



# ANALYTICAL AND SAMPLING SERVICES



**June 2025**

**Call us on 1300 653 366**  
**[awqc.com.au](http://awqc.com.au)**



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## The Australian Water Quality Centre

The Australian Water Quality Centre (AWQC) is South Australia's leading analytical laboratory, known for its reliability and expertise. We specialise in serving the analytical needs of the water and wastewater industries, providing comprehensive solutions from field sampling and testing to analytical reporting.

As an independent business unit of SA Water since 1933, we deliver a complete suite of NATA-accredited services, including:

- sampling and field testing
- microbiology
- molecular
- biology
- general chemistry
- inorganic chemistry
- organic chemistry.

Our broad capabilities enable us to support a variety of industries, including water and wastewater service providers, utilities, councils, manufacturing, food and beverage, health, environmental, mining, small businesses, and residential customers.

Our team of local water experts conducts tests on:

- drinking water
- effluent
- ground water
- process water
- raw sewage
- recreational water
- saline water
- sludge
- tradewaste
- wastewater
- solids
- surface water.

Our comprehensive services include:

- NATA accredited field sampling and testing
- NATA accredited water quality testing
  - sample and monitoring plan design
  - data analysis reporting
  - analytical quality control programs
  - AS/NZS 4020 testing of products that come into contact with drinking water.

We are committed to delivering high-quality, reliable analytical services to cater to the diverse needs of our customers.

### Quality services assured

At AWQC, quality is our priority. We are committed to continuous improvement and maintain a strong focus on excellence in safety, service, technology, and sustainability.

Our Business Quality Management System is ISO9001 certified, and our laboratories are NATA accredited for chemical, biological, DNA, and radiological sampling and testing. Additionally, our testing and instrument calibration services are certified to ISO/IEC 17025.

We ensure quality outcomes for our customers by simplifying service use, driving innovation, adopting new technologies, seeking efficiencies, and optimizing operations.



## General Information

### Conditions of service

By submitting samples to our laboratory, you accept the terms and conditions and agree to pay for any goods or services provided by AWQC. The terms and conditions are available on our website ([www.awqc.com.au](http://www.awqc.com.au)) and are included with quotations. AWQC reserves the right to update the terms and conditions at any time without notice.

### Criteria for accepting samples

Samples are accepted at the discretion of the laboratory. Customers must adhere to sample receipt hours, collection, and submission requirements.

AWQC provides bottles/containers, which must be used to ensure the integrity of the analysis.

Common reasons for sample rejection include the sample:

- was not collected in a suitable container (non-conforming bottle)
- was not delivered within the specified holding time, making the test results unrepresentative
- presents an unacceptable risk to laboratory staff, including radiological, biological, and chemical hazards
- was submitted outside of usual receipt hours.

### Exceedance values – Australian Drinking Water Guidelines

You can set exceedance values against the Australian Drinking Water Guidelines (ADWG) to automatically receive email or SMS notifications for any exceedance levels. Early warning alert levels, including any post-rectification testing, can be addressed swiftly to facilitate effective and efficient operational decisions.

AWQC's Laboratory Information Management System (LIMS) generates email and SMS notifications within 15 minutes of result authorization. Contact your Customer Service Officer to enable this service.

### **Payment**

Payment terms are strictly 21 days as per the terms and conditions. A late fee may apply if payment is not made by the due date.

Customers using a purchase order system must supply the correct purchase order number at the time of scheduling or sample submission. Failure to provide the correct purchase order number may result in additional charges for re-issuing invoices. Note: purchase orders must be a maximum of 10 characters.

Customers are understood to have accepted SA Water's finance requirements, as stated in the terms and conditions (including in quotes and CSRs), as part of the contract terms. Any departure from these terms must be agreed upon in writing with SA Water.

Business customers will receive monthly invoices for routine and scheduled work. Prepayment is required for international customers. GST does not apply to our international customers.

