 July 2019.

	As at 1 July 2019 $'000
Assets	
Right-of-use assets	57,823
Finance lease receivable	4,801
Total Assets	62,624
Liabilities	
Lease liabilities	63,200
Other liabilities (lease incentive liabilities)	(576)
Total Liabilities	62,624
Net impact on Statement of Financial Position	-

1 Summary of significant accounting policies (continued)

(c) *New accounting standards and interpretations not yet effective (continued)*

AASB 16 will also impact on the Statement of Comprehensive Income. The operating lease expense previously included in supplies and services will mostly be replaced with:

- a depreciation expense that represents the use of the right-of-use asset; and
- borrowing costs that represent the cost associated with financing the right-of-use asset.

The estimated impact on 2019-20 Statement of Comprehensive Income is set out below:

	2020 $'000
Interest revenue	106
Rent revenue	(1,092)
Total Revenue	(986)
Depreciation and amortisation	14,589
Supplies and services	(15,974)
Borrowing costs	1,462
Total Expenses	77
Net impact on Statement of Comprehensive Income	(1,063)

2 Financial risk management

(a) *Market risk*

(i) Interest rate risk exposures - financial liabilities

The Corporation's financial liabilities are exposed to interest rate risk. The Corporation constantly analyses its interest rate exposure and consideration is given to potential renewals of existing positions and the use of alternative risk mitigation strategies. To minimise interest rate volatility, the Corporation enters into forward starting loans (FSLs) with the South Australian Financing Authority (SAFA) where it agrees to borrow specified amounts in the future at a pre-determined interest rate. FSLs are non-derivative financial instruments which are outside the scope of AASB 9 and AASB 139, and are disclosed as unrecognised fixed rate loan commitments. Refer note 2(c).

A key component of the Corporation's interest rate risk management framework is the requirement for a permissible duration range to be maintained, which reflects the average term to maturity of the Corporation's core debt portfolio. As part of a Treasury Risk Management Policy review, the permissible duration range is 2.1 - 6.5 years with effect from 9 January 2019. The permissible range prior to this was 2.1 - 4.9 years.

The following sensitivity analysis is based on the interest rate risk exposures in existence at the balance date, assuming all other variables are held constant. The movements in post tax profit and equity for the year are due to higher/lower interest costs from floating rate debt and cash balances. The movement in interest expense is estimated by applying the interest rate movement to the balance of floating rate debt and cash balances outstanding at balance date.

At 30 June 2019 it has been assumed that a reasonable possible shift in interest rates over the next reporting period could be 1% upwards and 0.5% downwards.

		Interest rate risk			
		-0.5%		+1.0%	
30 June 2019	Carrying amount $'000	Profit $'000	Equity $'000	Profit $'000	Equity $'000
Financial assets					
Cash and cash equivalents	2,772	(10)	(10)	19	19
Financial liabilities					
Short term borrowings	(27,174)	95	95	(190)	(190)
Total increase/(decrease)		85	85	(171)	(171)

		Interest rate risk			
		-0.5%		+0.5%	
30 June 2018	Carrying amount $'000	Profit $'000	Equity $'000	Profit $'000	Equity $'000
Financial assets					
Cash and cash equivalents	3,966	(14)	(14)	14	14
Financial liabilities					
Short term borrowings	(27,974)	98	98	(98)	(98)
Total increase/(decrease)		84	84	(84)	(84)

2 Financial risk management (continued)

(a) *Market risk (continued)*

(ii) Electricity price risk exposures

The Corporation has established a multi-faceted risk management framework incorporating an overarching Energy Price Risk Management Policy to manage its energy exposure in the wholesale National Electricity Market.

The energy portfolio is managed to mitigated the associated financial risk through activities including demand management, electricity self-generation and financial market hedging.

The Corporation monitors its energy consumption profile and uses permitted electricity derivatives where the pre-determined risk limits are forecast to be exceeded, to manage its exposure to electricity spot prices on energy purchases.

Sensitivity analysis is based on electricity price risk exposures in existence at balance date assuming all other variables are held constant. Movements in post-tax profit and equity for the year are due to higher electricity costs associated with electricity purchased at a floating market price.

At 30 June 2019 sensitivity analysis was not applicable as the carrying value of electricity derivatives was fully de-recognised.

At 30 June 2018 sensitivity analysis was not applicable as the carrying value ($0.021m) of electricity derivatives was not subject to any market movements.

(b) *Credit risk*

Credit risk is the risk of financial loss to the Corporation resulting from the failure of a customer or a counterparty to a financial instrument to meet its financial obligations as and when they fall due.

Credit management policies and procedures are in place to ensure an appropriate level of due diligence in relation to credit history and financial integrity for financial transactions undertaken by SA Water. In addition, receivable balances are monitored on an ongoing basis and actions to recover outstanding debt are instigated in accordance with the Corporation's collection policies and practices with the result that exposure to bad debts is not significant.

Under the Water Industry Act 2012, water rates and charges are secured via a first charge on the property.

The Corporation has no significant concentration of credit risk.

All borrowings are directly undertaken by SAFA on behalf of the Corporation. The Corporation does not hold any credit derivatives to offset its credit exposure.

Electricity derivatives are entered into on organised exchanges and with highly rated financial counterparties.

(c) *Liquidity risk*

The Corporation has in place a Treasury Risk Management Policy to provide a prudential framework for managing liquidity risk. The policy was reviewed in 2018 and approved by the Treasurer on 09 January 2019. SA Water is required to hold in cash or committed facilities appropriate capacity to meet immediate funding requirements and provide any unforeseen cash flow needs. Liquidity levels are reviewed on a daily basis.

2 Financial risk management (continued)

(c) *Liquidity risk (continued)*

Contractual maturities

The table below analyses the Corporation's financial liabilities into the relevant groupings based on the remaining period at the reporting date to the contractual maturity date. The amounts disclosed are the future contractual undiscounted cash flows. The contractual cash flows for fixed rate and floating rate borrowings include principal, interest, guarantee fees and SAFA margins.

Maturing borrowings are included in the table at their maturity date and are refinanced at prevailing market interest rates. Fixed rate borrowings are interest only with no fixed repayment date for the principal component. Any principal component of fixed rate borrowings that has already been refinanced prior to the reporting date via forward starting loans (FSLs) is excluded from the relevant maturity grouping. The future cash flows relating to FSLs are separately disclosed in the table below as unrecognised fixed rate loan commitments.

At 30 June 2019	**Less than 1 year $'000**	**Between 1 and 2 years $'000**	**Between 2 and 5 years $'000**	**Over 5 years $'000**	**Total contractual cash flows $'000**
Non-derivatives					
Non-interest bearing liabilities*	**132,239**	**-**	**-**	**-**	**132,239**
Fixed rate borrowings	**2,428,681**	**799,897**	**1,344,495**	**3,560,378**	**8,133,451**
Floating rate borrowings	**27,195**	**-**	**-**	**-**	**27,195**
Unrecognised fixed rate loan commitments**	**18,924**	**33,237**	**478,334**	**499,485**	**1,029,980**
Finance lease liabilities	**23,509**	**23,509**	**30,765**	**8,399**	**86,182**
Total non-derivatives	**2,630,548**	**856,643**	**1,853,594**	**4,068,262**	**9,409,047**

At 30 June 2018	**Less than 1 year $'000**	**Between 1 and 2 years $'000**	**Between 2 and 5 years $'000**	**Over 5 years $'000**	**Total contractual cash flows $'000**
Non-derivatives					
Non-interest bearing liabilities*	122,456	-	-	-	122,456
Fixed rate borrowings	968,606	1,988,898	1,057,815	3,412,888	7,428,207
Floating rate borrowings	27,949	-	-	-	27,949
Unrecognised fixed rate loan commitments**	8,549	18,815	56,400	494,030	577,794
Finance lease liabilities	23,266	23,266	50,976	11,076	108,584
Total non-derivatives	1,150,826	2,030,979	1,165,191	3,917,994	8,264,990

* Non-interest bearing liabilities disclosed are financial liabilities at cost and exclude amounts relating to statutory payables such as tax equivalents and commonwealth tax.

** For 30 June 2019, the principal component relating to FSLs that was refinanced prior to reporting date has been excluded from the less than 1 year category, and included in the 2-5 years category and over 5 years category in which the FSLs will mature (2018 FSLs were excluded from the less than 1 year category, and included in the over 5 years category).

2 Financial risk management (continued)

(d) *Fair value measurements*

The fair value of financial assets and financial liabilities is the price that would be received to sell the asset or paid to transfer a liability in an orderly transaction between market participants at the balance date.

(i) Fair value of financial liabilities

The fair value for long term borrowings is estimated by discounting the anticipated future cash flows to their present value based on current market interest rates at the respective balance dates.

A reliable estimate of the fair value for finance leases cannot be determined due to the unique nature of the leasing arrangements. Refer note 17(b).

The carrying amounts and fair values of long term borrowings at balance date are:

	2019		2018	
	Carrying amount $'000	**Fair value $'000**	Carrying amount $'000	Fair value $'000
Long term borrowings	**6,635,000**	**7,159,424**	6,413,000	6,575,893

The fair values of all other financial liabilities approximate the carrying values.

3 Fair value measurements

The Corporation measures and recognises the following financial and non-financial assets at fair value on a recurring basis:

- Financial assets (note 11);
- Land and buildings (note 15);
- Leased water and sewer infrastructure (note 15);
- Water and Sewer infrastructure (note 15);
- Sewer infrastructure (note 15);
- Plant and equipment (note 15); and
- Other property, plant and equipment (note 15).

(a) *Fair value measurements*

AASB 13 Fair Value Measurement requires disclosure of fair value measurements by level of the following fair value measurement hierarchy (consistent with the hierarchy applied to financial assets and financial liabilities):

(a) quoted prices (unadjusted) in active markets for identical assets or liabilities (level 1);

(b) inputs other than quoted prices included within level 1 that are observable for the asset or liability, either directly or indirectly (level 2); and

(c) inputs for the asset or liability that are not based on observable market data (unobservable inputs) (level 3).

The following table presents the Corporation's non-financial assets measured and recognised at fair value at 30 June 2019.

(i) Recognised fair value measurements

30 June 2019	**2019 $'000**	**Level 1 $'000**	**Level 2 $'000**	**Level 3 $'000**
Recurring fair value measurements				
Non- Financial Assets				
Buildings	**21,523**	**-**	**-**	**21,523**
Land	**385,806**	**-**	**385,806**	**-**
Water infrastructure	**8,827,677**	**-**	**-**	**8,827,677**
Sewer infrastructure	**4,203,179**	**-**	**-**	**4,203,179**
Plant and equipment and other	**120,244**	**-**	**-**	**120,244**
Total non-financial assets	**13,558,429**	**-**	**385,806**	**13,172,623**
Total recurring financial and non-financial assets	**13,558,429**	**-**	**385,806**	**13,172,623**

3 Fair value measurements (continued)

(a) *Fair value measurements (continued)*
(i) Recognised fair value measurements (continued)

30 June 2018	2018 $'000	Level 1 $'000	Level 2 $'000	Level 3 $'000
Recurring fair value measurement				
Financial assets				
Electricity derivatives	21	21	-	-
Total financial assets	21	21	-	-
Non-financial assets				
Buildings	23,154	-	-	23,154
Land	375,508	-	375,508	-
Water infrastructure	8,719,434	-	-	8,719,434
Sewer infrastructure	4,243,714	-	-	4,243,714
Plant and equipment and other	127,151	-	-	127,151
Total non-financial assets	13,488,961	-	375,508	13,113,453
Total recurring financial and non-financial assets	13,488,982	21	375,508	13,113,453

There were no transfers between levels for recurring fair value measurements during the period.

The Corporation's policy is to recognise transfers into and transfers out of fair value hierarchy levels as at the end of the reporting period.

(ii) Disclosed fair values

The Corporation has a number of assets and liabilities which are not measured at fair value, but for which fair values are disclosed in the notes.

The carrying amounts of cash and cash equivalents, trade receivables, payables and other current liabilities are assumed to approximate their fair values due to their short-term nature. SA Water does not hold any non-current receivables.

The fair value of financial instruments that make up the long term borrowings disclosed in note 2d(i) have been deemed to be Level 2 in the Fair Value Hierarchy. The valuation is based on SAFA bond rates (market observable) which reflects the cost of funds. The carrying amount of short term borrowings approximates its fair value, as the impact of discounting is not significant.

(b) *Valuation techniques used to derive level 3 fair values*

(i) Recurring fair value measurements

The valuation techniques used to derive level 3 fair values are described in note 15.

Although unobservable inputs were used in determining fair value, and are subjective, the Corporation considers that the overall valuation would not be materially affected by changes to the existing assumptions. There were no changes in valuation techniques during the reporting period.

3 Fair value measurements (continued)

(b) *Valuation techniques used to derive level 3 fair values (continued)*
(ii) Non-recurring fair value measurements

SA Water has no non-recurring fair value measurements.

(iii) Valuation inputs and relationships to fair value

Refer to note 15 for information relating to unobservable inputs and valuation processes.

(c) *Fair value measurements using significant unobservable inputs (level 3)*

The following tables are reconciliation fair value measurements for recurring fair value measurements using significant unobservable inputs (level 3):

	Buildings $'000	Water Infrastructure $'000	Sewer Infrastructure $'000	Plant and Equipment and Other $'000	Total $'000
Opening balance 1 July 2018	23,154	8,719,434	4,243,714	127,151	13,113,453
Acquisitions	1,287	185,166	92,518	13,126	292,097
Disposals	-	-	-	(159)	(159)
Asset write-off	-	(936)	(214)	-	(1,150)
Depreciation	(3,688)	(225,816)	(85,785)	(23,421)	(338,710)
	(3,688)	(226,752)	(85,999)	(23,421)	(339,860)
Total gain (losses) for the period in other comprehensive income:					
Revaluation increment/ (decrement)	770	149,829	(47,054)	3,547	107,092
	770	149,829	(47,054)	3,547	107,092
Closing balance 30 June 2019	**21,523**	**8,827,677**	**4,203,179**	**120,244**	**13,172,623**

3 Fair value measurements (continued)

(c) *Fair value measurements using significant unobservable inputs (level 3) (continued)*

	Buildings $'000	Water Infrastructure $'000	Sewer Infrastructure $'000	Plant and Equipment and Other $'000	Available-for-Sale Financial Assets $'000	Total $'000
Opening balance at 1 July 2017	23,848	8,709,210	4,102,385	119,313	35,170	12,989,926
Acquisitions	2,208	210,390	152,934	28,751	-	394,283
Transfers	-	-	35,170	-	(35,170)	-
Disposals	-	-	-	(36)	-	(36)
Total gain (losses) for the period in the net result:						
Asset write-off	-	(15,352)	(10,849)	-	-	(26,201)
Depreciation	(3,679)	(216,473)	(91,538)	(24,092)	-	(335,782)
	(3,679)	(231,825)	(102,387)	(24,092)	-	(361,983)
Total gain (losses) for the period in other comprehensive income:						
Revaluation increment/ (decrement)	777	31,659	55,612	3,215	-	91,263
	777	31,659	55,612	3,215	-	91,263
Closing balance 30 June 2018	**23,154**	**8,719,434**	**4,243,714**	**127,151**	**-**	**13,113,453**

4 Critical accounting estimates and judgements

The preparation of financial statements requires the use of certain critical accounting estimates. It also requires management to exercise judgement in the process of applying the Corporation's accounting policies.

Estimates and judgements are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances. Revisions to accounting estimates are recognised in the period in which the estimate is revised and in any future periods affected.

In particular, the areas involving a higher degree of judgement or complexity, or areas where assumptions and estimates are significant to the financial statements, are listed below:

- Contributed assets (refer note 5);
- Renewable energy certificates (refer note 12);
- Impairment of assets (refer note 15);
- Valuation and useful lives of assets (refer note 15, 7);
- Provision for long service leave (refer note 23); and
- Provision for workers compensation (refer note 23).

5 Revenue from ordinary activities

	2019 $'000	2018 $'000
Revenue from contracts with customers		
Water and sewer rates and charges	**1,246,762**	1,164,220
Recoverable works	**87,607**	55,368
Fees and charges	**45,953**	47,699
Contributed assets	**35,485**	49,154
	1,415,807	1,316,441
Other revenue		
Community Service Obligations	**140,267**	144,788
Government grants	**9,313**	9,466
Rents	**3,049**	1,515
Miscellaneous	**97**	119
Interest	**75**	63
	152,801	155,951
Total	**1,568,608**	1,472,392

Water and sewer rates and charges

SA Water sets its water and sewer prices in accordance with a pricing methodology that is guided by the principles outlined in the National Water Initiative and the South Australian Government's statewide pricing policy. Statewide pricing means that most customers pay the same price regardless of where they live or the actual cost of providing the service. Prices are set in line with the revenue caps set by the Essential Services Commission of South Australia (ESCOSA). The water demand and sewerage customer growth inputs are consistent with ESCOSA's Regulatory Determination.

The revenue for water and sewer charges is comprised of the following:

Water usage charge

This is a volumetric charge based on the number of kilolitres of water that are used by the customer. This is charged to customers for costs associated with pumping, treatment and the filtration of water. The supply of water to the customer is deemed to be a distinct performance obligation under the contract with the customer.

Revenue is recognised over time as water is received and consumed by the customer. The amount of revenue recognised is comprised of water usage billed for the period and an accrual for unbilled usage at 30 June.

The underlying revenue recognition principle is to recognise revenue in the period it is consumed. The period ended 30 June calculation is based on state-wide water supplied, customer billing information, and an assessment of non-revenue water (non-revenue water includes water produced and then lost or unaccounted for, such as evaporation, firefighting and leaks).

5 Revenue from ordinary activities (continued)

Water and sewer rates and charges (continued)

Water access charge

This is a fixed charge that is billed to customers whose properties have been provided with access to the water supply network (connected or unconnected). This is charged to customers for costs associated with building, maintaining and replacing water mains, pipes, reservoirs and other water infrastructure. Commercial customers are charged based on the capital value of their property subject to a minimum charge. All other customers receive a fixed charge equivalent to the minimum charge. Commercial water charges are updated every year on the basis of the latest Valuer General property values.

A performance obligation exists to enable customers to have access to SA Water's water infrastructure. Revenue is recognised over time as customers require access to the delivery of water services. All customers are billed quarterly with the last bill of the year being for the period ended 30 June. Revenue is recognised as the performance obligation is satisfied. It is at this point that customer bills are raised.

Sewerage access charge

Properties that have been provided with access to the sewerage network (connected or unconnected) pay this charge. This is a charge that is billed to the customer quarterly for the removal and treatment of sewerage and wastewater. Charges are associated with building, maintaining and replacing sewer pipes, sewage pump stations, sewage treatment plants and other sewerage infrastructure.

A performance obligation exists to enable customers to have access to SA Water sewer infrastructure. Revenue is recognised over time as customers require access to sewer services. All customers are billed quarterly with the last bill of the year being for the period ended 30 June. Revenue is recognised as the performance obligation is satisfied. It is at this point that customer bills are raised.

Sewerage charges are updated every year on the basis of the latest Valuer General property values.

Community service obligations (CSOs)

The Corporation is required under its charter to provide a number of non-commercial services to the community on behalf of the Government. The Government provides SA Water with funding to compensate for these non commercial activities. The main CSOs relate to under recovery of country water and sewer services (due to the requirement for state wide pricing) and the provision of water and sewer concessions to certain properties e.g. charities, churches, public schools and remote communities.

The CSO revenue is recognised as the services are provided.

Contributed assets

Contributed assets principally arise from:

(i) Mains Extensions Contributions

Customers or Developers who make a contribution where a service or connection has been requested that will require construction of a new main.

A performance obligation exists to construct infrastructure for customers based on the cash contributions that are received by SA Water. This performance obligation is satisfied over time and revenue recognised when the constructed assets are practically completed. When the customer initially makes the payment the amount received is recognised as a contract liability.

5 Revenue from ordinary activities (continued)

Contributed assets (continued)

(ii) Gifted Assets:

Developers who make contributions where water and sewer infrastructures are constructed by developers and transferred to SA Water. The contribution recognised is equivalent to the fair value of these assets that is estimated using the depreciated modern equivalent replacement cost.

The performance obligation for assets that are constructed by developers and gifted to SA Water for nil value, is satisfied and contributed asset revenue recognised when the ownership of the constructed assets is transferred to SA Water.

(iii) Miscellaneous Capital Contributions

The Corporation constructs the infrastructure at the developer's request.

The performance obligation is satisfied over time and revenue recognised at key milestones during the construction of the asset, and when the asset is practically complete.

(iv) Augmentation Cash Contributions

When an individual development forms part of a larger area where further development will occur, rather than only consider what upgrade work is required for the individual development, an augmentation charge can be established to fund the infrastructure required to serve the total area to be developed.

An augmentation charge may also be applied where there are a number of existing properties not currently connected to a service offered by SA Water.