For invoice and account enquiries, please contact:  
**accounts@awqc.com.au**

### **Payment methods**

There are several payment options available, with full details printed on the invoice:

- BPAY (Internet and telephone)
- online (Visa/Mastercard)
- phone (Visa/Mastercard)
- mail (money order/cheque)

### **Confidentiality and quality assurance**

Confidentiality is an integral part of our quality assurance certification. Results will not be released to SA Water or any third party without written client consent.

Strict quality control procedures are applied to all analyses. This includes the frequent use of replicates to monitor precision, and standard reference materials and blanks to monitor accuracy.

### **Cancellations**

In general, you can cancel a service request without penalty or obligation until you have submitted a sample for testing. However, AWQC reserves the right to recover costs under certain circumstances, such as:

- An administration fee (\$50 + GST) if preparation or analysis has not commenced.
- The full analytical or service fee if analysis or experimentation has commenced. If preparation or analysis has started, the result will be reported in accordance with AWQC accreditation and certification.

### **Transport costs**

Transport costs may be incurred for bottle/sample provision and/or return to customers. Please discuss transport options with your customer service officer.

Consider the time required for samples to be sent in accordance with holding times.

### **Customer service feedback**

At AWQC, we are dedicated to providing excellent customer service to all our customers and partners. We value your feedback on both the services we offer and how they are delivered.

Feedback including complaints, gives us the opportunity to address concerns and continually improve our services. Compliments are also appreciated as they reinforce what we do well.

#### **When you are happy with our service:**

We can learn from positive feedback too. If you are happy with your AWQC experience, please share it with us by sending an email to **customerservice@awqc.com.au**.

#### **When you are not happy with our service:**

We will work with you to resolve the matter and learn from each experience. Here is how we will do that together:

#### **Step 1 – Talk to us:**

Please call us on 08 7424 1514 and speak with a member of our customer service team members who will work with you to resolve your issue over the phone.

#### **Step 2 – If you are still not satisfied with our service:**

If your issue hasn't been resolved and you would like to lodge a complaint, please email us at customerservice@awqc.com.au. Once we receive your email, one of our management team will contact you within 2 business days to outline the next steps, keeping you updated on the progress, explain the reasons behind any delays and provide an estimated timeframe for resolution.

We strive to respond to and resolve complaints within 10 business days. For more complex issues, we may need additional time but we will keep you informed if that's the case.

### **Quotes**

We will always provide a quote before commencing service delivery and will not start work without customer authorisation, usually confirmed via email. Quotes are valid for 30 days from the date of issue unless otherwise specified.

Customers are assigned a dedicated customer service officer who will contact them to discuss bottles, sampling, chain of custody forms, and result formats.



## Long-term quotes

Prices in quotes that span periods longer than 12 months will be subject to annual review including CPI.

## Legal samples

AWQC is equipped to manage strict protocols for sample test results that may be subject to legal proceedings. Please discuss this with a customer service officer. A 'legal sample' handling fee applies in addition to analysis costs.

## Sample preparation, submission, testing and reporting

### Sampling kit (bottles and containers)

Once you have selected the testing you require, we will provide you with a sampling kit that includes sample bottles and instructions, an esky, ice brick, and a chain of custody form. Some bottles may contain special preservatives. The cost of the sampling kit is included in the analysis fees.

Correct sample collection using the provided sampling kits is essential, as using different containers can affect the validity of scientific test results. Please follow the instructions in your kit when filling the bottle, or consult the Sample Bottle Guide on our website at [awqc.com.au](http://awqc.com.au).

### Collect and submit samples

Follow the sampling instructions and collect the sample in the provided bottles, making sure to observe the holding times for specific analyses.

Deliver the samples to our Adelaide laboratory within 24 hours, or contact your customer service officer to arrange a collection and obtain a consignment number for courier pick-up (fees apply). For biological testing such as E. coli, samples must be delivered within 24 hours of collection.

Ensure the chain of custody form is completed clearly and accurately, including the date and time of sampling, to prevent order rejection.