Revenue is recognised when the customer has access to water and sewer services which is when the cash contribution is received. The performance obligation is satisfied at a point in time when the customer has access to water and sewer services.

The administration fees associated with the processing of an application are treated as a separate distinct performance obligation. Revenue is recognised at a point in time when payment is received from the customer.

Recoverable works

Revenue derived from the provision of services to external parties is recognised to the extent that it is probable that the economic benefits will flow to the Corporation and the revenue can be reliably measured.

SA Water is requested by local councils and other government departments to undertake capital works and make alterations to the water and sewer network in accordance with contract specifications. The performance obligation for these contracts is satisfied over time as the work is undertaken.

Revenue is recognised when the works are practically completed, and the customer is billed for costs incurred on the project.

SA Water provides a comprehensive range of water and wastewater services including sampling, analysis, advice and research. The performance obligation for these contracts is satisfied at a point in time. Revenue is recognised as customers are billed, which is after testing has been undertaken and the results have been reported to the customer.

5 Revenue from ordinary activities (continued)

Fees and charges

This includes ancillary services that are associated with the provision of water and sewer services. These services include the connection of the customer to the water and sewer network. A performance obligation exists for SA Water to connect customers to the water and sewer network. As the service provided requires the construction of an asset, revenue is recognised over time as the constructed assets are practically completed. In accordance with the contract with the customer, payment must be received before works can be undertaken. When the customer initially makes the payment, the amount received is recognised as a contract liability. For other fees and charges the performance obligation is satisfied and revenue recognised at a point in time once the service has been provided by SA Water.

A performance obligation also exists to provide customers access to dispose of hazardous waste through SA Water infrastructure. The amount charged is based on volume of waste that is disposed. Revenue recognition occurs as services are provided.

Government grants

In accordance with *AASB 120 Accounting for Government Grants and Disclosure of Government Assistance*, grants from the Government are recognised at their fair value when there is reasonable assurance that the grant will be received and the Corporation will comply with all attached conditions to the grant.

Government grants relating to construction of infrastructure, plant and equipment are initially recognised as unearned revenue (current and non-current liability) and then transferred to income over the periods, and in the proportions, in which depreciation on those assets is charged.

5 Revenue from ordinary activities (continued)

Disaggregation of revenue from contracts with customers

In accordance with AASB 15, revenue has been disaggregated based on the provision of water and wastewater services to customers.

30 June 2019	**Water $'000**	**Wastewater $'000**	**Total $'000**
Revenue from contracts with customers			
Water and sewer rates and charges	**893,176**	**353,586**	**1,246,762**
Recoverable works	**86,320**	**1,287**	**87,607**
Fees and charges	**23,984**	**21,969**	**45,953**
Contributed assets	**19,513**	**15,972**	**35,485**
Total revenue from contracts with customers	**1,022,993**	**392,814**	**1,415,807**

30 June 2018	Water $'000	Wastewater $'000	Total $'000
Revenue from contracts with customers			
Water and sewer rates and charges	824,030	340,190	1,164,220
Recoverable works	54,624	744	55,368
Fees and charges	23,999	23,700	47,699
Contributed assets	24,697	24,457	49,154
Total revenue from contracts with customers	927,350	389,091	1,316,441

6 Other income

	2019 $'000	2018 $'000
Net gain on disposal of infrastructure, plant and equipment	**190**	262
Net gain on disposal of water allocations	**13,109**	3,256
Reversal of prior year infrastructure, plant and equipment revaluation decrement	**553**	651
Net gain on disposal of renewable energy certificates	**-**	18,330
Net gain from electricity derivatives at fair value through profit and loss	**9**	-
	13,861	22,499

The gain or loss on disposal of non-current assets is recognised at the date that control of the asset passes to the buyer. The gain or loss on disposal is calculated as the difference between the carrying amount of the asset at the time of the disposal and net proceeds from the sale. Upon disposal or derecognition, any asset revaluation surplus relating to a particular asset being sold is transferred to retained earnings.

7 Expenses

	2019 $'000	2018 $'000
Profit before income tax includes the following specific expenses:		
Depreciation (note 15)		
Buildings	**3,688**	3,679
Plant and equipment	**2,609**	2,486
Other	**20,812**	21,606
Infrastructure assets - sewer	**85,786**	91,538
Infrastructure assets - water	**225,817**	216,473
Amortisation (note 14)		
Computer software	**20,182**	19,292
ADP intangible	**1,700**	1,700
Total depreciation and amortisation	**360,594**	356,774
Borrowing costs		
Interest paid/payable on short term and long term borrowings	**323,327**	321,877
Finance charges on capitalised leases	**6,439**	7,623
Total borrowing costs	**329,766**	329,500
Net loss from electricity derivatives at fair value through profit and loss	**-**	1,110
Finance lease contingent rentals	**5,531**	5,500
Operating lease minimum lease payments	**16,383**	16,369
Net bad and doubtful debts expense including movements in allowance for doubtful debts	**86**	119
Infrastructure, plant and equipment revaluation decrement	**-**	1,818
Write-off in value of infrastructure, plant. equipment, and capital WIP	**4,025**	31,841
Write-off in value of purchased seasonal water allocations	**-**	37,959
Net loss on disposal of renewable energy certificates	**5,228**	-
Superannuation contribution	**18,021**	17,415
Consultancy costs		
Less than $10,000 (Number 2019: 5; 2018: 6)	**14**	31
Between $10,000 and $50,000 (Number 2019: 10; 2018: 8)	**318**	168
Greater than $50,000 (Number 2019: 2; 2018 3)	**174**	266
	506	465

7 Expenses (continued)

Superannuation

The amount charged to the Statement of Comprehensive Income represents the contributions made by the Corporation to the superannuation plan in respect of employment services of current staff. The contributions are made to the state government superannuation scheme and several non-state government superannuation schemes. With relation to the state government superannuation scheme, the Department of Treasury and Finance centrally recognises the superannuation liability in the whole of government financial statements.

Depreciation

Infrastructure, buildings, plant and equipment and other assets are depreciated using the straight line method over their estimated useful lives ranging from 2 to 170 years. The useful lives of assets are reviewed annually and have been assessed as follows:

Class of assets	Useful life (years)
- Water and sewer	7 - 170 years
- Water and sewer leased assets	20 - 50 years
- Buildings	50 years
- Other	2 - 50 years
- Plant and equipment	3 - 15 years

The method of depreciation has regard to the underlying nature of the assets and their expected use in operations of the Corporation. Work in progress is not depreciated until assets are completed and have been commissioned for operation.

Borrowing costs

Borrowing costs include interest expense, government guarantee fees, South Australian Finance Authority (SAFA) margins and finance lease charges.

In accordance with the *Treasurer's Instructions (Accounting Policy Statements)* and *AASB 123 Borrowing Costs*, borrowing costs attributable to the acquisition or construction of infrastructure, plant and equipment are capitalised after considering materiality.

The Corporation has not capitalised borrowing costs in the year as the proportion related to the acquisition and construction of infrastructure was assessed as not material.

Leases are classified at their inception as either operating or finance leases based on the economic substance of the agreement in order to reflect the risks and benefits incidental to ownership.

The Corporation's Treasury Risk Management Policy and Energy Price Risk Management Policy provide a prudential framework for the management of the Corporation's financial risks including interest rate risk, foreign exchange price risk and commodity price risk. Within the parameters of the Corporation's Treasury Risk Management and Energy Price Risk Management Policies, SA Water utilises derivative financial instruments for foreign exchange and commodity price risk to implement appropriate financial risk mitigation strategies. Interest rate risk arising from borrowings is managed in accordance with the debt management strategies outlined in note 2(a)(i).

7 Expenses (continued)

Operating leases

Minimum lease payments of operating leases, where the lessor effectively retains substantially all of the risks and benefits of ownership of the leased items, are recognised as an expense in the Statement of Comprehensive Income. Equal payments are made over the accounting periods covered by the lease term, except where an alternative basis is more representative of the pattern of benefits to be derived from the leased property.

Finance leases

Leases for infrastructure assets, where substantially all the risks and benefits incidental to ownership of the asset but not the legal ownership are assumed by the Corporation, are classified as finance leases (refer note 17, 21). Finance leases are capitalised and depreciated over the useful life of the asset in accordance with *AASB 117 Leases*.

The Corporation has previously entered into Build Own Operate Transfer (BOOT) agreements for a number of infrastructure facilities. These BOOT agreements include the requirement for an ongoing availability tariff, as escalated over time by certain indices, for the term of the agreement.

BOOT agreements have been classified as finance leases, with a lease asset and lease liability being recognised upon commissioning of the underlying asset. The lease asset is brought to account at the fair value of the underlying assets constructed. The equivalent liability is recognised at the present value of the future availability charges. These have been determined at the inception of the lease and do not take account of any future estimated escalation.

Variation between the availability charges determined at the inception of the lease and the actual availability charges are brought to account as contingent rentals in accordance with AASB 117. Availability charges are allocated between interest expense and a reduction in the lease liability, with the interest expense calculated using the interest rate implicit in the lease and charged directly to the Statement of Comprehensive Income.

8 Income tax expense

(a) *Income tax expense*

	2019 $'000	2018 $'000
Current tax	97,042	91,675
Deferred tax	(17,406)	(33,320)
Amounts under provided in prior years	1	2
	79,637	58,357
Deferred income tax included in income tax expense comprises:		
(Increase)/decrease in deferred tax assets (note 13)	(620)	4,545
(Decrease) in deferred tax liabilities (note 22)	(16,786)	(37,865)
	(17,406)	(33,320)

(b) *Numerical reconciliation of income tax expense to prima facie tax payable*

	2019 $'000	2018 $'000
Profit from continuing operations before income tax expense	272,480	201,564
Tax at the Australian tax rate of 30.0% (2018: 30.0%)	81,744	60,469
Tax effect of amounts which are not deductible (taxable) in calculating taxable income:		
ADP intangible asset amortisation	510	510
Government grants	(2,618)	(2,618)
Provision for employee benefits	-	(6)
	79,636	58,355
Amounts under provided in prior years	1	2
Income tax expense	79,637	58,357

(c) *Tax expense (income) relating to items of other comprehensive income*

	2019 $'000	2018 $'000
Gain on revaluation of infrastructure, plant and equipment	32,156	27,390
Adjustment on initial adoption of AASB 9 (note 28a, 28b)	(39)	-
	32,117	27,390

9 Current assets - Receivables

	2019 $'000	2018 $'000
Receivables		
Rates receivable (water and sewer)	**171,414**	155,212
Sundry debtors	**42,968**	28,987
Allowance for doubtful debts	**(142)**	(32)
	214,240	184,167
Other receivables		
Community Service Obligations	**19,646**	18,971
	233,886	203,138

Receivables for rates and charges and sundry debtors are normally settled within 21 days. These are recognised in the accounts as amounts due. Collectability of receivables is reviewed on an ongoing basis. An allowance for doubtful debts is raised based on a review of outstanding amounts at balance date.

(a) *Impaired trade receivables*

The Corporation recognises an allowance for doubtful debts from the initial recognition of trade receivables using the simplified approach permitted by AASB 9. Under the simplified approach lifetime expected credit losses have been recognised using historical write-off experience.

An allowance for doubtful debts has also been recognised based on an assessment of expected credit losses where a debtor has experienced a known credit event.

Receivables are written off when there is no reasonable expectation of recovery. Indicators that there is no reasonable expectation of recovery include the failure of a debtor to enter into a payment plan with the Corporation, the Company has gone into liquidation, unable to recover the water and sewer charges from the sale of the customers property in accordance with the South Australian Water Corporation Act 1994.

Movements in the allowance for doubtful debts are as follows:

Balance at 30 June under AASB 139	**32**	40
Adjustment on initial adoption of AASB 9	**131**	-
Opening balance at 1 July	**163**	40
Increase in the allowance	**3**	13
Amounts written off	**(107)**	(10)
Amounts reversed	**83**	(11)
Closing balance at 30 June	**142**	32

For 2018-19, SA Water has elected not to adopt a provision matrix methodology for measuring expected credit losses under AASB 9 due to the immateriality of exposure to credit risk. The information relating to the ageing analysis for rates and sundry receivables is therefore not required to be disclosed. (refer note 1 and 2(b)).

Comparative information for 2017-18 is still required under AASB 139 for past due but not impaired trade receivables as follows;

(b) *Past due but not impaired*

At 30 June, the aging of rates receivable that are past due but not impaired is as follows:

9 Current assets - Receivables (continued)

(b) *Past due but not impaired (continued)*

	2018 $'000
Up to 3 months	22,949
More than 3 months	16,829
	39,778

The other balances within rates receivables do not contain impaired assets and are not past due. It is expected that these amounts will be received when due. The carrying amount of past due rates receivables with renegotiated terms at balance date for 2018: $15.09m.

At 30 June 2018, the aging of sundry debtors that are past due but not impaired is as follows:

	2018 $'000
Up to 1 month	1,572
More than 1 month	1,401
	2,973

The remaining balances within sundry debtors do not contain impaired assets and are not past due. It is expected that these amounts will be received when due. The carrying amount of past due sundry debtors with renegotiated terms at balance date for 2018: $0.771m.

Balances for other receivables relate to Community Service Obligations and do not contain impaired assets and are not past due. It is expected that these balances will be received when due.

(c) *Fair value and credit risk*

Due to the short-term nature of the current receivables, their carrying amount is assumed to approximate their fair value.

The maximum exposure to credit risk at the end of the reporting period is the carrying amount of each class of receivables mentioned above. Refer to note 2 for more information on the risk management policy of the Corporation and the credit quality of the Corporation's receivables.

10 Current assets - Inventories

	2019 **$'000**	2018 $'000
Raw materials and stores	**7,357**	7,861
Allowance for obsolete stock	**(186)**	(257)
Work in progress	**1,327**	1,514
	8,498	9,118

Inventories are valued at the lower of cost and net realisable value. The cost of goods and services, if any, manufactured by SA Water are on a full absorption cost basis.

Inventories are held for purposes of maintenance and construction and not for resale.

11 Current assets - Financial assets

	2019 **$'000**	2018 $'000
Electricity derivatives		
Settlement residue auction units	**-**	21
Total current derivative financial instrument assets	**-**	21

The Corporation's Treasury Risk Management Policy and Energy Price Risk Management Policy provide a prudential framework for the management of the Corporation's financial risks including interest rate risk, foreign exchange price risk and commodity price risk. Within the parameters of the Corporation's Treasury Risk Management and Energy Price Risk Management Policies, SA Water utilises derivative financial instruments for foreign exchange and commodity price risk to implement appropriate financial risk mitigation strategies. Interest rate risk arising from borrowings is managed in accordance with the debt management strategies outlined in note 2(a)(i).

Electricity derivatives

Electricity price risk represents the risk of unfavourable movements in wholesale electricity prices which could adversely impact the Corporation's electricity costs. The Corporation uses derivative financial instruments to economically manage electricity price risk and to mitigate against exposure to fluctuations in wholesale electricity spot prices.

Permitted electricity derivatives include exchange traded futures and settlement residue auction units.

The Corporation is prohibited from the selling and early termination of derivative financial instruments.

11 Current assets - Financial assets (continued)

Accounting for derivatives

Derivative financial instruments are initially recognised at fair value on the date on which a derivative contract is entered into and are subsequently remeasured to fair value.

All derivatives are categorised as financial assets or financial liabilities at fair value through profit and loss and classified as economic hedges in the Statement of Financial Position as the Corporation has elected not to apply hedge accounting under AASB139 and AASB 9.

Derivatives are carried as financial assets when their fair value is positive and as financial liabilities when their fair value is negative. Any changes in the fair value of derivatives are recognised immediately as an adjustment to other income or other expenses in the Statement of Comprehensive Income.

Electricity derivatives are remeasured to fair value with reference to published market prices and quotations.

Consistent with SA Water's treasury and energy policies, derivative financial instruments are transacted as economic hedges of cash flow exposures and are not held for speculative purposes.

12 Current assets - Other current assets

	2019	2018
	$'000	$'000
Interest receivable	**5**	39
Prepayments	**10,400**	9,114
Renewable Energy Certificates *	**1,501**	10,923
Lease Incentive Asset	**60**	60
Australian Carbon Credits	**795**	333
	12,761	20,469

*SA Water purchases Renewable Energy Certificates (RECs) as well as generate RECS, in order to meet Green House Gas (GHG) emission targets. Unused RECs accumulated as at 30 June are recorded at their fair value and expected to be utilised in satisfying the Corporation's GHG emission targets.

13 Non-current assets - Deferred tax assets

	Notes	2019 $'000	2018 $'000
The balance comprises temporary differences attributable to:			
Doubtful debts		**3**	10
Obsolete stock		**56**	77
Infrastructure, plant and equipment		**11,851**	12,096
Pooled assets		**58**	78
Payables		**1,439**	1,385
Audit fee payable		**136**	122
Government grants		**11,087**	11,250
Employee benefits		**13,634**	12,844
Deferred lease incentives		**173**	213
Unearned customer contributions		**(1,000)**	(858)
Unearned income		**89**	122
Provision for asset disposal		**455**	12
Provision for workers compensation		**193**	176
Derivative financial liability		**-**	27
		38,174	37,554
Amounts recognised directly in equity			
Unearned customer contributions		**2,335**	2,335
Revaluation of Infrastructure, plant and equipment	28	**(417)**	280
Doubtful debts - initial adoption of AASB 9		**39**	-
Total deferred tax assets		**40,131**	40,169

	2019 $'000	2018 $'000
Movements:		
Opening balance at 1 July	**40,169**	45,460
Charged to the statement of comprehensive income (note 8a)	**620**	(4,545)
Charged to equity (note 28a & 28b)	**(658)**	(746)
Closing balance at 30 June	**40,131**	40,169
Deferred tax assets expected to be recovered within 12 months	**7,360**	7,561
Deferred tax assets expected to be recovered after more than 12 months	**32,771**	32,608
	40,131	40,169

14 Intangible assets

	Easements $'000	Prescription rights $'000	Computer software $'000	ADP intangible $'000	Purchased water rights $'000	Total $'000
Year ended 30 June 2019						
Opening net book amount	6,213	4,500	39,826	59,574	40,981	151,094
Additions	-	-	26,213	-	178	26,391
Amortisation charge	-	-	(20,182)	(1,700)	-	(21,882)
Closing net book amount	6,213	4,500	45,857	57,874	41,159	155,603
At 30 June 2019						
Cost	6,213	4,500	224,983	70,982	41,159	347,837
Accumulated amortisation	-	-	(179,126)	(13,108)	-	(192,234)
Net book amount	6,213	4,500	45,857	57,874	41,159	155,603

14 Intangible assets (continued)

	Easements $'000	Prescription rights $'000	Computer software $'000	ADP intangible $'000	Purchased water rights $'000	Seasonal Water Allocations $'000	Total $'000
Year ended 30 June 2018							
Opening net book amount	6,213	4,500	38,896	61,274	30,776	37,959	179,618
Additions	-	-	20,222	-	10,205	-	30,427
Amortisation charge	-	-	(19,292)	(1,700)	-	-	(20,992)
Write off	-	-	-	-	-	(37,959)	(37,959)
Closing net book amount	6,213	4,500	39,826	59,574	40,981	-	151,094
At 30 June 2018							
Cost	6,213	4,500	198,770	70,982	40,981	-	321,446
Accumulated amortisation	-	-	(158,944)	(11,408)	-	-	(170,352)
Net book amount	6,213	4,500	39,826	59,574	40,981	-	151,094

14 Intangible assets (continued)

Issued water licences

The South Australian Government has issued water licences to the Corporation under the relevant Water Allocation Plan for the water resource given effect by the *Natural Resources Management (NRM) Act 2004 (SA)*. Some of these licences have conditions attached which restrict the use of the allocations endorsed thereon. All licences are held to underpin the water security of our customers. These licenses are held by the Corporation in accordance with Department of Treasury & Finance (DTF) Accounting Policy Statement reference 138.

The corporation holds a River Murray licence to underpin the metropolitan Adelaide and associated country Areas, and a licence that supports our River Murray Country towns customers

Rights other than those relating to the River Murray are:

- Various South East Region licences;
- Various Murray Mallee Area licences;
- Various Eyre Peninsula Region licences;
- McLaren Vale licence for the Aldinga Wastewater Treatment Plant;
- Northern Adelaide Plains licence for the Bolivar Wastewater Treatment Plant;
- Western Mount Lofty Ranges licences; and
- Far North region licences.

Purchased water rights

The Corporation owns a series of tradable water rights that it has purchased from the Southern Murray Darling Basin water trading markets. The rights are perpetual and title is held by the Corporation under the relevant legislation in the jurisdiction of issue (as water access entitlements onto licences issued by the South Australian Government under the NRM Act 2004 (SA), as water shares issued by the Victorian Government under the Water Act 1989 (VIC), and as unit shares issued by the New South Wales Government under the Water Management Act 2000 (NSW)). The allocations made to these water rights are held in South Australia or are able to be transferred into South Australia from within the Southern Murray Darling Basin, subject to statutory trading rules.

In accordance with the requirements of *Treasurer's Instructions (Accounting Policy Statements)* covering valuation of intangible assets, the water rights are valued at cost. The water rights have an indefinite useful life and as such are not subject to amortisation.

Seasonal water allocations

In addition to the permanent water rights above, during 2008-09 and 2009-10 the Government granted approval for SA Water to purchase seasonal water allocations to be used for critical human water needs in future years. SA Water also purchased water allocations for operational needs. Prior to June 2012 the Government had approved the water allocations being preserved beyond 2011-12 and retained as a reserve to meet critical human water needs in future years. These purchased water allocations are held as other assets in the accounts and are expensed as the water is used. In 2015-16, a permanent reduction in available water of 52 GL was recorded as an expense in SA Water's 2015-16 financial statements with a remaining balance of 120GL. In 2017-18, a permanent reduction in the remaining water allocation of 120 GL was recognised as an expense in SA Water's 2017-18 financial statements.

14 Intangible assets (continued)

Prescription of the Mount Lofty Ranges

SA Water has previously contributed towards the prescription of the water resources for the Mount Lofty Ranges to provide long term protection of the water supply to Adelaide. In June 2013 SA Water was issued a licence pertaining to storage and diversion rights for streams in the Western Mount Lofty Ranges.

Easements

In accordance with the *Treasurer's Instructions (Accounting Policy Statements)* and *AASB 138 Intangible Assets*, easements have been classified as an intangible asset and valued at cost. Easements gifted to the Corporation are not valued.

Application software

Application software is valued at cost as per AASB 138. The useful life is reviewed annually and has been assessed at 5 years. The software is amortised using the straight line method.

ADP intangible asset

An intangible asset exists in relation to the network connection agreement between SA Water and SA Power Networks. The agreement grants the Corporation the legal right to connect to the SA Power Networks substation constructed at Port Stanvac and thus acquire electricity for the Adelaide Desalination Plant (ADP) at the rates specified in the agreement.

In accordance with AASB 138, this right was recognised in 2012-13 as an intangible asset and is measured at the construction cost of the SA Power Networks' substation.

The useful life is based on the average useful life of the ADP assets belonging to SA Water upon which the intangible asset is dependent as per AASB 138. As with other non-current assets, the useful life of the intangible asset is assessed annually and is currently 41.75 years. The ADP intangible asset is amortised using the straight line method.

15 Non-current assets - Infrastructure, plant and equipment

	Work in progress $'000	Land $'000	Buildings $'000	Leased sewer infrastructure $'000	Plant and equipment $'000	Water infrastructure $'000	Sewer infrastructure $'000	Leased water infrastructure $'000	Other property, plant and equipment $'000	Total $'000
Year ended 30 June 2019										
Opening net book amount	399,748	375,508	23,154	22,699	20,537	8,644,542	4,221,015	74,892	106,614	13,888,709
Revaluation surplus	-	10,298	770	(4,693)	-	147,526	(42,361)	2,303	3,547	117,390
Additions	551,180	-	1,287	-	2,878	184,355	92,519	811	10,248	843,278
Transfers	(294,312)	-	-	-	-	-	-	-	-	(294,312)
Depreciation charge	-	-	(3,688)	(1,373)	(2,609)	(221,418)	(84,413)	(4,398)	(20,813)	(338,712)
Disposals	-	-	-	-	(159)	-	-	-	-	(159)
Asset write down	(2,875)	-	-	-	-	(936)	(214)	-	-	(4,025)
Closing net book amount	653,741	385,806	21,523	16,633	20,647	8,754,069	4,186,546	73,608	99,596	14,212,169
At 30 June 2019										
Cost	653,741	-	-	-	-	-	-	-	-	653,741
Valuation	-	385,806	98,163	35,853	53,355	15,372,243	7,013,043	209,431	339,580	23,507,474
Accumulated depreciation	-	-	(76,640)	(19,220)	(32,708)	(6,618,174)	(2,826,497)	(135,823)	(239,984)	(9,949,046)
Net book amount	653,741	385,806	21,523	16,633	20,647	8,754,069	4,186,546	73,608	99,596	14,212,169

15 Non-current assets - Infrastructure, plant and equipment (continued)

	Work in progress $'000	Land $'000	Buildings $'000	Leased sewer infrastructure $'000	Plant and equipment $'000	Water infrastructure $'000	Sewer infrastructure $'000	Leased water infrastructure $'000	Other property, plant and equipment $'000	Total $'000
Year ended 30 June 2018										
Opening net book amount	363,157	367,996	23,848	22,585	20,235	8,632,851	4,079,800	76,359	99,078	13,685,909
Revaluation surplus	-	7,491	777	735	-	29,171	54,877	2,488	3,215	98,754
Additions	444,326	21	2,208	209	2,824	210,089	152,725	301	25,927	838,630
Transfers	(402,095)	-	-	-	-	-	35,170	-	-	(366,925)
Depreciation charge	-	-	(3,679)	(830)	(2,486)	(212,217)	(90,708)	(4,256)	(21,606)	(335,782)
Asset write down	(5,640)	-	-	-	-	(15,352)	(10,849)	-	-	(31,841)
Disposals	-	-	-	-	(36)	-	-	-	-	(36)
Closing net book amount	399,748	375,508	23,154	22,699	20,537	8,644,542	4,221,015	74,892	106,614	13,888,709
At 30 June 2018										
Cost	399,748	-	-	-	51,270	-	-	-	-	451,018
Valuation	-	375,508	93,757	32,386	-	14,986,229	7,068,003	201,901	319,290	23,077,074
Accumulated depreciation	-	-	(70,603)	(9,687)	(30,733)	(6,341,687)	(2,846,988)	(127,009)	(212,676)	(9,639,383)
Net book amount	399,748	375,508	23,154	22,699	20,537	8,644,542	4,221,015	74,892	106,614	13,888,709

15 Non-current assets - Infrastructure, plant and equipment (continued)

(a) *Carrying amounts that would have been recognised*

If revalued assets were stated on the historical cost basis, the amounts would be as follows:

	2019 $'000	2018 $'000
Freehold land		
Cost	**52,816**	52,816
Net book amount	**52,816**	52,816
Buildings		
Cost	**57,403**	56,117
Accumulated depreciation	**(34,576)**	(31,352)
Net book amount	**22,827**	24,765
Leased sewer infrastructure		
Cost	**18,792**	18,792
Accumulation depreciation	**(6,577)**	(6,107)
Net book amount	**12,215**	12,685
Water infrastructure		
Cost	**5,033,900**	4,873,328
Accumulated depreciation	**(1,329,046)**	(1,232,161)
Net book amount	**3,704,854**	3,641,167
Sewer infrastructure		
Cost	**2,524,108**	2,443,426
Accumulated depreciation	**(1,109,006)**	(1,026,195)
Net book amount	**1,415,102**	1,417,231
Leased water infrastructure		
Cost	**124,183**	124,183
Accumulation depreciation	**(78,625)**	(76,046)
Net book amount	**45,558**	48,137
Other		
Cost	**264,257**	254,467
Accumulated depreciation	**(178,765)**	(161,357)
Net book amount	**85,492**	93,110

15 Non-current assets - Infrastructure, plant and equipment (continued)

Infrastructure, plant and equipment
Acquisition

Items of infrastructure, plant and equipment are initially recorded at cost in accordance with *AASB 116 Property, Plant and Equipment*, and are depreciated as outlined below. Assets acquired under Build Own Operate Transfer (BOOT) agreements are brought to account when commissioned.

Subsequent costs are included in the asset's carrying amount or recognised as a separate asset, as appropriate, only when it is probable that future economic benefits associated with the item will flow to the Corporation and the cost of the item can be measured reliably. All other repairs and maintenance are charged to the Statement of Comprehensive Income during the financial period in which they are incurred.

Valuations

To comply with *AASB 13 Fair Value Measurement* and AASB 116, the Corporation has adopted the fair value method for measuring and reporting land and buildings and infrastructure assets in the Statement of Financial Position. Refer to note 3 for disclosures regarding fair value levels. The Corporation uses both independent valuation and Directors' valuation methods to measure fair value. Depending on the class, Directors' valuation is performed using the Producer Price Index (PPI) or current contract rates. PPI measures change over time in the price of new construction outputs. The PPI used is the Australian Bureau of Statistics Index Number 3101 "Road and Bridge Construction South Australia". Current contract rates are based on recently determined market contract rates for supplying and installing equivalent assets or components.

The Corporation's valuation methodologies, for all major classes of infrastructure assets, are subject to independent review when a change in the valuation method occurs. In addition to this, a complete independent review of these methodologies was completed by Aquenta Consulting Pty Ltd in April 2015. This review endorsed how individual asset classes are classified and concluded the assumptions/positions adopted by SA Water in its valuation methodologies are reasonable.

Revaluation adjustments are taken to the asset revaluation surplus on a class basis, with the exception of land and buildings which are adjusted on an asset by asset basis.

Infrastructure assets

In the majority of cases, the fair value of SA Water's infrastructure assets is the lower of modern equivalent reproduction or replacement cost. The cost of replacing or reproducing excess capacity or over engineering of the asset is excluded from the value. The modern equivalent reproduction or replacement cost is determined through an independent valuation process. The valuation is then reduced to allow for the age of the asset.

Infrastructure assets were valued as follows:

- The unit rates for water mains/connections and sewer mains/connections, were independently determined by Capisce QS as at 1 July 2018. These rates are applied to the actual lengths of pre-defined modern equivalent asset types for water mains and sewer mains.

- Other infrastructure assets are independently valued on a cyclical basis at least every 5 years. In the intervening periods the assets are indexed annually as at 1 July using the appropriate PPI. Assets independently valued during the financial period were wastewater treatment plants by Capisce QS at 1 July 2018.

15 Non-current assets - Infrastructure, plant and equipment (continued)

Infrastructure, plant and equipment (continued)
Valuations (continued)
Infrastructure assets (continued)

The previous independent valuations were:

- Water filtration plants, earth storages, reservoirs, water dosing stations, and the Adelaide Desalination plant were independently valued as at 1 July 2017.
-
- Bores and wells, water pumping stations, water tanks, leased water treatment plants were independently valued as at 1 July 2016.

- Sewer pumping stations and buildings were independently valued as at 1 July 2015.

Land and buildings

Land is independently valued at market value generally using valuations as at 1 July provided from the State Valuer General. In isolated cases, the Corporation may use independent valuations performed by an appropriately qualified valuer. The Valuer General uses site values of generically similar allotments to arrive at a unit rate used to assign a value to individual parcels. Rates depend on whether the site is residential, industrial or commercial.

Buildings are independently valued on a cyclical basis at least every 5 years. In the intervening periods the assets are indexed annually as at 1 July using the appropriate PPI. Buildings were last independently valued by Aquenta as at 1 July 2015.

Plant and equipment

Plant and equipment is valued at cost which is deemed to be its fair value.

Other property, plant and equipment

Other assets are valued at cost which is deemed to be its fair value and indexed annually using the PPI.

Work in progress

Work in progress is carried at cost which is deemed to be its fair value.

15 Non-current assets - Infrastructure, plant and equipment (continued)

Impairment of assets

Impairment Monitoring Regime

AASB136 requires for-profit entities, at each reporting date, to undertake an impairment assessment for its non-current assets including property, plant, equipment and its infrastructure assets. Where there is an indication of impairment, the recoverable amount is estimated. An amount by which the asset's carrying amount exceeds the recoverable amount is recorded as an impairment loss. For revalued assets any impairment loss is offset against the relevant asset revaluation surplus until fully extinguished with any remaining amount expensed in the Statement of Comprehensive Income.

SA Water, in accordance with AASB136, has a sound "Impairment Monitoring Regime" where management assess whether there are any "Impairment Indicators" being present from external and internal sources prior to each reporting date. External and internal sources include market conditions, technology changes or asset obsolescence.

There are a number of key parameters that influence SA Water's economic performance including the Regulated Asset Base (RAB) and the weighted average cost of capital (WACC).

The Corporation is aware of the release of the The Abridged Advice Final Report of the South Australian Inquiry into water prices which covers a range of parameters including the valuation of the RAB. Any reduction in the RAB and/or WACC that results in a significant decline in economic performance may constitute an impairment indicator.

The Government is considering the report and is yet to provide a response and therefore it is premature for the Corporation to draw any conclusions, with respect to the valuation of its assets. The Corporation will closely monitor the government response to the Final Report of the South Australian Inquiry into water prices during 2019-20 for any potential asset valuation implications.

16 Current liabilities - Payables

	2019 $'000	2018 $'000
Interest payable	**80,809**	78,034
Trade creditors	**131,983**	121,792
Other creditors	**12,688**	10,468
	225,480	210,294

Liabilities, whether or not yet billed to the Corporation, are recognised as amounts to be paid in the future for goods and services received, including any related GST. Trade accounts payable are normally settled within 30 days.

17 Current liabilities - Financial liabilities/borrowings

	2019 $'000	2018 $'000
Lease liabilities	**12,470**	11,144
Short term borrowings	**27,175**	27,974
	39,645	39,118

The Corporation has a $150m short term borrowing facility with SAFA, bearing interest at SAFA's daily cash rate.

(a) *Risk exposures*

Information regarding interest rate risk and liquidity risk exposure is set out in note 2.

(b) *Fair value disclosures*

Information about the security relating to each of the secured liabilities and the fair value of each of the borrowings is provided in note 2.

Due to the short term nature of these interest bearing liabilities, their carrying value is assumed to approximate their fair value. Refer to note 2.

18 Current liabilities - Tax liabilities

	2019	2018
	$'000	$'000
Provision for current income tax movements during the year were as follows:		
Opening balance at 1 July	**10,167**	(5,659)
Income tax paid	**(100,425)**	(75,851)
Current year's income tax provision	**97,042**	91,675
Amounts under provided in prior years	**1**	2
	6,785	10,167

19 Current liabilities - Provisions

	2019 $'000	2018 $'000
Employee benefits	**15,814**	15,885
Asset disposal	**60**	40
Damages and claims	**404**	19
Workers compensation	**1,092**	1,083
	17,370	17,027

(a) *Movements in provisions*

Movements in each class of provision during the financial year, other than employee benefits, are set out below:

2019 Current	**Asset disposal $'000**	**Damages and claims $'000**	**Workers compensation $'000**	**Total $'000**
Opening balance at 1 July	40	19	1,083	1,142
Provisions recognised	32	-	1,196	1,228
Re-measurement adjustments	-	-	(877)	(877)
Additional provision recognised	-	756	-	756
Payments made during year	(12)	(371)	(310)	(693)
Closing balance at 30 June	60	404	1,092	1,556

Provisions are recognised when the Corporation has a present obligation as a result of a past event, it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation.

Employee benefits

This includes liabilities for annual and long service leave. The annual leave and long service leave liability is expected to be payable within twelve months and is measured at the undiscounted amount expected to be paid when the liability is settled.

Asset disposal

A provision for the disposal and abandonment of assets is recognised when there is a present obligation to undertake further work to decommission surplus assets and ensure they are safe to the public and do not cause harm to the environment.

The estimated costs of site rehabilitation and decommissioning non-current assets are based on past experience and current market prices.

Damages and claims

A provision is recognised for claims against the Corporation relating to property damage, personal injury and civil liability.

The amounts measured and recorded for claims are based on estimates of specified claims and the probability that the Corporation will be required to settle the obligation. Previous claims history and the Crown Solicitor's Office advice is used in the determination of the liability.

19 Current liabilities - Provisions (continued)

Damages and claims (continued)

SA Water is insured under the South Australian Government's insurance and risk management arrangements with SAICORP. Under this agreement between SAICORP and SA Water, SAICORP will meet the cost of any civil liability claim made against SA Water subject to SA Water's selected deductible.

In addition, insurance arrangements are in place for construction works, travel insurance, and director and officer liabilities.

Workers compensation

The corporation is registered with ReturnToWorkSA as a government self-insurer and is responsible for the management and liability of all workers' compensation claims. The provision is for the estimated cost of ongoing payments to employees as required under current legislation. The Corporation's provision is an actuarial estimate of the outstanding liability as at 30 June 2019 provided by KPMG Actuarial Pty Ltd. SA Water is committed to early intervention and supportive of early return to work programs for our people.

20 Current liabilities - Other current liabilities

	2019	2018
	$'000	$'000
Government grants	**9,566**	9,566
Lease incentives	**133**	134
Unearned income	**88**	111
Deposits from customers	**1,403**	1,181
Contract liabilities	**4,450**	4,921
	15,640	15,913

21 Non-current liabilities - Financial liabilities/borrowings

	2019	2018
	$'000	$'000
Lease liabilities (note 29)	**36,551**	49,021
Long term borrowings	**6,635,000**	6,413,000
	6,671,551	6,462,021

The Corporation has a long term and short term borrowing facility with the South Australian Government Financing Authority (SAFA). The loans are denominated in Australian dollars and carry both fixed and floating interest rates. The Government provides a guarantee in respect of these borrowings pursuant to the provisions of the *Public Finance and Audit Act 1987*.

Under a mandate from the State Treasurer, the Corporation transferred debt management responsibilities to SAFA effective from 1 July 2004. SA Water's debt portfolio is managed by SAFA under a Financial Bureau Service Agreement and within requirements outlined in SA Water's Treasury Risk Management Policy.

22 Non-current liabilities - Deferred tax liabilities

	2019 $'000	2018 $'000
The balance comprises temporary differences attributable to:		
Prepayments	**1,867**	1,777
Lease incentive asset	**84**	102
Infrastructure, plant and equipment	**(54,389)**	(37,531)
	(52,438)	(35,652)
Amounts recognised directly in equity		
Revaluation of infrastructure, plant and equipment	**1,729,679**	1,698,221
	1,729,679	1,698,221
Total deferred tax liabilities	**1,677,241**	1,662,569

	2019 $'000	2018 $'000
Movements:		
Opening balance	**1,662,569**	1,673,790
Credited to the Statement of Comprehensive Income (note 8)	**(16,787)**	(37,865)
Charged to equity (note 28)	**31,459**	26,644
Closing balance at 30 June	**1,677,241**	1,662,569
Deferred tax liabilities to be settled within 12 months	**1,885**	1,795
Deferred tax liabilities expected to be settled after more than 12 months	**1,675,356**	1,660,774
	1,677,241	1,662,569

23 Non-current liabilities - Provisions

	2019 $'000	2018 $'000
Employee benefits	**29,632**	26,928
Workers compensation	**2,869**	2,541
Asset disposal	**1,459**	-
	33,960	29,469

(a) *Movements in provisions*

Movements in each class of provision during the financial year, other than employee benefits, are set out below:

2019 Non-current	**Workers compensation $'000**	**Asset disposal $'000**	**Total $'000**
Opening balance at 1 July	2,541	-	2,541
Re-measurement adjustments	328	-	328
Additional provision recognised	-	1,459	1,459
Closing balance at 30 June	2,869	1,459	4,328

23 Non-current liabilities - Provisions (continued)

(a) *Movements in provisions (continued)*

Employee benefits

Liabilities that are not expected to be settled within 12 months are measured as the present value of expected future payments to be made in respect of services provided by employees up to the reporting date. Consideration is given to anticipated future wage and salary levels, experience of employee departures and periods of service. Expected future payments are discounted using interest rates on negotiable government guaranteed securities with terms of maturity that match, as closely as possible, the estimated future cash flows. The related on costs have been recognised in the Statement of Financial Position as payables.

The Corporation's long service leave liability for 30 June 2019 was valued by KPMG Actuarial Pty Ltd.

24 Non-current liabilities - Other non-current liabilities

	2019 **$'000**	2018 $'000
Government grants	**351,619**	360,890
Lease incentives	**443**	576
	352,062	361,466

25 Reconciliation of cash

	2019 **$'000**	2018 $'000
Cash and cash equivalents as at the end of the financial year as shown in the statement of cash flows is reconciled to the items in the statement of financial position as follows:		
Cash and cash equivalents	**2,772**	3,966

Cash on hand and at bank is stated at nominal value. For the purposes of the Statement of Cash Flows, cash includes cash on hand and at bank.

(a) *Fair Value*

Due to the short term nature of cash and cash equivalents, their carrying value is assumed to approximate their fair value.