Place samples in the esky with the ice brick (**excluding Amoeba**) for transport. Do not freeze the samples. Keep samples clean, upright to prevent leakage, and protect them from excessive heat, cold, or physical damage. Ensure container lids are tightly secured to prevent them from coming loose during transit. Some containers may require sealing with packing tape.

Ensure paperwork packed within the transport container is sealed in a plastic bag to prevent water damage.

## Holding times and standards

Holding times are based on best practices, including legislative requirements, to ensure proper and reliable analysis. Samples should be submitted to the laboratory well within the holding times to ensure compliance. Samples that exceed the maximum holding times are typically considered unsuitable for testing.

For further clarification, please contact your customer service officer.

## Turnaround times

Our standard turnaround time for most tests is 5 working days, starting from the receipt of a complete chain of custody form and samples. Some tests may require up to 10 working days, depending on the type and complexity of the analysis.

Urgent turnaround times, such as 24 and 48 hours, will incur a surcharge. Please contact your customer service officer for more details.

Tests subcontracted to an external laboratory may take longer due to sample receipt days/times and batch availability.

## Sample receipt

Deliver samples as soon as possible to:

### AWQC sample receipt days and times:

Monday and Tuesday: 8:00am to 8:00pm

Wednesday to Friday: 8:00am to 4:30pm\*

Please take note of our sample receipt days and times when collecting and submitting samples, particularly in regard to holding times. Samples will not be accepted outside these hours except in emergencies (substantial surcharges apply).

\*Note: Legionella and Amoeba samples must be delivered by 3:30pm on Fridays. AWQC reserves the right to decline samples after this time.

### Sample analysis

Upon arrival at the laboratory, samples are registered for all requested analyses based on the accompanying paperwork. Samples are then processed in the laboratory, and customers are kept informed by the customer service officer of any irregularities with the analysis.

### Sample results report

Once all results are entered and authorised, customers will receive a NATA-endorsed report via email in PDF and Microsoft Excel CSV formats. The report will enable you to compare your results to the Australian Drinking Water Guidelines. Please note the AWQC does not provide interpretation of water quality test results.

For interpretation of the test results, please contact the Department of Health in your state. If you have any questions regarding your results, please contact your customer service officer.

### Interim reports (preliminary reports)

If you require access to some of your results before all tests are completed, you can request a NATA-endorsed interim report. An interim report will only include test results that have already been completed and reviewed.

### WaterScope

WaterScope is a secure web-based system that provides direct access to data. We can offer you access via a secure login username/password or set up automated reports at your desired frequency.

#### Benefits include:

- access to analytical results (refreshed every 15 minutes)
- analysis history in one place
- design and download analytical reports
- auto-generate reports as frequently as required
- tools for data management, including exporting to Excel
- multiple users and access control.

### Custom reports are ideal when you:

- have more than 10 sample points
- require up-to-date data about your analysis results.

### Contact information

**Phone:** 1300 653 366 or (08) 7424 1514

**Email:** [customerservice@awqc.com.au](mailto:customerservice@awqc.com.au)

**Web:** [www.awqc.com.au](http://www.awqc.com.au)

The team is available from Monday to Friday between 8:00am to 5:00pm (South Australian time).

### Courier delivery address:

Enter via Angas Street loading dock  
250 Victoria Square/Tarntanyangga  
Adelaide SA 5000

### Hours of operation

8:00am to 5:00pm Monday to Friday (excluding public holidays)

Different hours apply for receiving samples – refer to the sample receipt hours table.