26 Reconciliation of profit after income tax to net cash inflow from operating activities

	2019 $'000	2018 $'000
Net profit for the year	**192,843**	143,207
Add/(less) non-cash items:		
Depreciation and amortisation	**360,594**	356,774
Amortisation of government grant revenue	**(9,313)**	(9,466)
Contributed assets	**(24,174)**	(22,636)
Net (gain) on disposal of infrastructure, plant and equipment	**(190)**	(262)
Net (gain) on disposal of temporary water allocations	**(13,248)**	(3,304)
Infrastructure, plant and equipment revaluation decrement reversal	**(553)**	(651)
Infrastructure, plant and equipment revaluation decrement	**-**	1,818
Write-off in value of infrastructure, plant and equipment and capital WIP	**4,025**	31,841
Write-off in value of purchased seasonal water allocations	**-**	37,959
Net loss (gain) on disposal of renewable energy certificates	**5,228**	(18,339)
Change in assets and liabilities:		
(Increase)/decrease in receivables	**(30,880)**	15,420
(Increase)/decrease in prepayments	**(1,286)**	543
Decrease/(increase) in inventories	**620**	(706)
(Increase) in other operating assets	**(4,051)**	(11,838)
Decrease in derivative financial assets	**21**	853
(Increase)/decrease in deferred tax assets	**(620)**	4,545
Decrease in income tax receivable	**-**	5,659
(Decrease)/increase in trade creditors	**(3,814)**	3,903
Increase provision for employee benefits	**2,634**	408
Increase/(decrease) in provision for workers compensation	**337**	(347)
Increase/(decrease) in other operating liabilities	**16,005**	(21,232)
Increase in government grants	**42**	155
Increase/(decrease) in other provisions	**1,864**	(92)
(Decrease) in deferred tax liabilities	**(16,786)**	(37,865)
(Decrease)/increase in income tax payable	**(3,381)**	10,167
Net cash inflow from operating activities	**475,917**	486,514

27 Capital risk management

Capital is managed within the parameters outlined in the Financial Ownership Framework for SA Water, which encompasses the Corporation's relationship with its owner in respect of capital structure, community service obligations and dividends.

When managing capital, management's objective is to ensure the Corporation continues as a going concern as well as maintaining optimal returns to the State Government (as sole shareholder).

The gearing ratios based on continuing operations at 30 June 2018 and 30 June 2019 were as follows:

		2019	2018
		$'000	$'000
Interest bearing borrowings (note 17, 21)		**6,711,196**	6,501,139
Less: Cash and cash equivalents (note 25)		**(2,772)**	(3,966)
Net debt		**6,708,424**	6,497,173
Total Assets		**14,666,042**	14,316,964
Gearing ratio	45.8%	45.4%	-

As part of the 2017-18 State Budget, the SA Government determined that SA Water adjust its borrowings each year prior to 30 June, to maintain a debt/asset gearing ratio of 45%. This commenced from the year ended 30 June 2017, and requires SA Water to make an additional return to the State Government, transacted as a specified dividend, as directed by the Treasurer, of an amount equivalent to the required incremental increase in borrowings.

28 Asset revaluation surplus and retained profits

(a) *Asset revaluation surplus*

	2019 $'000	2018 $'000
Revaluation surplus - infrastructure, plant and equipment	**5,111,844**	5,049,757
	5,111,844	5,049,757

Movements:

Infrastructure, plant and equipment revaluation surplus		
Opening balance at 1 July	**5,049,757**	4,969,419
Revaluation of infrastructure, plant and equipment*	**116,837**	99,920
Transfers from available-for-sale investment revaluation surplus	**-**	19,837
Movements in deferred tax liability (note 22)	**(31,459)**	(26,644)
Transfer to retained profits on disposal	**(22,594)**	(12,029)
Movements in deferred tax assets (note13)	**(697)**	(746)
Closing balance at 30 June	**5,111,844**	5,049,757
Available-for-sale investments revaluation surplus		
Opening balance at 1 July	**-**	19,837
Reclassification adjustments - transfer to infrastructure revaluation surplus	**-**	(19,837)
Closing balance at 30 June	**-**	-

*The 2017-2018 revaluation increase (around 0.8%) is primarily attributable to the revaluation increment of pipe assets, wastewater treatment plants, and water filtration plants.

*The 2018-2019 revaluation increase (around 0.1%) is primarily attributable to the revaluation movement of pipe assets, wastewater treatment plants, desalination plant and water filtration plants.

(b) *Retained profits*

Movements in retained profits were as follows:

Opening balance at 1 July	**271,749**	255,925
Profit for the year	**192,843**	143,207
Dividends (note 32)	**(179,360)**	(139,412)
Transfers from asset revaluation surplus	**22,594**	12,029
Adjustment on initial adoption of AASB 9	**(131)**	-
Movement in deferred tax asset (note 8c)	**39**	-
Closing balance at 30 June	**307,734**	271,749

(c) *Nature and purpose of other asset revaluation surplus*

(i) Infrastructure plant and equipment revaluation surplus

The infrastructure, plant and equipment revaluation surplus is the cumulative balance of asset revaluation increments and decrements.

29 Commitments and contingencies

(a) *Capital commitments*

Capital expenditure contracted for at the balance date but not recognised as liabilities in the financial statements, are committed as follows:

	2019 $'000	2018 $'000
Within one year	**334,021**	175,203
Later than one year but not later than five years	**5,207**	30,703
	339,228	205,906

The capital commitments relate to the Corporation's capital program in delivering water and sewer infrastructure, property, plant & equipment assets.

(b) *Operating lease commitments*

	2019 $'000	2018 $'000
Commitments for minimum lease payments in relation to non-cancellable operating leases are committed as follows:		
Within one year	**16,200**	16,002
Later than one year but not later than five years	**50,170**	58,650
Later than five years	**976**	6,776
	67,346	81,428

The operating lease commitments relate to property and motor vehicle leases.

The rentals for property leases are non-cancellable, payable monthly and reviewed annually. The annual increases are based on 3%. The Corporation has an operating lease commitment for accommodation effective from 2008-09 which expires after 15 years, and includes a right of renewal and a market rent review in year 10.

The operating lease commitment for motor vehicles is non-cancellable, rentals are paid monthly in arrears and no contingent rental provisions exist within the agreement.

(c) *Other expenditure commitments*

	2019 $'000	2018 $'000
Future other expenditure commitments not provided for in the financial statements are committed as follows:		
Within one year	**199,896**	153,818
Later than one year but not later than five years	**239,891**	463,109
Later than five years	**235,248**	383,237
	675,035	1,000,164

Other expenditure commitments include commitments pursuant to contracts to:

- Operate, manage and maintain the Adelaide metropolitan water and sewer networks and treatment plants.
- Operate, maintain and provide energy for the Adelaide Desalination Project.

29 Commitments and contingencies (continued)

(c) *Other expenditure commitments (continued)*

- Other expenditure commitments reported are based on minimum contracted amounts payable at balance date and include an estimate for escalation of charges.

(d) *Finance leases*

	2019 $'000	2018 $'000
Commitments in relation to finance leases are payable as follows:		
Within one year	**17,584**	17,584
Later than one year but not later than five years	**39,988**	50,207
Later than five years	**6,067**	13,432
Minimum lease payments	**63,639**	81,223
Future finance charges	**(14,618)**	(21,058)
Recognised as a liability	**49,021**	60,165
Representing lease liabilities:		
Current (note 17)	**12,470**	11,144
Non-current (note 21)	**36,551**	49,021
	49,021	60,165
The present value of finance lease liabilities is as follows:		
Within one year	**12,470**	11,144
Later than one year but not later than five years	**30,934**	37,164
Later than five years	**5,617**	11,857
Minimum lease payments	**49,021**	60,165

Future finance lease payments are amounts contracted with private sector providers to construct, own and operate water and sewer treatment facilities.

(e) *Contingent rentals*

The above finance leases comprise a base amount plus an incremental contingent rental. Contingent rentals are based on the consumer price and related indexes. Commitments in relation to contingent rentals are payable as follows:

	2019 $'000	2018 $'000
Within one year	**5,925**	5,682
Later than one year but not later than five years	**14,286**	16,764
Later than five years	**2,332**	4,914
	22,543	27,360

The amount of contingent rentals paid during the year is disclosed in note 7.

(f) *Other contingencies*

At balance date there were no other known contingent assets or liabilities.

30 Joint Operation

Jointly controlled operations

The Corporation holds an interest of 50% in the output of the Jointly controlled operation named SA Water/Lofty Ranges Power - Jointly controlled operation whose principal activity is the generation of electricity from the use of water energy stored in and by the Corporation's infrastructure at Hope Valley.

The Corporation's jointly controlled operation is brought to account by including its proportionate share of the operation's assets, liabilities, expenses and revenues on a line by line basis.

Included in the assets and liabilities of the Corporation are the following items which represent the Corporation's interest in the assets and liabilities employed in the Jointly controlled operation, recorded under the following classifications:

	2019 $'000	2018 $'000
Current assets		
Cash and cash equivalents	**48**	58
Receivables	**4**	5
Total current assets	**52**	63
Non-current assets		
Infrastructure, plant and equipment	**1,507**	1,518
Total assets	**1,559**	1,581
Current liabilities		
Payables	**42**	52
Total liabilities	**42**	52
Net assets	**1,517**	1,529

31 Remuneration of auditors

	2019 **$'000**	2018 $'000
Audit fees paid/payable		
SA Water annual Public Finance and Audit Act audit	**441**	395
SA Water regulatory financial statements audit*	**11**	11
	452	406

* Pursuant to *Water Industry Guideline Number 2* and confirmation from ESCOSA. a full Audit Opinion Certificate on the Corporation's special purpose (regulatory) financial statements is no longer required. An 'Agreed Upon Procedures Report' has been determined to be the appropriate audit assurance to SA Water's Board and Management.

32 Dividends

	2019 **$'000**	2018 $'000
Dividend paid	**179,360**	139,412
	179,360	139,412

Dividends paid and payable are recognised in the reporting period in which the dividends are declared or have been specifically determined and approved in consultation with the Treasurer and the Corporation's Minister.

Dividend paid to the South Australian (SA) Government has been in accordance with the Financial Ownership Framework where the dividend paid is based on the recommendation of the Board and approved by the Treasurer pursuant to section 30 of the Public Corporations Act 1993.

As part of the 2017-18 State Budget, the SA Government determined that SA Water adjust its borrowings each year prior to 30 June, to maintain a debt/asset gearing ratio of 45%.

As part of 2018-19 and 2019-2020 State Budgets, it was determined that there is no specified dividend to be paid for the year ended 30 June 2018 and the year ended 30 June 2019, in recognition that SA Water 's debt/asset gearing ratio was maintained above the predetermined gearing target of 45% (refer to note 27).

As part of the 2019-20 State budget process, SA Water's payout ratio for dividend was increased from 95% to 100% in line with a State Government initiative to increase payout ratios across government owned entities. This commences for the financial year ending 30 June 2019.

33 Remuneration of employees

	Current employees 2019	**Ex-Employees 2019**	Current employees 2018	Ex-Employees 2018
The number of employees whose remuneration paid and payables falls within the following bands is:				
$149,000 - 151,000*	**n/a**	**n/a**	10	-
$151,001 - 171,000	**65**	**1**	68	-
$171,001 - 191,000	**34**	**2**	20	-
$191,001 - 211,000	**7**	**2**	11	3
$211,001 - 231,000	**7**	**-**	5	-
$231,001 - 251,000	**-**	**1**	3	-
$251,001 - 271,000	**2**	**-**	2	-
$271,001 - 291,000	**1**	**1**	-	-
$291,001 - 311,000	**2**	**2**	2	1
$311,001 - 331,000	**1**	**1**	1	-
$331,001 - 351,000	**-**	**-**	-	-
$351,001 - 371,000	**-**	**1**	1	-
$371,001 - 391,000	**1**	**-**	1	-
$391,001 - 411,000	**1**	**1**	-	-
$411,001 - 431,000	**1**	**1**	1	-
$431,001 - 451,000	**-**	**-**	-	-
$451,001 - 471,000	**-**	**-**	-	-
$471,001 - 491,000	**-**	**-**	-	-
$491,001 - 511,000	**-**	**-**	-	-
$511,001 - 531,000	**-**	**-**	-	-
$531,001 - 551,000	**-**	**-**	-	-
$551,001 - 571,000	**-**	**1**	1	-
$591,001 - 611,000	**1**	**-**	-	-
Total	**123**	**14**	126	4

*This band has been included for the purposes of reporting comparative figures based on the executive base level remuneration rate for 2017-18.

The table includes all employees who received remuneration equal to or greater than the base executive remuneration level during the year. Remuneration of employees reflects all costs of employment including salaries and wages, payments in lieu of leave, superannuation contributions, salary sacrifice benefits and fringe benefits, and any fringe benefits tax paid or payable in respect of those benefits. The total remuneration received by these employees for the year was $27.1m (2018: $24.1m).

	2019 $'000	2018 $'000
Targeted voluntary separation packages (TVSPs)		
Amount paid during the reporting period to separated employees:		
TVSPs	**472**	88
Annual leave and long service leave paid to those employees	**338**	74
Net cost to SA Water	**810**	162

The number of employees who received TVSPs during the reporting period was 4 (2018: 1).

34 Remuneration of directors

The Board of SA Water was established under the *South Australian Water Corporation Act 1994* and consists of up to seven members including the Chief Executive. Note: Although a member of the Board, the Chief Executive does not receive additional remuneration as a Board member. The remuneration of the Chief Executive is included in notes 33 and 35.

Remuneration of Directors (excluding the Chief Executive) is shown in the table below.

	2019 Number of directors	2018 Number of directors
The number of Directors of the Corporation (excluding the Chief Executive) whose remuneration paid and payable falls within the following bands is:		
$0 - $19,999	**3**	-
$40,000 - $59,999	**5**	4
$60,000 - $79,999	**1**	-
$80,000 - $99,999	**-**	1
	9	5

The total remuneration paid and payable for those Directors was $0.30m (2018: $0.27m) which includes superannuation contributions.

35 Related party disclosures

(a) *Directors*

The following persons held the position of Director of the Corporation during the financial year:

Mr A.V Fletcher AO; Mr J.J Bastian AM: Ms S.M Filby; Ms J.M.H Finlay; Ms F.A Hele; Mr I.F Stirling; and Mr R.J.G.A Cheroux

Mr Fletcher is currently a non-executive director of Justin Pty Ltd and associated companies and Rheinmetall Defence Australia Pty Ltd (Supervisory Board), director/shareholder of Andrew Fletcher and Associates Pty Ltd and associated companies, and the chair of Cryoclock Pty Ltd.

Mr Bastian is currently chair of Techgrow Agriculture, syndicate chair of the CEO Institute, owner and irrigation customer of SA Water for Bastian's Block - Clare Valley Vineyard, chair of the Spencer Gulf Ecosystem and Development Initiative, and a member of the Women's and Children's Local Health Network Transition Board. Mr Bastian was previously the chair of Techin SA.

Ms Filby is currently a facilitator for Behind Closed Doors, external chair of the SA Power Networks Customer Consultative Panel, and a volunteer at Calvary Health Care. Ms Filby was previously a member of the Australian Institute of Company Directors. During the course of the year, Ms Filby was a verification judge for the Real Estate Institute of SA and a temporary member of the SA Planning Commission Public Hearing Panels.

Ms Finlay is currently a director of Leveque Consulting Pty Ltd and director and shareholder for Leveque Investments Pty Ltd, member of the Libraries Board SA, director of St John's Ambulance Australia SA Incorporated, chair of the SA Community Care Committee of St John's Ambulance Australia SA, member of the University of Adelaide Council, and committee member for the University of Adelaide Finance and Infrastructure Committee. Ms Finlay was previously a member of the State Planning Commission.

Ms Hele is a director and shareholder of the Sealink Travel Group, director for Celsus Securitisation Pty Ltd, board member of the Adelaide Venue Management Corporation, member of the council for St Peters College, and director and shareholder of Hele Investments Pty Ltd. Ms Hele was previously a director of Prime Q Pty Ltd.

Mr Stirling is currently the chair and director of A Noble and Son Limited group of companies, and executive chairman of Stirling Advisory Pty Ltd whose clients previously included Ausnet Services and Hastings Funds Management. Mr Stirling was previously a director of the Adelaide Botanic Gardens Foundation, and an independent member of the Air Warfare Destroyers LT Sustainment Board (Department for Defence - DDG SPO).

Mr Cheroux holds the position of Chief Executive and director of the corporation. He is currently a director of the Water Services Association of Australia, a member of the Advisory Council of the French-Australian Chamber of Commerce (FACCI), and member of the Advisory Committee of the Australian Water Partnership. Mr Cheroux was previously a member of the French Engagement Advisory Group (SA).

35 Related party disclosures (continued)

(b) *Key management personnel*

Key management personnel compensation for the years ended 30 June 2019 and 2018 is set out below. The key management personnel are the Directors of the Corporation (including the Chief Executive) and the Senior Leadership Team (SLT) who have responsibility for the strategic direction and management of the Corporation.

The Minister for Water and the River Murray is also considered a member of the key management personnel of the Corporation by virtue of the Minister's power to control and direct the Corporation pursuant to the *Public Corporations Act 1993*. No remuneration has been included in this note disclosure for the Minister as he is not directly remunerated by the Corporation.

	Number of key management personnel	Short-term benefits $'000	Post-employment benefits $'000	Long-term benefits $'000	Termination benefits $'000	Total $'000
2019*	**17**	**3,030**	**281**	**65**	**163**	**3,539**
2018*	**13**	**2,901**	**266**	**-**	**83**	**3,250**

*Both 2019 and 2018 include an overlap of SLT members.

Due to the additional disclosures on related party transactions with key management personnel as required by Department of Treasury and Finance, from 1 July 2016 the value of leave liabilities accrued are no longer included as part of compensation - leave is recognised as it is paid.

36 Statement of Administered items

The Corporation was responsible for administering the Save the River Murray levy. The River Murray levy billed and collected on behalf of Government was not controlled by the Corporation. The Corporation ceased billing this levy at 1 July 2015, but continued to collect the outstanding debt billed prior to 1 July 2015. The following administered items are not recognised in the Corporation's Statement of Comprehensive Income, Statement of Financial Position and Statement of Cash Flows.

	2019		2018
Consolidated entity	**River Murray Levy $'000**	**Total $'000**	**Total $'000**
Administered Income			
Revenue	(5)	(5)	(3)
Total Administered Revenues	**(5)**	**(5)**	(3)
Expenses	(5)	(5)	(3)
Total Administered Expenses	**(5)**	**(5)**	(3)
Operating Surplus	-	-	-
Consolidated entity			
Current Assets			
Total Current Assets	-	-	-
Total Administered Assets	-	-	-
Current Liabilities			
Total Current Liabilities	-	-	-
Total Administered Liabilities	-	-	-
Net Assets	-	-	-

36 Statement of Administered items (continued)

	2019		2018
Consolidated entity	**River Murray Levy $'000**	**Total $'000**	**Total $'000**
Cash flows from operating activities			
Cash inflows	-	-	(3)
Total Cash Inflows	-	-	(3)
Cash outflows	-	-	45
Total Cash Outflows	-	-	45
Net cash inflow/(outflow) from operating activities	-	-	(48)
Net increase/(decrease) in cash held	-	-	(48)
Cash at the beginning of the reporting period	-	-	48
Cash at the end of the reporting period	-	-	-

DRINKING WATER QUALITY DATA

Table 1

2018-19 metropolitan Adelaide source water quality (inlets to water treatment plants)

		Anstey Hill WTP				Hope Valley WTP		
Parameter	**Samples**	**Min**	**Max**	**Ave***	**Samples**	**Min**	**Max**	**Ave***
Colour – True (456nm) [HU]	12	6	11	8	10	10	20	13
Dissolved Organic Carbon [mg/L]	52	2.7	8.4	3.8	44	3.7	6.7	4.9
Fluoride [mg/L]	12	<0.1	0.23	<0.1	10	0.16	0.29	0.21
Hardness – Total [mg/L]	13	108	119	113	13	79	155	117
Nitrate as Nitrogen [mg/L]	26	0.001	0.216	0.086	26	0.001	0.249	0.060
pH [pH units]	12	7.1	8.0	7.4	10	7.5	8.4	8.0
Phosphorus – Total [mg/L]	26	0.018	0.047	0.031	26	0.012	0.044	0.025
Total Dissolved Solids [mg/L]	12	120	340	190	10	230	360	290
Turbidity [NTU]	12	5.4	79	50	10	1.3	8.3	4.8

		Barossa WTP				Little Para WTP		
Parameter	**Samples**	**Min**	**Max**	**Ave***	**Samples**	**Min**	**Max**	**Ave***
Colour – True (456nm) [HU]	12	18	32	24	10	6	13	9
Dissolved Organic Carbon [mg/L]	52	10.4	12.1	11.2	45	4.1	6.2	5.0
Fluoride [mg/L]	12	0.22	0.29	0.25	10	0.21	0.29	0.25
Hardness – Total [mg/L]	13	93	116	104	13	106	146	127
Nitrate as Nitrogen [mg/L]	24	0.001	0.039	0.011	26	0.009	0.228	0.116
pH [pH units]	12	7.3	7.9	7.7	10	7.5	8.0	7.8
Phosphorus – Total [mg/L]	25	0.008	0.030	0.015	26	0.014	0.035	0.023
Total Dissolved Solids [mg/L]	12	290	360	330	10	280	420	340
Turbidity [NTU]	12	0.41	1.0	0.66	10	6.2	52	14

		Happy Valley WTP				Myponga WTP		
Parameter	**Samples**	**Min**	**Max**	**Ave***	**Samples**	**Min**	**Max**	**Ave***
Colour – True (456nm) [HU]	12	9	26	17	12	31	56	42
Dissolved Organic Carbon [mg/L]	52	3.4	6.8	5.2	52	10.8	13.4	12.0
Fluoride [mg/L]	12	0.17	0.26	0.21	12	0.16	0.21	0.19
Hardness – Total [mg/L]	13	62	106	85	13	101	118	109
Nitrate as Nitrogen [mg/L]	26	<0.003	0.279	0.134	25	0.004	0.154	0.065
pH [pH units]	12	7.3	8.5	7.9	12	7.3	8.2	7.8
Phosphorus – Total [mg/L]	26	0.020	0.087	0.040	26	0.020	0.113	0.036
Total Dissolved Solids [mg/L]	12	210	410	270	12	320	370	340
Turbidity [NTU]	12	7.1	35	16	12	0.87	3.4	2.3

* *Limit of reporting (LOR) values replaced with LOR/2.*

Table 2

2018-19 metropolitan Adelaide distribution system customer tap water quality against Australian Drinking Water Guidelines

Anstey Hill Metro System

Parameter	Health Guideline	Aesthetic Guideline	Samples	Min	Max	Ave*	% Compliance#
Chlorine Residual – Free [mg/L]	≤ 5	-	280	<0.1	1.9	0.5	100
Chlorine Residual – Free [mg/L]	-	≤ 0.6	280	<0.1	1.9	0.5	74.6
Colour – True [HU]	-	≤ 15	8	<1	<1	<1	100
E.coli [per cfu/100mL]	++	-	279	0	0	0	100
Fluoride [mg/L]	≤ 1.5	-	8	0.68	0.95	0.86	100
Hardness – Total [mg/L]	-	≤ 200	8	52	112	69	100
Iron – Total [mg/L]	-	≤ 0.3	8	0.0074	0.6420	0.0889	87.5
Manganese – Total [mg/L]	≤ 0.5	-	8	0.0003	0.0854	0.0111	100
Manganese – Total [mg/L]	-	≤ 0.1	8	0.0003	0.0854	0.0111	100
pH [pH units]	-	6.5 - 8.5	24	7.0	7.8	7.4	100
Total Dissolved Solids [mg/L]	-	≤ 600	8	170	340	210	100
Trihalomethanes – Total [µg/L]	≤ 250	-	54	41	124	75	100
Turbidity [NTU]	-	≤ 5	24	<0.1	7.1	0.38	95.8

Barossa Metro System

Parameter	Health Guideline	Aesthetic Guideline	Samples	Min	Max	Ave*	% Compliance#
Chlorine Residual – Free [mg/L]	≤ 5	-	140	<0.1	1.0	0.3	100
Chlorine Residual – Free [mg/L]	-	≤ 0.6	140	<0.1	1.0	0.3	85.0
Colour – True [HU]	-	≤ 15	8	<1	2	1	100
E.coli [per cfu/100mL]	++	-	140	0	0	0	100
Fluoride [mg/L]	≤ 1.5	-	8	0.69	0.98	0.87	100
Hardness – Total [mg/L]	-	≤ 200	8	116	139	126	100
Iron – Total [mg/L]	-	≤ 0.3	8	0.0045	0.0216	0.0089	100
Manganese – Total [mg/L]	≤ 0.5	-	8	0.0004	0.0154	0.0029	100
Manganese – Total [mg/L]	-	≤ 0.1	8	0.0004	0.0154	0.0029	100
pH [pH units]	-	6.5 - 8.5	24	7.0	7.9	7.3	100
Total Dissolved Solids [mg/L]	-	≤ 600	8	340	400	370	100
Trihalomethanes – Total [µg/L]	≤ 250	-	42	74	201	159	100
Turbidity [NTU]	-	≤ 5	24	<0.1	0.62	0.11	100

Table 2 — *continued*

Central Metro System							
Parameter	**Health Guideline**	**Aesthetic Guideline**	**Samples**	**Min**	**Max**	**Ave***	**% Compliance#**
Chlorine Residual — Free [mg/L]	≤ 5	-	1,328	<0.1	2.0	0.4	100
Chlorine Residual — Free [mg/L]	-	≤ 0.6	1,328	<0.1	2.0	0.4	74.8
Colour — True [HU]	-	≤ 15	32	<1	2	<1	100
E.coli [per cfu/100mL]	++	-	1,324	0	0	0	100
Fluoride [mg/L]	≤ 1.5	-	32	0.20	1.0	0.83	100
Hardness — Total [mg/L]	-	≤ 200	32	68	136	96	100
Iron — Total [mg/L]	-	≤ 0.3	32	0.0014	0.0303	0.0087	100
Manganese — Total [mg/L]	≤ 0.5	-	32	<0.0001	0.0029	0.0007	100
Manganese — Total [mg/L]	-	≤ 0.1	32	<0.0001	0.0029	0.0007	100
pH [pH units]	-	6.5 - 8.5	96	7.0	7.9	7.4	100
Total Dissolved Solids [mg/L]	-	≤ 600	32	190	340	270	100
Trihalomethanes — Total [µg/L]	≤ 250	-	204	50	174	109	100
Turbidity [NTU]	-	≤ 5	96	<0.1	0.25	<0.1	100

East Metro System							
Parameter	**Health Guideline**	**Aesthetic Guideline**	**Samples**	**Min**	**Max**	**Ave***	**% Compliance#**
Chlorine Residual — Free [mg/L]	≤ 5	-	401	<0.1	1.4	0.5	100
Chlorine Residual — Free [mg/L]	-	≤ 0.6	401	<0.1	1.4	0.5	76.6
Colour — True [HU]	-	≤ 15	12	<1	<1	<1	100
E.coli [per cfu/100mL]	++	-	393	0	0	0	100
Fluoride [mg/L]	≤ 1.5	-	12	0.47	0.97	0.83	100
Hardness — Total [mg/L]	-	≤ 200	12	57	114	80	100
Iron — Total [mg/L]	-	≤ 0.3	12	0.0026	0.0153	0.0081	100
Manganese — Total [mg/L]	≤ 0.5	-	12	<0.0001	0.0016	0.0005	100
Manganese — Total [mg/L]	-	≤ 0.1	12	<0.0001	0.0016	0.0005	100
pH [pH units]	-	6.5 - 8.5	36	6.9	8.0	7.3	100
Total Dissolved Solids [mg/L]	-	≤ 600	12	170	320	250	100
Trihalomethanes — Total [µg/L]	≤ 250	-	66	48	178	111	100
Turbidity [NTU]	-	≤ 5	60	<0.1	0.23	<0.1	100

Table 2 — *continued*

Myponga Metro System

Parameter	Health Guideline	Aesthetic Guideline	Samples	Min	Max	Ave*	% Compliance#
Chlorine Residual — Free [mg/L]	≤ 5	-	64	<0.1	0.9	0.2	100
Chlorine Residual — Free [mg/L]	-	≤ 0.6	64	<0.1	0.9	0.2	98.4
Colour — True [HU]	-	≤ 15	4	<1	2	1	100
E.coli [per cfu/100mL]	++	-	64	0	0	0	100
Fluoride [mg/L]	≤ 1.5	-	4	<0.1	0.10	<0.1	100
Hardness — Total [mg/L]	-	≤ 200	4	105	117	110	100
Iron — Total [mg/L]	-	≤ 0.3	4	0.0065	0.0212	0.0126	100
Manganese — Total [mg/L]	≤ 0.5	-	4	0.0008	0.0034	0.0017	100
Manganese — Total [mg/L]	-	≤ 0.1	4	0.0008	0.0034	0.0017	100
pH [pH units]	-	6.5 - 8.5	12	7.0	7.6	7.4	100
Total Dissolved Solids [mg/L]	-	≤ 600	4	360	400	390	100
Trihalomethanes — Total [µg/L]	≤ 250	-	24	62	241	177	100
Turbidity [NTU]	-	≤ 5	12	<0.1	0.18	<0.1	100

North Metro System

Parameter	Health Guideline	Aesthetic Guideline	Samples	Min	Max	Ave*	% Compliance#
Chlorine Residual — Free [mg/L]	≤ 5	-	471	<0.1	1.2	0.4	100
Chlorine Residual — Free [mg/L]	-	≤ 0.6	471	<0.1	1.2	0.4	82.8
Colour — True [HU]	-	≤ 15	16	<1	2	<1	100
E.coli [per cfu/100mL]	++	-	471	0	0	0	100
Fluoride [mg/L]	≤ 1.5	-	16	0.12	1.0	0.83	100
Hardness — Total [mg/L]	-	≤ 200	16	50	144	103	100
Iron — Total [mg/L]	-	≤ 0.3	16	0.0023	0.0177	0.0067	100
Manganese — Total [mg/L]	≤ 0.5	-	16	<0.0001	0.0012	0.0005	100
Manganese — Total [mg/L]	-	≤ 0.1	16	<0.0001	0.0012	0.0005	100
pH [pH units]	-	6.5 - 8.5	48	7.1	7.7	7.3	100
Total Dissolved Solids [mg/L]	-	≤ 600	64	150	410	260	100
Trihalomethanes — Total [µg/L]	≤ 250	-	84	32	247	134	100
Turbidity [NTU]	-	≤ 5	48	<0.1	0.38	<0.1	100

Table 2 — *continued*

South Metro System

Parameter	Health Guideline	Aesthetic Guideline	Samples	Min	Max	Ave*	% Compliance#
Chlorine Residual — Free [mg/L]	≤ 5	-	139	<0.1	0.9	0.3	100
Chlorine Residual — Free [mg/L]	-	≤ 0.6	139	<0.1	0.9	0.3	93.5
Colour — True [HU]	-	≤ 15	4	<1	<1	<1	100
E.coli [per cfu/100mL]	++	-	139	0	0	0	100
Fluoride [mg/L]	≤ 1.5	-	4	0.86	0.94	0.92	100
Hardness — Total [mg/L]	-	≤ 200	4	74	121	99	100
Iron — Total [mg/L]	-	≤ 0.3	4	0.0033	0.0070	0.0050	100
Manganese — Total [mg/L]	≤ 0.5	-	4	0.0001	0.0020	0.0006	100
Manganese — Total [mg/L]	-	≤ 0.1	4	0.0001	0.0020	0.0006	100
pH [pH units]	-	6.5 - 8.5	12	7.1	7.7	7.4	100
Total Dissolved Solids [mg/L]	-	≤ 600	4	210	310	280	100
Trihalomethanes — Total [µg/L]	≤ 250	-	60	54	196	120	100
Turbidity [NTU]	-	≤ 5	12	<0.1	0.11	<0.1	100

West Metro System

Parameter	Health Guideline	Aesthetic Guideline	Samples	Min	Max	Ave*	% Compliance#
Chlorine Residual — Free [mg/L]	≤ 5	-	659	<0.1	1.5	0.4	100
Chlorine Residual — Free [mg/L]	-	≤ 0.6	659	<0.1	1.5	0.4	82.7
Colour — True [HU]	-	≤ 15	24	<1	2	<1	100
E.coli [per cfu/100mL]	++	-	499	0	0	0	100
Fluoride [mg/L]	≤ 1.5	-	24	0.18	0.97	0.75	100
Hardness — Total [mg/L]	-	≤ 200	24	61	149	105	100
Iron — Total [mg/L]	-	≤ 0.3	24	0.0021	0.0267	0.0090	100
Manganese — Total [mg/L]	≤ 0.5	-	24	<0.0001	0.0017	0.0007	100
Manganese — Total [mg/L]	-	≤ 0.1	24	<0.0001	0.0017	0.0007	100
pH [pH units]	-	6.5 - 8.5	72	7.0	8.0	7.3	100
Total Dissolved Solids [mg/L]	-	≤ 600	311	140	360	280	100
Trihalomethanes — Total [µg/L]	≤ 250	-	120	52	184	121	100
Turbidity [NTU]	-	≤ 5	72	<0.1	1.1	<0.1	100

Table 2 — *continued*

Metropolitan Adelaide — Total Distribution System							
Parameter	**Health Guideline**	**Aesthetic Guideline**	**Samples**	**Min**	**Max**	**Ave***	**% Compliance#**
Chlorine Residual — Free [mg/L]	-	≤ 0.6	3,482	<0.1	2.0	0.4	79.2
Chlorine Residual — Free [mg/L]	≤ 5	-	3,482	<0.1	2.0	0.4	100
Colour — True [HU]	-	≤ 15	108	<1	2	<1	100
E.coli [per cfu/100mL]	++	-	3,309	0	0	0	100
Fluoride [mg/L]	≤ 1.5	-	108	<0.1	1.0	0.79	100
Hardness — Total [mg/L]	-	≤ 200	108	50	149	98	100
Iron — Total [mg/L]	-	≤ 0.3	108	0.0014	0.6420	0.0144	99.1
Manganese — Total [mg/L]	-	≤ 0.1	108	<0.0001	0.0854	0.0016	100
Manganese — Total [mg/L]	≤ 0.5	-	108	<0.0001	0.0854	0.0016	100
pH [pH units]	-	6.5 - 8.5	324	6.9	8.0	7.3	100
Total Dissolved Solids [mg/L]	-	≤ 600	443	140	410	280	100
Trihalomethanes — Total [µg/L]	≤ 250	-	654	32	247	118	100
Turbidity [NTU]	-	≤ 5	348	<0.1	7.1	0.11	99.7

++ E. coli should not be detected in samples of drinking water.
** Limit of reporting (LOR) values replaced with LOR/2.*
 # Although we aim for 100 per cent compliance, the ADWG recognise that occasional detections may occur.
 # Prior to calculating percentage compliance for health related chemicals, individual results are rounded to the same number of significant figures as the guideline value in the ADWG (as prescribed in the ADWG and agreed with SA Health).

Table 3

2018-19 country source water quality

System	Total Dissolved Solids [mg/L]			Hardness – Total [mg/L]			Dissolved Organic Carbon [mg/L]			pH [pH Units]		
	Min	Max	Ave*	Min	Max	Ave*	Min	Max	Ave*	Min	Max	Ave*
Barmera WTP	82	180	120	N/A	N/A	N/A	2.3	3.5	2.9	7.3	8.4	7.7
Barossa WTP	290	360	330	93	116	104	10.4	12.1	11.2	7.3	7.9	7.7
Beachport IRP	650	680	670	261	270	266	0.9	1.0	1.0	7.4	7.5	7.5
Berri WTP	76	150	110	N/A	N/A	N/A	2.2	4.8	3.0	7.1	8.0	7.5
Blanchetown WTP	110	250	150	N/A	N/A	N/A	2.5	4.0	3.2	7.2	8.4	7.7
Bordertown	400	660	490	219	284	246	0.4	0.8	0.6	7.2	7.5	7.4
Cadell WTP	100	230	150	N/A	N/A	N/A	2.5	3.8	2.9	7.0	8.7	7.7
Coffin Bay	340	520	400	219	230	223	0.4	0.5	0.4	7.3	7.8	7.7
Cowirra WTP	120	240	160	N/A	N/A	N/A	2.8	5.0	3.4	6.9	7.8	7.5
Elliston	570	1000	730	259	333	279	0.5	0.5	0.5	7.2	7.6	7.4
Eyre South	440	1320	680	231	501	290	0.5	0.9	0.6	7.0	7.7	7.4
Geranium	1400	1550	1440	553	595	574	0.8	0.8	0.8	6.9	7.0	7.0
Glossop WTP	76	150	110	N/A	N/A	N/A	2.2	4.8	3.0	7.1	8.0	7.5
Happy Valley WTP	210	410	270	62	106	85	3.4	6.8	5.2	7.3	8.5	7.9
Hawker Desalination WTP	2200	2600	2400	911	1070	991	0.4	0.5	0.5	7.2	7.4	7.3
Kalangadoo IRP	530	560	540	355	357	356	1.2	1.2	1.2	7.1	7.4	7.3
Kanmantoo WTP	110	260	180	40	65	50	2.8	5.4	3.8	7.2	8.4	7.4
Kingston SE IRP	740	1020	890	207	256	234	0.9	1.1	1.0	7.4	7.6	7.5
Lameroo IRP	920	1100	980	231	235	233	0.5	0.5	0.5	7.3	7.8	7.6
Leigh Creek WTP	1900	5190	2700	450	1630	858	0.4	1.1	0.7	7.1	8.3	7.5
Loxton WTP	84	219	120	N/A	N/A	N/A	2.2	4.2	3.0	7.1	8.5	7.9
Lucindale IRP	810	840	830	299	301	300	2.0	2.3	2.2	7.4	7.6	7.6
Mannum WTP	120	250	160	38	65	47	3.0	5.7	3.7	7.1	8.0	7.5
Melrose	1200	1800	1490	270	391	331	<0.3	<0.3	<0.3	7.0	7.4	7.3
Middle River WTP	240	690	480	34	108	73	10.7	20.9	13.1	6.4	7.2	6.9
Millicent	570	730	630	318	363	344	1.1	1.4	1.2	7.4	7.6	7.5
Moorook WTP	83	170	120	N/A	N/A	N/A	2.5	4.4	3.2	7.4	8.2	7.8
Morgan WTP	100	250	150	32	61	40	2.5	4.3	3.3	7.2	8.5	7.7
Mt Burr	400	490	450	260	327	294	0.5	0.6	0.6	7.3	7.6	7.5
Mt Compass	99	360	180	38	56	47	<0.3	<0.3	<0.3	6.1	6.8	6.4
Mt Gambier	350	640	520	167	316	244	0.8	2.0	1.1	7.4	8.4	8.0
Mt Pleasant WTP	120	250	160	38	65	47	2.7	4.9	3.2	6.8	7.5	7.1
Murray Bridge WTP	110	260	180	40	65	50	2.8	5.4	3.8	7.2	8.4	7.4
Mypolonga WTP	130	270	180	N/A	N/A	N/A	3.0	5.2	3.5	7.0	7.8	7.4
Myponga WTP	320	370	340	101	118	109	10.8	13.4	12.0	7.3	8.2	7.8
Nangwarry	530	650	580	331	393	362	1.0	1.0	1.0	7.1	7.4	7.3

Table 3 — *continued*

System	Total Dissolved Solids [mg/L]			Hardness — Total [mg/L]			Dissolved Organic Carbon [mg/L]			pH [pH Units]		
	Min	Max	Ave*	Min	Max	Ave*	Min	Max	Ave*	Min	Max	Ave*
Naracoorte	1200	1310	1280	319	368	338	1.4	2.4	1.7	7.7	7.9	7.8
Orroroo~	1800	2100	1940	N/A	N/A	N/A	N/A	N/A	N/A	7.1	7.3	7.2
Padthaway	1400	1610	1530	588	595	592	0.8	0.8	0.8	7.2	7.3	7.2
Palmer WTP	120	250	160	38	65	47	3.0	5.7	3.7	7.1	8.0	7.5
Parachilna	820	840	830	313	313	313	<0.3	<0.3	<0.3	7.7	7.8	7.8
Parilla IRP	630	680	660	165	184	175	0.4	0.4	0.4	7.6	8.0	7.8
Penneshaw WTP	35000	37000	35800	N/A	N/A	N/A	1.0	1.2	1.1	7.7	8.1	8.0
Penola IRP	640	670	660	303	322	313	1.4	3.1	2.3	7.4	7.5	7.4
Pinnaroo IRP	680	780	730	242	257	249	0.5	0.5	0.5	7.4	7.5	7.5
Port MacDonnell	690	710	690	18	21	20	N/A	N/A	N/A	8.0	8.3	8.2
Quorn	1100	1400	1230	472	522	503	0.6	1.2	0.8	7.0	7.3	7.2
Renmark WTP	66	130	95	23	39	30	2.2	5.1	3.3	7.1	7.8	7.4
Robe IRP	630	970	750	69	148	119	1.0	1.8	1.4	7.5	7.9	7.7
Summit WTP	110	260	180	40	65	50	2.8	5.4	3.8	7.2	8.4	7.4
Swan Reach Town WTP	110	240	150	N/A	N/A	N/A	2.6	4.2	3.1	7.4	8.6	7.9
Swan Reach WTP	110	240	150	34	61	42	2.7	4.9	3.4	7.4	8.4	7.9
Tailem Bend WTP	140	280	200	44	69	55	3.1	5.5	3.8	7.1	8.6	7.6
Tarpeena IRP	640	750	690	393	409	401	1.0	1.2	1.1	7.3	7.5	7.4
Waikerie WTP	94	220	140	N/A	N/A	N/A	2.7	4.8	3.5	7.0	8.5	7.7
Warooka~	730	780	760	335	345	340	0.8	1.0	0.9	6.3	6.6	6.5
Wilmington	290	320	310	137	137	137	0.6	0.6	0.6	6.3	6.6	6.5
Woolpunda	89	200	130	N/A	N/A	N/A	1.8	3.6	2.7	7.0	8.3	7.8

* *Limit of reporting (LOR) values replaced with LOR/2.*

~ *Orroroo bores decommissioned March 2019. This area is now supplied by the Morgan WTP system. Warooka bores decommissioned October 2018. This area is now supplied by the Morgan WTP and Swan Reach WTP systems.*

N/A = not applicable.