# Water

## Microbiology

Test parameter	AWQC analysis code	LoR	Analysis method	Reference method
Campylobacter - Enrichment - Presence/Absence - /1Litre	CAMP_1L	<4 MPN/L	T0088-01	AS/NZS 4276.19:2001
Campylobacter - Enrichment - Presence/Absence - /1Litre *COMPLEX	CAMP_1L_X	<4 MPN/L	T0088-01	AS/NZS 4276.19:2001
Colony Count at 20°C by pour plate – Aerobic	CC_20_PP	1 CFU/mL	T0083-01	AS/NZS 4276.3.1.2007
Colony Count at 20°C by pour plate – Aerobic - *COMPLEX	CC_20_PP_X	1 CFU/mL	T0083-01	AS/NZS 4276.3.1.2007
Colony Count at 22°C by pour plate – Aerobic	CC_22_PP	1 CFU/mL	T0083-22	AS/NZS 4276.3.1.2007
Colony Count at 22°C by pour plate – Aerobic - *COMPLEX	CC_22_PP_X	1 CFU/mL	T0083-22	AS/NZS 4276.3.1.2007
Colony Count at 25°C by spread plate - Aerobic (includes marine waters)	CC_25_SP	1 CFU/mL	T0083-25	AP9215C
Colony Count at 25°C by spread plate - Aerobic (includes marine waters) *COMPLEX	CC_25_SP_X	1 CFU/mL	T0083-25	AP9215C
Colony Count at 35°C by pour plate - Aerobic (includes marine waters)	CC_35_PP	1 CFU/mL	T0084-11	AS/NZS 4276.3.1.2007
Colony Count at 35°C by pour plate - Aerobic - *COMPLEX (includes marine waters)	CC_35_PP_X	1 CFU/mL	T0084-11	AS/NZS 4276.3.1.2007
Colony Count at 37°C by pour plate - Aerobic	CC_37_PP	1 CFU/mL	T0084-37	AS/NZS 4276.3.1.2007
Colony Count at 37°C by pour plate - Aerobic - *COMPLEX	CC_37_PP_X	1 CFU/mL	T0084-37	AS/NZS 4276.3.1.2007
Spores of Sulphite-Reducing Clostridia by membrane filtration - includes Clostridium perfringens	CLOST_MF	1 CFU/100mL	T9376-01	AS/NZS 4276.17.1:2016
Sulphite-Reducing Clostridia by membrane filtration - includes Clostridium perfringens - *COMPLEX	CLOST_MF_X	1 CFU/100mL	T9376-01	AS/NZS 4276.17.1:2016
Coliforms by MPN by defined substrate technology	COLIF_DST	<2 MPN/100mL	T0080-07	AS 4276.21-2019
Coliforms - Faecal Coliforms and E. coli by multiple tube dilution	COLIF_MPN	1 MPN/100mL	T0080-02	AS/NZS 4276.6:2007
Coliforms by MPN by defined substrate technology - *COMPLEX	COLIFDST_X	<2 MPN/100mL	T0080-07	AS 4276.21-2019
Coliforms by chromogenic membrane filtration**	COLS_MI	1 CFU/100mL	TM-028	USEPA Method 1604/IH
E. coli by MPN by defined substrate technology	ECOL_DST	<2 MPN/100mL	T0081-07	AS 4276.21-2019
E. coli by MPN by defined substrate technology - *COMPLEX	ECOL_DST_X	<2 MPN/100mL	T0081-07	AS 4276.21-2019
Thermotolerant Coliforms and E. coli by membrane filtration	ECOLI_MF	1 CFU/100mL	T0081-01	USEPA Method 1604/IH
Thermotolerant Coliforms and E. coli by membrane filtration - *COMPLEX	ECOLI_MF_X	1 CFU/100mL	T0081-01	USEPA Method 1604/IH