Table 3 — *continued*

System	Turbidity [NTU]			Colour — True (456nm) [HU]			Nitrate as Nitrogen [mg/L]			Phosphorous — Total [mg/L]		
	Min	Max	Ave*	Min	Max	Ave*	Min	Max	Ave*	Min	Max	Ave*
Barmera WTP	14	130	60	5	9	7	N/A	N/A	N/A	N/A	N/A	N/A
Barossa WTP	0.41	1.0	0.66	18	32	24	0.001	0.0039	0.011	0.008	0.030	0.015
Beachport IRP	1.9	5.2	3.3	<1	4	<1	<0.003	<0.003	<0.003	0.041	0.043	0.042
Berri WTP	13	89	58	4	10	7	N/A	N/A	N/A	N/A	N/A	N/A
Blanchetown WTP	9.9	93	56	5	9	7	N/A	N/A	N/A	N/A	N/A	N/A
Bordertown	<0.1	1.4	<0.1	<1	<1	<1	0.028	0.397	0.134	0.009	0.016	0.012
Cadell WTP	12	98	60	5	9	7	N/A	N/A	N/A	N/A	N/A	N/A
Coffin Bay	<0.1	1.3	0.13	<1	<1	<1	0.185	1.05	0.725	0.012	0.018	0.015
Cowirra WTP	13	93	56	6	9	8	N/A	N/A	N/A	N/A	N/A	N/A
Elliston	<0.1	0.22	<0.1	<1	<1	<1	2.94	3.95	3.60	0.009	0.013	0.011
Eyre South	<0.1	16	0.39	<1	<1	<1	0.558	5.52	3.61	<0.005	0.023	0.011
Geranium	<0.1	0.20	<0.1	<1	<1	<1	0.027	0.037	0.032	0.038	0.038	0.038
Glossop WTP	13	89	58	4	10	7	N/A	N/A	N/A	N/A	N/A	N/A
Happy Valley WTP	7.1	35	16	9	26	17	<0.003	0.279	0.134	0.020	0.087	0.040
Hawker Desalination WTP	5.8	16	11	<1	<1	<1	<0.003	<0.003	<0.003	0.014	0.019	0.017
Kalangadoo IRP	2.6	5.9	4.0	<1	<1	<1	<0.003	0.010	0.003	0.023	0.024	0.024
Kanmantoo WTP	15	120	59	4	12	8	N/A	N/A	N/A	0.041	0.223	0.122
Kingston SE IRP	1.5	23	7.8	<1	<1	<1	<0.003	<0.003	<0.003	0.007	0.034	0.019
Lameroo IRP	1.8	5.9	3.3	<1	2	<1	<0.003	<0.003	<0.003	0.049	0.056	0.053
Leigh Creek WTP	<0.1	3.8	0.23	<1	<1	<1	0.396	2.19	1.24	<0.005	0.020	0.012
Loxton WTP	13	96	59	<1	12	7	0.001	0.153	0.036	0.050	0.160	0.099
Lucindale IRP	3.2	9.6	7.6	1	2	2	<0.003	0.010	0.006	0.036	0.040	0.038
Mannum WTP	16	130	63	6	9	7	0.010	0.361	0.131	0.058	0.276	0.141
Melrose	<0.1	1.2	0.27	<1	<1	<1	0.324	0.947	0.636	0.016	0.021	0.019
Middle River WTP	2.8	22	7.1	102	204	127	0.015	0.210	0.103	<0.005	0.036	0.022
Millicent	0.18	52	3.4	2	4	3	<0.003	0.065	0.038	0.010	0.024	0.016
Moorook WTP	11	97	58	5	9	7	0.001	0.159	0.028	0.039	0.217	0.099
Morgan WTP	7.3	89	56	<1	9	7	N/A	N/A	N/A	<0.005	0.222	0.107
Mt Burr	<0.1	0.54	0.13	<1	<1	<1	0.305	1.29	0.796	0.027	0.036	0.032
Mt Compass	<0.1	2.0	0.21	<1	<1	<1	0.040	0.050	0.045	0.012	0.042	0.027
Mt Gambier	0.13	4.5	0.75	<1	3	1	<0.003	4.17	2.31	<0.005	0.042	0.022
Mt Pleasant WTP	15	120	60	6	8	7	0.01	0.361	0.131	0.058	0.276	0.141
Murray Bridge WTP	15	120	59	4	12	8	N/A	N/A	N/A	0.041	0.223	0.122
Mypolonga WTP	<0.1	95	54	6	22	9	N/A	N/A	N/A	N/A	N/A	N/A
Myponga WTP	0.87	3.4	2.3	31	56	42	0.004	0.154	0.065	0.020	0.113	0.036
Nangwarry	<0.1	0.32	<0.1	<1	<1	<1	1.86	4.05	2.95	0.012	0.017	0.015

Table 3 — *continued*

System	Turbidity [NTU]			Colour – True (456nm) [HU]			Nitrate as Nitrogen [mg/L]			Phosphorous – Total [mg/L]		
	Min	Max	Ave*	Min	Max	Ave*	Min	Max	Ave*	Min	Max	Ave*
Naracoorte	0.22	0.66	0.33	4	5	4	<0.003	<0.003	<0.003	0.054	0.061	0.056
Orroroo~	<0.1	0.51	<0.1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A
Padthaway	0.12	3.2	0.60	<1	<1	<1	0.040	0.104	0.072	0.014	0.015	0.015
Palmer WTP	16	130	63	6	9	7	0.010	0.361	0.131	0.058	0.276	0.141
Parachilna	<0.1	0.14	<0.1	<1	<1	<1	1.28	1.28	1.28	0.009	0.009	0.009
Parilla IRP	1.1	4.4	2.9	<1	<1	<1	<0.003	<0.003	<0.003	0.033	0.035	0.034
Penneshaw WTP	0.14	4.0	0.72	N/A	N/A	N/A	N/A	N/A	N/A	<0.005	0.043	0.018
Penola IRP	8.4	16	13	1	3	2	<0.003	<0.003	<0.003	0.026	0.039	0.033
Pinnaroo IRP	0.59	5.7	3.4	<1	<1	<1	<0.003	<0.003	<0.003	0.046	0.085	0.060
Port MacDonnell	<0.1	0.73	0.15	3	6	4	N/A	N/A	N/A	0.163	0.191	0.177
Quorn	<0.1	0.43	0.13	<1	<1	<1	0.097	0.150	0.122	0.009	0.029	0.020
Renmark WTP	22	110	63	4	11	7	0.001	0.153	0.045	0.056	0.395	0.117
Robe IRP	<0.1	7.3	1.4	<1	<1	<1	<0.003	0.003	<0.003	0.042	0.049	0.044
Summit WTP	15	120	59	4	12	8	N/A	N/A	N/A	0.041	0.223	0.122
Swan Reach Town WTP	13	90	54	6	10	7	N/A	N/A	N/A	N/A	N/A	N/A
Swan Reach WTP	9.7	88	55	5	10	7	0.001	0.337	0.062	0.033	0.192	0.112
Tailem Bend WTP	16	90	54	7	10	8	N/A	N/A	N/A	0.056	0.216	0.122
Tarpeena IRP	0.25	19	8.5	<1	<1	<1	<0.003	<0.003	<0.003	0.043	0.045	0.044
Waikerie WTP	7.1	170	68	<1	12	7	0.001	0.177	0.029	0.038	0.255	0.129
Warooka~	<0.1	0.48	0.13	<1	<1	<1	3.01	4.56	3.79	<0.005	<0.005	<0.005
Wilmington	<0.1	3.3	0.38	<1	<1	<1	0.233	0.233	0.233	0.100	0.100	0.100
Woolpunda	10	100	60	5	10	7	N/A	N/A	N/A	N/A	N/A	N/A

* *Limit of reporting (LOR) values replaced with LOR/2.*

~ *Orroroo bores decommissioned March 2019. This area is now supplied by the Morgan WTP system. Warooka bores decommissioned October 2018. This area is now supplied by the Morgan WTP and Swan Reach WTP systems.*

N/A = not applicable.

Table 4

2018-19 country drinking water distribution systems — customer tap water quality against Australian Drinking Water Guidelines

System	*E.coli* [per cfu/100mL]		Chlorine Residual — Free [mg/L]^			
	Samples	Health Compliance %	Min	Max	Ave*	Health Compliance %#
ADWG value		++				≤ 5
Target		99.8% Free				99.8%
Barmera WTP	61	100	0.2	1.7	0.8	100
Barossa WTP	452	100	<0.1	3.4	0.6	100
Beachport IRP	62	100	0.5	1.6	0.9	100
Berri WTP	65	100	0.4	1.5	1.0	100
Blanchetown WTP	52	100	0.3	1.0	0.7	100
Bordertown	60	100	0.7	1.8	1.1	100
Cadell WTP	52	100	0.4	1.3	0.8	100
Coffin Bay	62	100	0.6	1.2	0.8	100
Cowirra WTP	60	100	0.6	2.1	1.3	100
Elliston	52	100	0.7	1.2	0.9	100
Eyre South	368	100	0.2	1.8	0.9	100
Eyre South / Morgan WTP	258	100	0.5	2.8	1.3	100
Geranium	51	100	0.7	2.0	1.2	100
Glossop WTP	63	100	0.5	1.5	1.0	100
Happy Valley WTP	63	100	<0.1	1.5	0.8	100
Hawker Desalination WTP	52	100	0.6	1.4	1.0	100
Kalangadoo IRP	62	100	0.4	1.6	1.0	100
Kanmantoo WTP	60	100	0.7	2.0	1.1	100
Kingston SE IRP	63	100	0.5	1.3	0.8	100
Lameroo IRP	52	100	0.7	2.0	1.4	100
Leigh Creek WTP	76	100	0.3	1.6	1.2	100
Loxton WTP	72	100	N/A	N/A	N/A	-
Lucindale IRP	64	100	0.5	1.2	0.8	100
Mannum WTP	65	100	0.3	2.2	1.1	100
Melrose	52	100	0.9	2.1	1.3	100
Middle River WTP	139	100	<0.1	1.5	0.7	100
Millicent	74	100	0.4	1.1	0.7	100
Moorook WTP	61	100	0.5	1.6	0.9	100
Morgan / Swan Reach WTP	514	100	N/A	N/A	N/A	-
Morgan WTP	636	100	N/A	N/A	N/A	-
Mt Burr	62	100	0.6	1.4	0.7	100
Mt Compass	62	100	0.7	1.5	1.1	100
Mt Gambier	152	100	0.3	2.0	1.0	100
Mt Pleasant WTP	120	100	0.1	2.2	1.2	100

Table 4 — *continued*

System	*E.coli* [per cfu/100mL]		Chlorine Residual — Free [mg/L]^			
	Samples	Health Compliance %	Min	Max	Ave*	Health Compliance %#
ADWG value		++				**≤ 5**
Target		**99.8% Free**				**99.8%**
Murray Bridge WTP	150	100	<0.1	4.4	1.9	100
Mypolonga WTP	61	100	0.2	2.0	1.2	100
Myponga WTP	276	99.6	<0.1	1.6	0.4	100
Nangwarry	62	100	0.5	1.3	0.8	100
Naracoorte	76	100	0.3	1.1	0.6	100
Orroroo~	37	100	0.8	1.5	1.2	100
Padthaway	50	100	0.1	1.3	0.9	100
Palmer WTP	90	100	0.2	1.8	0.9	100
Parachilna	52	100	0.3	1.3	0.7	100
Parilla IRP	52	100	0.7	2.5	1.3	100
Penneshaw WTP	60	100	0.6	2.3	1.2	100
Penola IRP	64	100	<0.1	1.3	0.9	100
Pinnaroo IRP	60	100	0.6	1.9	1.1	100
Port MacDonnell	104	100	0.4	2.5	0.9	100
Quorn	52	100	0.4	1.6	1.1	100
Renmark WTP	194	100	<0.1	2.0	1.1	100
Robe IRP	64	100	0.5	1.1	0.8	100
Summit WTP	435	100	N/A	N/A	N/A	-
Swan Reach Town WTP	60	100	0.4	1.3	0.9	100
Swan Reach WTP	388	100	N/A	N/A	N/A	-
Tailem Bend WTP	266	100	N/A	N/A	N/A	-
Tarpeena IRP	64	100	0.4	1.8	0.9	100
Waikerie WTP	63	100	0.3	1.8	0.9	100
Warooka~	13	100	1.1	1.5	1.3	100
Wilmington	52	100	0.4	2.6	1.2	100
Woolpunda	75	100	N/A	N/A	N/A	-

^ *Chlorinated systems only.*
++ *E. coli should not be detected in samples of drinking water. Although we aim for 100 per cent compliance, the ADWG recognise that occasional detections may occur. In accordance with the guidelines any detection is immediately investigated, and corrective action implemented as agreed with SA Health.*
~ *Orroroo system decommissioned March 2019. This area is now supplied by the Morgan WTP system. Warooka system decommissioned October 2018. This area is now supplied by the Morgan / Swan Reach WTP system.*
* *Limit of reporting (LOR) values replaced with LOR/2.*
\# *Prior to calculating percentage compliance for health related chemicals, individual results are rounded to the same number of significant figures as the guideline value in the ADWG (as prescribed in the ADWG and agreed with SA Health).*
N/A = not applicable.

Table 4 — *continued*

System	Chlorine Residual – Total [mg/L]^				Total Dissolved Solids [mg/L]			
	Min	Max	Ave*	Health Compliance %#	Min	Max	Ave*	Aesthetic Compliance %
ADWG value				**≤ 5**				**≤600**
Target				**99.8%**				
Barmera WTP	N/A	N/A	N/A	-	120	210	160	100
Barossa WTP	N/A	N/A	N/A	-	330	410	370	100
Beachport IRP	N/A	N/A	N/A	-	670	670	670	0.0
Berri WTP	N/A	N/A	N/A	-	110	180	140	100
Blanchetown WTP	N/A	N/A	N/A	-	130	230	170	100
Bordertown	N/A	N/A	N/A	-	460	500	480	100
Cadell WTP	N/A	N/A	N/A	-	120	250	170	100
Coffin Bay	N/A	N/A	N/A	-	390	460	440	100
Cowirra WTP	N/A	N/A	N/A	-	140	220	190	100
Elliston	N/A	N/A	N/A	-	740	840	770	0.0
Eyre South	N/A	N/A	N/A	-	500	580	550	100
Eyre South / Morgan WTP	N/A	N/A	N/A	-	320	460	410	100
Geranium	N/A	N/A	N/A	-	1400	1500	1400	0.0
Glossop WTP	N/A	N/A	N/A	-	100	210	150	100
Happy Valley WTP	N/A	N/A	N/A	-	230	340	290	100
Hawker Desalination WTP	N/A	N/A	N/A	-	360	390	380	100
Kalangadoo IRP	N/A	N/A	N/A	-	540	550	550	100
Kanmantoo WTP	N/A	N/A	N/A	-	150	230	190	100
Kingston SE IRP	N/A	N/A	N/A	-	830	880	850	0.0
Lameroo IRP	N/A	N/A	N/A	-	840	990	940	0.0
Leigh Creek WTP	N/A	N/A	N/A	-	85	100	94	100
Loxton WTP	2.5	5.0	3.8	100	130	140	140	100
Lucindale IRP	N/A	N/A	N/A	-	820	840	830	0.0
Mannum WTP	N/A	N/A	N/A	-	150	230	180	100
Melrose	N/A	N/A	N/A	-	1500	1600	1500	0.0
Middle River WTP	N/A	N/A	N/A	-	520	790	630	50.0
Millicent	N/A	N/A	N/A	-	620	630	620	0.0
Moorook WTP	N/A	N/A	N/A	-	120	170	140	100
Morgan / Swan Reach WTP	0.4	4.4	3.2	100	160	270	200	100
Morgan WTP	<0.1	4.5	2.9	100	160	280	220	100
Mt Burr	N/A	N/A	N/A	-	440	460	450	100
Mt Compass	N/A	N/A	N/A	-	230	270	250	100
Mt Gambier	N/A	N/A	N/A	-	350	630	370	95.8
Mt Pleasant WTP	N/A	N/A	N/A	-	140	210	170	100

Table 4 — *continued*

System	Chlorine Residual — Total [mg/L]^				Total Dissolved Solids [mg/L]			
	Min	Max	Ave*	Health Compliance %#	Min	Max	Ave*	Aesthetic Compliance %
ADWG value				≤ 5				≤600
Target				99.8%				
Murray Bridge WTP	N/A	N/A	N/A	-	160	260	210	100
Mypolonga WTP	N/A	N/A	N/A	-	150	240	200	100
Myponga WTP	1.9++	3.5++	2.4++	100	330	420	390	100
Nangwarry	N/A	N/A	N/A	-	560	600	580	100
Naracoorte	N/A	N/A	N/A	-	1290	1300	1300	0.0
Orroroo~	N/A	N/A	N/A		2000	2000	2000	0.0
Padthaway	N/A	N/A	N/A	-	1600	1600	1600	0.0
Palmer WTP	N/A	N/A	N/A	-	140	270	190	100
Parachilna	N/A	N/A	N/A	-	830	840	840	0.0
Parilla IRP	N/A	N/A	N/A	-	650	690	670	0.0
Penneshaw WTP	N/A	N/A	N/A	-	240	360	300	100
Penola IRP	N/A	N/A	N/A	-	650	670	660	0.0
Pinnaroo IRP	N/A	N/A	N/A	-	690	770	730	0.0
Port MacDonnell	N/A	N/A	N/A	-	690	700	700	0.0
Quorn	N/A	N/A	N/A	-	1100	1200	1200	0.0
Renmark WTP	N/A	N/A	N/A	-	110	140	120	100
Robe IRP	N/A	N/A	N/A	-	690	800	740	0.0
Summit WTP	2.1	4.9	3.5	100	150	280	210	100
Swan Reach Town WTP	N/A	N/A	N/A	-	140	200	170	100
Swan Reach WTP	2.4	4.5	3.5	100	140	270	190	100
Tailem Bend WTP	<0.1	4.6	2.4	100	180	280	240	100
Tarpeena IRP	N/A	N/A	N/A	-	690	700	700	0.0
Waikerie WTP	N/A	N/A	N/A	-	140	175	160	100
Warooka~	N/A	N/A	N/A		740	740	740	0.0
Wilmington	N/A	N/A	N/A	-	310	580	390	100
Woolpunda	0.5	3.7	2.6	100	140	160	150	100

^ *Chloraminated systems only.*
++ *Myponga township during chloramination trial.*
~ *Orroroo system decommissioned March 2019. This area is now supplied by the Morgan WTP system. Warooka system decommissioned October 2018. This area is now supplied by the Morgan / Swan Reach WTP system.*
* *Limit of reporting (LOR) values replaced with LOR/2.*
\# *Prior to calculating percentage compliance for health related chemicals, individual results are rounded to the same number of significant figures as the guideline value in the ADWG (as prescribed in the ADWG and agreed with SA Health).*
N/A = not applicable.

Table 4 — *continued*

System	Colour — True (456nm) [HU]				Turbidity [NTU]			
	Min	Max	Ave*	Aesthetic Compliance %	Min	Max	Ave*	Aesthetic Compliance %
ADWG value				≤ 15				≤ 5
Target								
Barmera WTP	<1	1	<1	100	<0.1	4.2	0.30	100
Barossa WTP	<1	2	<1	100	<0.1	1.1	0.14	100
Beachport IRP	<1	6	2	100	<0.1	0.20	<0.1	100
Berri WTP	<1	3	1	100	<0.1	0.70	0.12	100
Blanchetown WTP	<1	5	1	100	0.13	0.42	0.19	100
Bordertown	<1	<1	<1	100	<0.1	0.18	<0.1	100
Cadell WTP	<1	1	<1	100	<0.1	0.18	0.12	100
Coffin Bay	<1	<1	<1	100	<0.1	0.14	<0.1	100
Cowirra WTP	<1	<1	<1	100	<0.1	0.13	<0.1	100
Elliston	<1	<1	<1	100	<0.1	0.18	<0.1	100
Eyre South	<1	2	<1	100	<0.1	2.9	<0.1	100
Eyre South / Morgan WTP	<1	<1	<1	100	<0.1	0.78	<0.1	100
Geranium	<1	<1	<1	100	<0.1	0.14	<0.1	100
Glossop WTP	<1	<1	<1	100	<0.1	4.6	0.32	100
Happy Valley WTP	<1	<1	<1	100	<0.1	0.24	<0.1	100
Hawker Desalination WTP	<1	2	<1	100	<0.1	0.24	0.11	100
Kalangadoo IRP	<1	<1	<1	100	<0.1	0.18	<0.1	100
Kanmantoo WTP	<1	<1	<1	100	<0.1	0.25	0.13	100
Kingston SE IRP	<1	<1	<1	100	<0.1	1.9	0.13	100
Lameroo IRP	<1	<1	<1	100	<0.1	0.13	<0.1	100
Leigh Creek WTP	<1	<1	<1	100	<0.1	7.8	0.41	97.2
Loxton WTP	<1	1	<1	100	<0.1	0.25	<0.1	100
Lucindale IRP	<1	<1	<1	100	<0.1	0.14	<0.1	100
Mannum WTP	<1	<1	<1	100	<0.1	0.26	0.10	100
Melrose	<1	<1	<1	100	<0.1	0.12	<0.1	100
Middle River WTP	<1	<1	<1	100	<0.1	0.65	0.12	100
Millicent	<1	<1	<1	100	<0.1	0.23	<0.1	100
Moorook WTP	<1	<1	<1	100	<0.1	0.32	0.12	100
Morgan / Swan Reach WTP	<1	1	<1	100	<0.1	0.90	0.11	100
Morgan WTP	<1	2	<1	100	<0.1	4.9	0.13	100
Mt Burr	<1	<1	<1	100	<0.1	0.13	<0.1	100
Mt Compass	<1	<1	<1	100	<0.1	0.13	<0.1	100
Mt Gambier	<1	<1	<1	100	<0.1	0.37	0.14	100
Mt Pleasant WTP	<1	<1	<1	100	<0.1	0.21	<0.1	100

Table 4 — *continued*

System	Colour – True (456nm) [HU]				Turbidity [NTU]			
	Min	Max	Ave*	Aesthetic Compliance %	Min	Max	Ave*	Aesthetic Compliance %
ADWG value				≤ 15				≤ 5
Target								
Murray Bridge WTP	<1	<1	<1	100	<0.1	0.48	0.15	100
Mypolonga WTP	<1	1	<1	100	<0.1	0.24	<0.1	100
Myponga WTP	<1	2	1	100	<0.1	8.6	0.19	99.4
Nangwarry	<1	<1	<1	100	<0.1	0.21	<0.1	100
Naracoorte	<1	<1	<1	100	<0.1	4.9	0.46	100
Orroroo~	<1	<1	<1	100	<0.1	<0.1	<0.1	100
Padthaway	<1	<1	<1	100	0.14	1.4	0.28	100
Palmer WTP	<1	1	<1	100	<0.1	3.3	0.12	100
Parachilna	<1	<1	<1	100	<0.1	0.14	<0.1	100
Parilla IRP	<1	<1	<1	100	<0.1	0.13	<0.1	100
Penneshaw WTP	<1	<1	<1	100	<0.1	1.5	0.29	100
Penola IRP	<1	<1	<1	100	<0.1	0.25	<0.1	100
Pinnaroo IRP	<1	<1	<1	100	<0.1	0.13	<0.1	100
Port MacDonnell	<1	<1	<1	100	<0.1	0.28	0.13	100
Quorn	<1	<1	<1	100	<0.1	0.15	<0.1	100
Renmark WTP	<1	6	<1	100	<0.1	2.5	0.10	100
Robe IRP	<1	<1	<1	100	<0.1	<0.1	<0.1	100
Summit WTP	<1	2	1	100	<0.1	0.25	<0.1	100
Swan Reach Town WTP	<1	<1	<1	100	<0.1	0.20	<0.1	100
Swan Reach WTP	<1	2	1	100	<0.1	0.28	<0.1	100
Tailem Bend WTP	<1	2	1	100	<0.1	2.6	0.15	100
Tarpeena IRP	<1	<1	<1	100	<0.1	0.13	<0.1	100
Waikerie WTP	<1	<1	<1	100	<0.1	0.27	0.11	100
Warooka~	<1	<1	<1	100	<0.1	<0.1	<0.1	100
Wilmington	<1	<1	<1	100	<0.1	0.37	0.15	100
Woolpunda	<1	<1	<1	100	0.13	6.7	0.66	96.0

~ *Orroroo system decommissioned March 2019. This area is now supplied by the Morgan WTP system. Warooka system decommissioned October 2018. This area is now supplied by the Morgan / Swan Reach WTP system.*

* *Limit of reporting (LOR) values replaced with LOR/2.*

Table 4 — *continued*

System	pH [pH Units]				Trihalomethanes — Total [µg/L]^			
	Min	Max	Ave*	Aesthetic Compliance %	Min	Max	Ave*	Health Compliance %#
ADWG value				**6.5-8.5**				**≤ 250**
Target								**99.8%**
Barmera WTP	7.3	7.9	7.6	100	29	87	65	100
Barossa WTP	7.0	8.8	7.5	97.6	110	287	191	99.1
Beachport IRP	7.5	7.8	7.7	100	40	40	40	100
Berri WTP	7.4	7.8	7.6	100	28	75	57	100
Blanchetown WTP	7.3	7.8	7.6	100	47	90	69	100
Bordertown	7.1	7.6	7.4	100	12	12	12	100
Cadell WTP	7.2	8.0	7.6	100	39	85	55	100
Coffin Bay	7.3	8.0	7.8	100	13	13	13	100
Cowirra WTP	7.4	7.8	7.6	100	44	98	77	100
Elliston	7.5	7.9	7.7	100	10	10	10	100
Eyre South	7.2	8.3	7.6	100	12	30	20	100
Eyre South / Morgan WTP	7.6	8.1	7.9	100	51	241	134	100
Geranium	7.0	7.2	7.1	100	7	7	7	100
Glossop WTP	7.5	8.0	7.7	100	48	75	59	100
Happy Valley WTP	7.0	8.4	7.6	100	109	210	167	100
Hawker Desalination WTP	7.6	8.1	7.9	100	9	9	9	100
Kalangadoo IRP	7.2	7.5	7.3	100	42	42	42	100
Kanmantoo WTP	7.2	7.8	7.5	100	50	96	78	100
Kingston SE IRP	7.5	7.7	7.6	100	38	38	38	100
Lameroo IRP	7.4	7.8	7.7	100	23	23	23	100
Leigh Creek WTP	8.1	9.1	8.5	60.5	8	8	8	100
Loxton WTP	8.3	9.0	8.7	8.3	N/A	N/A	N/A	-
Lucindale IRP	7.6	7.8	7.7	100	141	141	141	100
Mannum WTP	7.0	8.0	7.5	100	53	79	68	100
Melrose	7.2	7.8	7.5	100	4	4	4	100
Middle River WTP	6.9	7.3	7.1	100	14	286	129	88.9
Millicent	7.4	7.7	7.6	100	74	74	74	100
Moorook WTP	7.8	8.3	8.0	100	51	87	64	100
Morgan / Swan Reach WTP	8.4	9.8	9.1	1.4	N/A	N/A	N/A	-
Morgan WTP	6.8	9.2	8.5	31.5	46	168	98	100
Mt Burr	7.6	8.0	7.8	100	12	12	12	100
Mt Compass	7.3	8.0	7.6	100	4	4	4	100
Mt Gambier	7.6	8.3	8.1	100	18	29	24	100
Mt Pleasant WTP	7.2	7.9	7.6	100	65	146	104	100

Table 4 — *continued*

System	pH [pH Units]				Trihalomethanes — Total [µg/L]^			
	Min	Max	Ave*	Aesthetic Compliance %	Min	Max	Ave*	Health Compliance %#
ADWG value				**6.5-8.5**				**≤ 250**
Target								**99.8%**
Murray Bridge WTP	7.2	8.0	7.5	100	49	197	110	100
Mypolonga WTP	7.3	8.3	7.5	100	76	149	109	100
Myponga WTP	7.0	8.6	7.7	98.0	163	296	231	72.9
Nangwarry	7.4	7.6	7.5	100	20	20	20	100
Naracoorte	7.6	7.9	7.8	100	180	237	199	100
Orroroo~	7.4	7.7	7.5	100	N/A	N/A	N/A	-
Padthaway	7.4	7.6	7.5	100	12	12	12	100
Palmer WTP	7.2	7.8	7.4	100	50	96	70	100
Parachilna	7.6	8.1	7.9	100	8	8	8	100
Parilla IRP	7.4	8.0	7.8	100	25	25	25	100
Penneshaw WTP	7.5	8.0	7.8	100	<4	<4	<4	100
Penola IRP	7.3	7.7	7.5	100	63	63	63	100
Pinnaroo IRP	7.4	7.7	7.5	100	14	14	14	100
Port MacDonnell	7.9	8.2	8.1	100	101	101	101	100
Quorn	7.1	7.4	7.3	100	10	10	10	100
Renmark WTP	7.1	9.1	7.8	83.3	19	126	67	100
Robe IRP	7.5	7.9	7.8	100	49	49	49	100
Summit WTP	7.6	9.3	8.7	19.4	N/A	N/A	N/A	-
Swan Reach Town WTP	7.3	7.9	7.6	100	52	96	68	100
Swan Reach WTP	8.2	9.3	8.9	6.9	N/A	N/A	N/A	-
Tailem Bend WTP	7.4	9.5	8.6	50.8	N/A	N/A	N/A	-
Tarpeena IRP	7.5	7.8	7.7	100	55	55	55	100
Waikerie WTP	7.4	7.8	7.7	100	40	99	74	100
Warooka~	7.5	7.7	7.6	100	N/A	N/A	N/A	-
Wilmington	6.1	7.7	6.8	84.6	18	18	18	100
Woolpunda	8.6	9.5	9.1	0.0	N/A	N/A	N/A	-

~ *Orroroo system decommissioned March 2019. This area is now supplied by the Morgan WTP system. Warooka system decommissioned October 2018. This area is now supplied by the Morgan / Swan Reach WTP system.*

^ *Chlorinated systems only.*

* *Limit of reporting (LOR) values replaced with LOR/2.*

\# *Prior to calculating percentage compliance for health related chemicals, individual results are rounded to the same number of significant figures as the guideline value in the ADWG (as prescribed in the ADWG and agreed with SA Health).*

\# *Although we aim for 100 per cent health compliance, the ADWG recognise that occasional detections may occur. The ADWG states: "although concentrations of by-products should be kept as low as possible, efforts to achieve this should never jeopardise effective disinfection." In accordance with the guidelines any detection is immediately investigated, and corrective action implemented as agreed with SA Health.*

N/A = not applicable.

Table 4 — *continued*

System	Fluoride [mg/L]				Iron — Total [mg/L]			
	Min	Max	Ave*	Health Compliance %#	Min	Max	Ave*	Aesthetic Compliance %
ADWG value				**≤ 1.5**				**≤ 0.3**
Target				**99.8%**				
Barmera WTP	0.86	0.97	0.92	100	0.0132	0.0196	0.0163	100
Barossa WTP	<0.1	0.99	0.80	100	0.0062	0.0883	0.0309	100
Beachport IRP	0.21	0.25	0.23	100	<0.0005	0.0197	0.0054	100
Berri WTP	0.84	0.94	0.88	100	0.0261	0.0606	0.0480	100
Blanchetown WTP	<0.1	<0.1	<0.1	100	0.0127	0.1370	0.0448	100
Bordertown	0.30	0.32	0.32	100	<0.0005	0.0806	0.0073	100
Cadell WTP	<0.1	<0.1	<0.1	100	0.0070	0.0081	0.0077	100
Coffin Bay	1.0	1.3	1.2	100	<0.0005	0.0023	0.0011	100
Cowirra WTP	<0.1	0.11	<0.1	100	0.0077	0.0113	0.0100	100
Elliston	0.61	0.71	0.65	100	<0.0005	0.0011	0.0008	100
Eyre South	0.41	1.2	0.48	100	<0.0005	0.0603	0.0054	100
Eyre South / Morgan WTP	0.60	0.66	0.63	100	0.0011	0.0134	0.0049	100
Geranium	1.0	1.1	1.0	100	0.0036	0.0147	0.0096	100
Glossop WTP	<0.1	<0.1	<0.1	100	0.0093	0.0181	0.0151	100
Happy Valley WTP	0.51	0.95	0.81	100	0.0094	0.0191	0.0130	100
Hawker Desalination WTP	<0.1	<0.1	<0.1	100	0.0024	0.0175	0.0081	100
Kalangadoo IRP	<0.1	0.18	0.11	100	0.0051	0.0434	0.0179	100
Kanmantoo WTP	<0.1	0.10	<0.1	100	0.0011	0.0131	0.0049	100
Kingston SE IRP	0.30	0.32	0.31	100	0.0010	0.1490	0.0166	100
Lameroo IRP	0.60	0.68	0.63	100	0.0152	0.0465	0.0214	100
Leigh Creek WTP	<0.1	<0.1	<0.1	100	0.0117	0.0289	0.0173	100
Loxton WTP	0.86	0.94	0.90	100	0.0017	0.0100	0.0043	100
Lucindale IRP	0.31	0.34	0.33	100	0.0012	0.0082	0.0044	100
Mannum WTP	0.92	0.96	0.94	100	0.0240	0.0270	0.0254	100
Melrose	1.1	1.2	1.1	100	0.0051	0.0156	0.0081	100
Middle River WTP	<0.1	<0.1	<0.1	100	0.0131	0.0322	0.0182	100
Millicent	0.99	1.1	1.0	100	0.0101	0.0433	0.0197	100
Moorook WTP	<0.1	<0.1	<0.1	100	0.0071	0.0135	0.0100	100
Morgan / Swan Reach WTP	<0.1	1.0	0.78	100	0.0035	0.0214	0.0090	100
Morgan WTP	<0.1	1.1	0.76	100	0.0019	0.1006	0.0193	100
Mt Burr	0.25	0.29	0.27	100	0.0019	0.0070	0.0034	100
Mt Compass	0.20	0.26	0.23	100	0.0018	0.0042	0.0028	100
Mt Gambier	0.44	0.96	0.85	100	<0.0005	0.0645	0.0036	100
Mt Pleasant WTP	0.84	0.92	0.88	100	<0.0005	0.0017	0.0010	100

Table 4 — *continued*

System	Fluoride [mg/L]				Iron — Total [mg/L]			
	Min	Max	Ave*	Health Compliance %#	Min	Max	Ave*	Aesthetic Compliance %
ADWG value				≤ 1.5				≤ 0.3
Target				99.8%				
Murray Bridge WTP	0.91	0.97	0.94	100	0.0035	0.1357	0.0457	100
Mypolonga WTP	<0.1	<0.1	<0.1	100	0.0064	0.0127	0.0097	100
Myponga WTP	<0.1	0.20	<0.1	100	0.0026	0.1105	0.0208	100
Nangwarry	0.11	0.12	0.11	100	0.0006	0.0023	0.0013	100
Naracoorte	1.2	1.2	1.2	100	0.1250	0.1787	0.1475	100
Orroroo~	1.3	1.3	1.3	100	0.0067	0.0070	0.0069	100
Padthaway	0.11	0.12	0.12	100	0.0159	0.0322	0.0213	100
Palmer WTP	<0.1	0.10	<0.1	100	0.0248	0.0977	0.0497	100
Parachilna	0.59	0.61	0.61	100	0.0014	0.0025	0.0019	100
Parilla IRP	0.43	0.46	0.45	100	0.0024	0.0168	0.0077	100
Penneshaw WTP	<0.1	<0.1	<0.1	100	0.0012	0.0471	0.0212	100
Penola IRP	0.18	0.19	0.19	100	0.0011	0.0844	0.0243	100
Pinnaroo IRP	0.68	0.70	0.69	100	0.0023	0.0699	0.0127	100
Port MacDonnell	0.77	0.79	0.78	100	0.0024	0.0075	0.0045	100
Quorn	0.53	0.59	0.57	100	<0.0005	0.0022	0.0009	100
Renmark WTP	0.83	0.94	0.90	100	0.0027	0.0420	0.0091	100
Robe IRP	0.28	0.31	0.30	100	<0.0005	0.0093	0.0035	100
Summit WTP	0.81	0.96	0.90	100	<0.0005	0.0276	0.0067	100
Swan Reach Town WTP	<0.1	0.10	<0.1	100	0.0115	0.0317	0.0192	100
Swan Reach WTP	0.84	0.95	0.90	100	<0.0005	0.0059	0.0025	100
Tailem Bend WTP	0.88	0.97	0.92	100	0.0019	0.0094	0.0045	100
Tarpeena IRP	0.16	0.20	0.18	100	0.0033	0.0823	0.0134	100
Waikerie WTP	0.85	0.90	0.89	100	0.0164	0.0453	0.0282	100
Warooka~	1.0	1.0	1.0	100	0.0006	0.0006	0.0006	100
Wilmington	0.11	0.35	0.20	100	0.0168	0.0635	0.0356	100
Woolpunda	<0.1	<0.1	<0.1	100	0.0017	0.3867	0.0996	75.0

~ *Orroroo system decommissioned March 2019. This area is now supplied by the Morgan WTP system. Warooka system decommissioned October 2018. This area is now supplied by the Morgan / Swan Reach WTP system.*

* *Limit of reporting (LOR) values replaced with LOR/2.*

\# *Prior to calculating percentage compliance for health related chemicals, individual results are rounded to the same number of significant figures as the guideline value in the ADWG (as prescribed in the ADWG and agreed with SA Health).*

Table 4 — *continued*

System	Manganese — Total [mg/L]					Hardness — Total [mg/L]			
	Min	Max	Ave*	Health Compliance %#	Aesthetic Compliance %	Min	Max	Ave*	Aesthetic Compliance %
ADWG value				≤ 0.5	≤ 0.1				≤ 200
Target				99.8%					
Barmera WTP	0.0023	0.0152	0.0063	100	100	30	54	40	100
Barossa WTP	0.0003	0.0038	0.0015	100	100	110	154	128	100
Beachport IRP	<0.0001	0.0021	0.0007	100	100	261	277	270	0.0
Berri WTP	0.0009	0.0048	0.0024	100	100	29	44	37	100
Blanchetown WTP	0.0008	0.0013	0.0010	100	100	38	64	47	100
Bordertown	<0.0001	0.0005	0.0002	100	100	248	267	257	0.0
Cadell WTP	0.0004	0.0007	0.0005	100	100	33	62	44	100
Coffin Bay	<0.0001	0.0002	0.0002	100	100	227	243	232	0.0
Cowirra WTP	0.0003	0.0004	0.0003	100	100	38	70	51	100
Elliston	<0.0001	<0.0001	<0.0001	100	100	289	316	300	0.0
Eyre South	<0.0001	0.0015	0.0002	100	100	246	281	256	0.0
Eyre South / Morgan WTP	<0.0001	0.0022	0.0007	100	100	134	205	176	91.7
Geranium	<0.0001	0.0003	0.0002	100	100	549	595	578	0.0
Glossop WTP	0.0002	0.0006	0.0004	100	100	27	54	38	100
Happy Valley WTP	0.0002	0.0013	0.0007	100	100	76	114	99	100
Hawker Desalination WTP	0.0002	0.0006	0.0005	100	100	107	118	114	100
Kalangadoo IRP	<0.0001	0.0006	0.0003	100	100	345	357	353	0.0
Kanmantoo WTP	<0.0001	0.0014	0.0005	100	100	43	57	50	100
Kingston SE IRP	<0.0001	0.0005	0.0003	100	100	227	242	233	0.0
Lameroo IRP	0.0008	0.0016	0.0011	100	100	219	232	228	0.0
Leigh Creek WTP	0.0002	0.0008	0.0005	100	100	4	5	5	100
Loxton WTP	0.0012	0.0023	0.0015	100	100	31	35	32	100
Lucindale IRP	<0.0001	<0.0001	<0.0001	100	100	306	319	313	0.0
Mannum WTP	0.0012	0.0064	0.0043	100	100	41	53	47	100
Melrose	<0.0001	0.0002	0.0001	100	100	341	351	345	0.0
Middle River WTP	0.0006	0.0012	0.0008	100	100	68	110	85	100
Millicent	0.0005	0.0013	0.0007	100	100	335	373	353	0.0
Moorook WTP	0.0008	0.0017	0.0011	100	100	33	46	38	100
Morgan / Swan Reach WTP	0.0008	0.0045	0.0021	100	100	38	73	50	100
Morgan WTP	0.0009	0.0057	0.0029	100	100	37	83	55	100
Mt Burr	<0.0001	0.0003	0.0001	100	100	287	305	294	0.0
Mt Compass	0.0002	0.0003	0.0003	100	100	52	57	55	100
Mt Gambier	<0.0001	0.0124	0.0017	100	100	164	316	183	95.8
Mt Pleasant WTP	0.0002	0.0003	0.0003	100	100	38	52	45	100

Table 4 — *continued*

System	Manganese — Total [mg/L]					Hardness — Total [mg/L]			
	Min	Max	Ave*	Health Compliance %#	Aesthetic Compliance %	Min	Max	Ave*	Aesthetic Compliance %
ADWG value				≤ 0.5	≤ 0.1				≤ 200
Target				99.8%					
Murray Bridge WTP	0.0019	0.0094	0.0041	100	100	41	64	51	100
Mypolonga WTP	0.0002	0.0004	0.0003	100	100	42	60	51	100
Myponga WTP	0.0005	0.0066	0.0022	100	100	104	120	112	100
Nangwarry	<0.0001	<0.0001	<0.0001	100	100	364	376	372	0.0
Naracoorte	0.0094	0.0192	0.0153	100	100	336	344	340	0.0
Orroroo~	0.0002	0.0002	0.0002	100	100	680	685	683	0.0
Padthaway	0.0004	0.0007	0.0005	100	100	563	598	583	0.0
Palmer WTP	0.0007	0.0021	0.0014	100	100	41	53	45	100
Parachilna	<0.0001	<0.0001	<0.0001	100	100	307	313	310	0.0
Parilla IRP	<0.0001	0.0003	0.0002	100	100	177	184	182	100
Penneshaw WTP	0.0010	0.1406	0.0512	100	75.0	61	82	70	100
Penola IRP	0.0004	0.0016	0.0009	100	100	297	320	309	0.0
Pinnaroo IRP	0.0001	0.0060	0.0017	100	100	241	250	247	0.0
Port MacDonnell	0.0005	0.0009	0.0007	100	100	19	22	21	100
Quorn	<0.0001	0.0002	<0.0001	100	100	472	518	495	0.0
Renmark WTP	0.0009	0.0061	0.0025	100	100	29	41	34	100
Robe IRP	<0.0001	0.0015	0.0006	100	100	114	135	127	100
Summit WTP	0.0007	0.0073	0.0026	100	100	42	67	52	100
Swan Reach Town WTP	0.0005	0.0011	0.0008	100	100	38	48	43	100
Swan Reach WTP	0.0006	0.0065	0.0022	100	100	39	66	52	100
Tailem Bend WTP	0.0005	0.0052	0.0016	100	100	47	80	62	100
Tarpeena IRP	<0.0001	0.0012	0.0004	100	100	382	420	401	0.0
Waikerie WTP	0.0021	0.0042	0.0030	100	100	37	45	41	100
Warooka~	<0.0001	<0.0001	<0.0001	100	100	338	338	338	0.0
Wilmington	0.0003	0.0018	0.0008	100	100	112	168	132	100
Woolpunda	0.0005	0.1179	0.0300	100	75.0	39	43	41	100

~ *Orroroo system decommissioned March 2019. This area is now supplied by the Morgan WTP system. Warooka system decommissioned October 2018. This area is now supplied by the Morgan / Swan Reach WTP system.*

* *Limit of reporting (LOR) values replaced with LOR/2.*

\# *Prior to calculating percentage compliance for health related chemicals, individual results are rounded to the same number of significant figures as the guideline value in the ADWG (as prescribed in the ADWG and agreed with SA Health).*

Table 5

2018-19 remote Aboriginal community source water quality

System Name	Total Dissolved Solids [mg/L]			Hardness — Total [mg/L]			pH [pH Units]		
	Min	Max	Ave*	Min	Max	Ave*	Min	Max	Ave*
Amata	510	1100	660	280	507	352	7.2	7.6	7.5
Davenport^	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gerard#	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Indulkana	1300	1500	1400	377	522	449	6.6	7.0	6.8
Kalka	520	610	560	329	358	340	7.7	7.8	7.8
Kaltjiti	1000	1300	1100	285	406	316	7.6	7.8	7.7
Kanpi	1000	1300	1200	235	548	452	7.5	7.8	7.6
Mimili	940	1400	1100	150	298	225	7.7	7.9	7.8
Murputja	830	870	850	323	329	326	7.4	7.5	7.5
Nepabunna+	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Oak Valley+	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pipalyatjara	670	740	710	378	455	411	7.6	7.8	7.7
Pt Pearce^	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pukatja	400	720	590	195	305	257	7.4	7.8	7.6
Raukkan^	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Umuwa	330	420	350	212	244	221	7.6	8.1	7.8
Watinuma	690	990	850	288	401	341	7.6	8.0	7.7
Yalata	8800	10000	9500	3310	4040	3706	6.7	6.7	6.7
Yunyarinyi	360	530	470	198	270	233	7.8	7.9	7.9

* *Limit of reporting (LOR) values replaced with LOR/2.*
^ *System supplied from another SA Water supply. Refer to data in Table 3, country source water quality. Davenport supplied from Morgan WTP, Point Pearce supplied from Morgan WTP and Swan Reach WTP, and Raukkan supplied from Tailem Bend WTP.*
\# *Refer to Loxton WTP data in Table 3, country source water quality.*
\+ *System sourced from rainwater.*
N/A = not applicable.

Table 5 — *continued*

System Name	Colour – True (456nm) [HU]			Fluoride [mg/L]			Nitrate + Nitrite as Nitrogen [mg/L]			Turbidity [NTU]		
	Min	Max	Ave*	Min	Max	Ave*	Min	Max	Ave*	Min	Max	Ave*
Amata	<1	<1	<1	0.62	1.2	1.0	1.37	7.19	3.08	<0.1	1.1	0.14
Davenport^	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gerard#	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Indulkana	<1	<1	<1	0.41	0.60	0.52	6.86	9.43	7.93	<0.1	0.28	0.12
Kalka	<1	<1	<1	0.74	0.99	0.86	4.59	8.15	5.79	0.17	0.22	0.20
Kaltjiti	<1	1	<1	1.2	1.7	1.4	7.91	12.2	8.65	<0.1	14	1.4
Kanpi	<1	<1	<1	1.4	1.9	1.6	3.72	6.14	4.34	0.17	3.5	1.3
Mimili	<1	<1	<1	1.7	2.6	2.1	1.73	18.1	12.2	<0.1	2.2	0.34
Murputja	<1	<1	<1	3.0	3.3	3.2	1.39	2.32	1.86	<0.1	0.29	0.17
Nepabunna+	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Oak Valley+	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pipalyatjara	<1	<1	<1	0.30	0.73	0.60	6.47	7.45	6.84	0.13	0.16	0.14
Pt Pearce^	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pukatja	<1	<1	<1	1.0	1.9	1.4	0.526	2.27	1.13	<0.1	0.44	0.18
Raukkan^	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Umuwa	<1	1	<1	0.85	1.0	1.0	2.35	4.64	3.69	<0.1	0.22	<0.1
Watinuma	<1	<1	<1	1.1	1.4	1.2	3.09	4.52	3.81	<0.1	0.18	0.10
Yalata	<1	4	2	0.32	0.77	0.43	0.052	1.14	0.752	<0.1	250	88
Yunyarinyi	<1	<1	<1	1.6	1.6	1.6	3.38	9.03	5.75	<0.1	0.14	0.11

* *Limit of reporting (LOR) values replaced with LOR/2.*
^ *System supplied from another SA Water supply. Refer to data in Table 3, country source water quality. Davenport supplied from Morgan WTP, Point Pearce supplied from Morgan WTP and Swan Reach WTP, and Raukkan supplied from Tailem Bend WTP.*
\# *Refer to Loxton WTP data in Table 3, country source water quality.*
\+ *System sourced from rainwater.*
N/A = not applicable.

Table 6

2018-19 remote Aboriginal community drinking water distribution systems — customer tap water quality against Australian Drinking Water Guidelines

System	*E.coli* [per cfu/100mL]		Chlorine Residual — Free [mg/L]^			
	Samples	Health Compliance %#	Min	Max	Ave*	Health Compliance %#
ADWG Value		++				≤ 5
Target		99.8% Free				99.8%
Amata	4	100	N/A	N/A	N/A	-
Davenport	12	100	N/A	N/A	N/A	-
Gerard	12	100	0.1	1.2	0.7	100
Indulkana	4	100	N/A	N/A	N/A	-
Kalka	4	100	N/A	N/A	N/A	-
Kaltjiti	4	100	N/A	N/A	N/A	-
Kanpi	3	100	N/A	N/A	N/A	-
Mimili	3	100	N/A	N/A	N/A	-
Murputja	3	100	N/A	N/A	N/A	-
Nepabunna	4	100	N/A	N/A	N/A	-
Oak Valley	4	100	N/A	N/A	N/A	-
Pipalyatjara	4	100	N/A	N/A	N/A	-
Pt Pearce	12	100	N/A	N/A	N/A	-
Pukatja	3	100	N/A	N/A	N/A	-
Raukkan	12	100	N/A	N/A	N/A	-
Umuwa	3	100	N/A	N/A	N/A	-
Watinuma	4	100	N/A	N/A	N/A	-
Yalata	4	100	N/A	N/A	N/A	-
Yunyarinyi	3	100	N/A	N/A	N/A	-

^ *Chlorinated systems only. Majority of the remote Aboriginal communities use UV as the mode of primary disinfection instead of chlorine.*

++ *E. coli should not be detected in samples of drinking water. Although we aim for 100 per cent compliance, the ADWG recognise that occasional detections may occur. In accordance with the guidelines any detection is immediately investigated, and corrective action implemented as agreed with SA Health.*

* *Limit of reporting (LOR) values replaced with LOR/2.*

\# *Prior to calculating percentage compliance for health related chemicals, individual results are rounded to the same number of significant figures as the guideline value in the ADWG (as prescribed in the ADWG and agreed with SA Health).*

N/A = not applicable.

Table 6 — *continued*

System	Chlorine Residual — Total [mg/L]^				Total Dissolved Solids [mg/L]			
	Min	Max	Ave*	Health Compliance %#	Min	Max	Ave*	Aesthetic Compliance %
ADWG Value				≤ 5				≤600
Target				99.8%				
Amata	N/A	N/A	N/A	-	690	690	690	0.0
Davenport	2.3	3.6	3.0	100	210	210	210	100
Gerard	N/A	N/A	N/A	-	160	160	160	100
Indulkana	N/A	N/A	N/A	-	130	130	130	100
Kalka	N/A	N/A	N/A	-	540	540	540	100
Kaltjiti	N/A	N/A	N/A	-	530	530	530	100
Kanpi	N/A	N/A	N/A	-	1200	1200	1200	0.0
Mimili	N/A	N/A	N/A	-	N/A	N/A	N/A	-
Murputja	N/A	N/A	N/A	-	800	800	800	0.0
Nepabunna	N/A	N/A	N/A	-	180	180	180	100
Oak Valley	N/A	N/A	N/A	-	22	22	22	100
Pipalyatjara	N/A	N/A	N/A	-	690	690	690	0.0
Pt Pearce	2.0	3.2	2.8	100	190	190	190	100
Pukatja	N/A	N/A	N/A	-	430	430	430	100
Raukkan	0.1	3.3	1.5	100	250	250	250	100
Umuwa	N/A	N/A	N/A	-	370	370	370	100
Watinuma	N/A	N/A	N/A	-	740	740	740	0.0
Yalata	N/A	N/A	N/A	-	120	120	120	100
Yunyarinyi	N/A	N/A	N/A	-	150	150	150	100

^ *Chloraminated systems only. Majority of the remote Aboriginal communities use UV as the mode of primary disinfection.*
* *Limit of reporting (LOR) values replaced with LOR/2.*
\# *Prior to calculating percentage compliance for health related chemicals, individual results are rounded to the same number of significant figures as the guideline value in the ADWG (as prescribed in the ADWG and agreed with SA Health).*
N/A = not applicable.

Table 6 — *continued*

System	Colour – True (456nm) [HU]				Turbidity [NTU]			
	Min	Max	Ave*	Aesthetic Compliance %	Min	Max	Ave*	Aesthetic Compliance %
ADWG Value				≤ 15				≤ 5
Target								
Amata	<1	<1	<1	100	0.14	0.14	0.14	100
Davenport^	N/A	N/A	N/A	-	<0.1	2.1	0.57	100
Gerard	3	3	3	100	0.15	1.0	0.37	100
Indulkana	<1	<1	<1	100	0.33	0.33	0.33	100
Kalka	<1	<1	<1	100	0.11	0.11	0.11	100
Kaltjiti	<1	<1	<1	100	<0.1	<0.1	<0.1	100
Kanpi	<1	<1	<1	100	<0.1	<0.1	<0.1	100
Mimili	N/A	N/A	N/A	-	N/A	N/A	N/A	-
Murputja	<1	<1	<1	100	<0.1	<0.1	<0.1	100
Nepabunna	<1	<1	<1	100	10	10	10	0.0
Oak Valley	<1	<1	<1	100	0.31	0.31	0.31	100
Pipalyatjara	<1	<1	<1	100	0.12	0.12	0.12	100
Pt Pearce^	N/A	N/A	N/A	-	<0.1	0.16	<0.1	100
Pukatja	<1	<1	<1	100	<0.1	<0.1	<0.1	100
Raukkan^	N/A	N/A	N/A	-	<0.1	0.26	0.14	100
Umuwa	<1	<1	<1	100	<0.1	<0.1	<0.1	100
Watinuma	<1	<1	<1	-100	0.13	0.13	0.13	100
Yalata	<1	<1	<1	100	0.21	0.21	0.21	100
Yunyarinyi	<1	<1	<1	100	0.12	0.12	0.12	100

* *Limit of reporting (LOR) values replaced with LOR/2.*
^ *System supplied from another SA Water supply. Refer to data in Table 4. Davenport supplied from Morgan WTP, Pt Pearce supplied from Morgan / Swan Reach WTP and Raukkan supplied from Tailem Bend WTP*
N/A = not applicable.

Table 6 — *continued*

System	pH [pH Units]				Trihalomethanes — Total [µg/L]^			
	Min	Max	Ave*	Aesthetic Compliance %	Min	Max	Ave*	Health Compliance %#
ADWG Value				**6.5-8.5**				**≤ 250**
Target								**99.8%**
Amata	7.9	7.9	7.9	100	N/A	N/A	N/A	-
Davenport	8.7	9.2	8.9	0.0	N/A	N/A	N/A	-
Gerard	7.4	7.8	7.6	100	86	132	107	100
Indulkana	7.7	7.7	7.7	100	N/A	N/A	N/A	-
Kalka	7.8	7.8	7.8	100	N/A	N/A	N/A	-
Kaltjiti	7.8	7.8	7.8	100	N/A	N/A	N/A	-
Kanpi	7.8	7.8	7.8	100	N/A	N/A	N/A	-
Mimili	N/A	N/A	N/A	-	N/A	N/A	N/A	-
Murputja	7.7	7.7	7.7	100	N/A	N/A	N/A	-
Nepabunna	7.8	7.8	7.8	100	N/A	N/A	N/A	-
Oak Valley	6.5	6.5	6.5	100	N/A	N/A	N/A	-
Pipalyatjara	7.8	7.8	7.8	100	N/A	N/A	N/A	-
Pt Pearce	8.8	9.3	9.1	0.0	N/A	N/A	N/A	-
Pukatja	8.0	8.0	8.0	100	N/A	N/A	N/A	-
Raukkan	7.7	8.8	8.2	66.7	N/A	N/A	N/A	-
Umuwa	8.0	8.0	8.0	100	N/A	N/A	N/A	-
Watinuma	8.1	8.1	8.1	100	N/A	N/A	N/A	-
Yalata	7.5	7.5	7.5	100	N/A	N/A	N/A	-
Yunyarinyi	8.1	8.1	8.1	100	N/A	N/A	N/A	-

* *Limit of reporting (LOR) values replaced with LOR/2.*
^ *Chlorinated systems only.*
\# *Prior to calculating percentage compliance for health related chemicals, individual results are rounded to the same number of significant figures as the guideline value in the ADWG (as prescribed in the ADWG and agreed with SA Health).*
N/A = not applicable.

Table 6 — *continued*

System	Fluoride [mg/L]				Iron — Total [mg/L]			
	Min	Max	Ave*	Health Compliance %#	Min	Max	Ave*	Aesthetic Compliance %
ADWG Value				**≤ 1.5**				**≤ 0.3**
Target				**99.8%**				
Amata	0.94	0.94	0.94	100	0.0294	0.0294	0.0294	100
Davenport^	N/A	N/A	N/A	-	N/A	N/A	N/A	-
Gerard	<0.1	<0.1	<0.1	100	0.2430	0.2430	0.2430	100
Indulkana	<0.1	<0.1	<0.1	100	0.0007	0.0007	0.0007	100
Kalka	0.91	0.91	0.91	100	<0.0005	<0.0005	<0.0005	100
Kaltjiti	0.53	0.66	0.58	100	<0.0005	<0.0005	<0.0005	100
Kanpi	1.5	1.6	1.6	50.0	0.0257	0.0257	0.0257	100
Mimili	<0.1	1.3	0.71	100	N/A	N/A	N/A	-
Murputja	3.0	3.1	3.1	0.0	<0.0005	<0.0005	<0.0005	100
Nepabunna	<0.1	<0.1	<0.1	100	0.3326	0.3326	0.3326	0.0
Oak Valley	<0.1	<0.1	<0.1	100	0.0012	0.0012	0.0012	100
Pipalyatjara	0.65	0.65	0.65	100	0.0168	0.0168	0.0168	100
Pt Pearce^	N/A	N/A	N/A	-	N/A	N/A	N/A	-
Pukatja	1.0	1.1	1.1	100	0.0036	0.0036	0.0036	100
Raukkan^	N/A	N/A	N/A	-	N/A	N/A	N/A	-
Umuwa	0.96	0.96	0.96	100	0.0005	0.0005	0.0005	100
Watinuma	1.1	1.3	1.2	100	<0.0005	<0.0005	<0.0005	100
Yalata	<0.1	<0.1	<0.1	100	0.0022	0.0022	0.0022	100
Yunyarinyi	0.37	0.44	0.41	100	0.0079	0.0079	0.0079	100

* *Limit of reporting (LOR) values replaced with LOR/2.*

\# *Although we aim for 100 per cent compliance, the ADWG recognise that occasional detections may occur. In accordance with the guidelines any detection is immediately investigated, and corrective action implemented as agreed with SA Health.*

\# *Prior to calculating percentage compliance for health related chemicals, individual results are rounded to the same number of significant figures as the guideline value in the ADWG (as prescribed in the ADWG and agreed with SA Health).*

^ *System supplied from another SA Water supply. Refer to data in Table 4. Davenport supplied from Morgan WTP, Pt Pearce supplied from Morgan / Swan Reach WTP and Raukkan supplied from Tailem Bend WTP*

N/A = not applicable.

Table 6 — *continued*

System	Manganese — Total [mg/L]					Hardness — Total [mg/L]			
	Min	Max	Ave*	Health Compliance %#	Aesthetic Compliance %	Min	Max	Ave*	Aesthetic Compliance %
ADWG Value				≤ 0.5	≤ 0.1				≤ 200
Target				99.8%					
Amata	0.0008	0.0008	0.0008	100	100	355	355	355	0.0
Davenport^	N/A	N/A	N/A	-	-	N/A	N/A	N/A	-
Gerard	0.0026	0.0026	0.0026	100	100	38	38	38	100
Indulkana	0.0003	0.0003	0.0003	100	100	94	94	94	100
Kalka	<0.0001	<0.0001	<0.0001	100	100	333	333	333	0.0
Kaltjiti	<0.0001	<0.0001	<0.0001	100	100	135	135	135	100
Kanpi	0.0007	0.0007	0.0007	100	100	466	466	466	0.0
Mimili	N/A	N/A	N/A	-	-	N/A	N/A	N/A	-
Murputja	<0.0001	<0.0001	<0.0001	100	100	302	302	302	0.0
Nepabunna	0.0018	0.0018	0.0018	100	100	5	5	5	100
Oak Valley	0.0012	0.0012	0.0012	100	100	5	5	5	100
Pipalyatjara	0.0002	0.0002	0.0002	100	100	394	394	394	0.0
Pt Pearce^	N/A	N/A	N/A	-	-	N/A	N/A	N/A	-
Pukatja	<0.0001	<0.0001	<0.0001	100	100	210	210	210	0.0
Raukkan^	N/A	N/A	N/A	-	-	N/A	N/A	N/A	-
Umuwa	<0.0001	<0.0001	<0.0001	100	100	232	232	232	0.0
Watinuma	<0.0001	<0.0001	<0.0001	100	100	406	406	406	0.0
Yalata	0.0020	0.0020	0.0020	100	100	79	79	79	100
Yunyarinyi	<0.0001	<0.0001	<0.0001	100	100	75	75	75	100

* *Limit of reporting (LOR) values replaced with LOR/2.*

\# *Prior to calculating percentage compliance for health related chemicals, individual results are rounded to the same number of significant figures as the guideline value in the ADWG (as prescribed in the ADWG and agreed with SA Health).*

^ *System supplied from another SA Water supply. Refer to data in Table 4. Davenport supplied from Morgan WTP, Pt Pearce supplied from Morgan / Swan Reach WTP and Raukkan supplied from Tailem Bend WTP*

N/A = not applicable.


SA Water