Test parameter	AWQC analysis code	LoR	Analysis method	Reference method
E. coli by chromogenic membrane filtration**	ECOLI_MI	1 CFU/100mL	TM-028	USEPA Method 1604/IH
Faecal Coliforms and E. coli by multiple tube dilution	ECOLI_MPN	1 MPN/100mL	T0076-02	AS/NZS 4276.6:2007
Enterococcus by membrane filtration and defined substrate technology	ENTER_DST	1 CFU/100mL	T0482-10	AS/NZS 4276.9:2007 Adcock 2001
Enterococcus and Faecal Streptococci by membrane filtration	ENTER_MF	1 CFU/100mL	T0082-01	AS/NZS 4276.9:2007 Adcock 2001
Enterococcus by membrane filtration and defined substrate technology - *COMPLEX	ENTERDST_X	1 CFU/100mL	T0482-10	AS/NZS 4276.9:2007 Adcock 2001
Enterococcus and Faecal Streptococci by membrane filtration - *COMPLEX	ENTERMF_X	1 CFU/100mL	T0082-01	AS/NZS 4276.9:2007 Adcock 2001
Filamentous Bacteria Phase Microscopy	FIL_PHASE	Reportable ID text result	TM-054	AWQC In-house method
F-RNA-PHAGE Bacteriophage culture and enumeration	FRNA_PHAGE	1 PFU/10mL	TM-014	USEPA Method 1601/IH
Fungi and yeasts by membrane filtration / 100mL	FUNGI_MF	1 CFU P/100mL	T0094-01	APHA 9610D
Fungi and yeasts by membrane filtration / 100mL - *COMPLEX	FUNGI_MF_X	1 CFU P/100mL	T0094-01	APHA 9610D
Microscopic Examination of Iron Precipitating Bacteria by membrane filtration (Recommend to be carried out in conjunction with IRON_SP)	IRON_MF	NA	T0460-05	APHA 9240D
Iron Precipitating Bacteria at 25°C by spread plate (Recommend to be carried out with Microscopic Examination analysis)	IRON_SP	<10 P/mL	T0460-01	APHA 9240D
Iron Precipitating Bacteria at 25°C by spread plate - *COMPLEX				
(Recommend to be carried out with Microscopic Examination analysis)	IRON_SP_X	<10 P/mL	T0460-01	APHA 9240E
Legionella spp. - /mL Includes L. pneumophila serogroup 1 and L. pneumophila serogroup 2-14 (Hot Water tap - NO FLUSHING REQUIRED)	LEG_HOT	<10 P/mL	T0075-08	AS 3896:2017
Legionella spp. - /mL Includes L. pneumophila serogroup 1 and L. pneumophila serogroup 2-14	LEG_SPEC	<10 P/mL	T0075-08	AS 3896:2017
Microscopic Examination	MICRO_EXAM	NA	T0099-01	AWQC In-house method
Biochemical Profile - Identification of Coliforms by API	MICRO_IDS	NA	T9373	AWQC In-house method
Bacteriophage - Somatic by double layer plate technique	PHAGE_SOM	1 PFU/10mL	T0485-01	APHA 9224B
Bacteriophage - Somatic by double layer plate technique - *COMPLEX	PHAGESOM_X	1 PFU/10mL	T485-01	Grabow1998
Pseudomonas aeruginosa by membrane filtration/100mL	PSAER_MPAC	1 CFU/100mL	T0090-01	APHA 9213E
Pseudomonas (fluorescent) speciation - P. aeruginosa, P. putida and P. fluorescens by membrane filtration	PSEUDO_F	1 CFU/100mL	T0089-01	AS 4276.11:1995

Test parameter	AWQC analysis code	LoR	Analysis method	Reference method
Pseudomonas (non-fluorescent) without speciation by membrane filtration	PSEUDO_NF	1 CFU/100mL	T0089-01	AS 4276.11:1996
Salmonella spp. by enrichment	SALM_1L	Presence/ Absence (/L)	T0085-03	AS 4276.14:2014
Sulphate Reducing Bacteria by multiple tube dilution	SRB_MPN	<2 MPN/100mL	T0087-01	APHA 9240E - In house method
Amoeba - Quantitative Mesophilic	AMOE_MESO	<1/L	TPZ-001	AWQC In-house method
Amoeba - Qualitative	AMOE_QUAL	NA	TPZ-001	AWQC In-house method
Amoeba - Quantitative	AMOE_QUANT	<1/L	TPZ-001	AWQC In-house method
Cytotoxic activity of water extract	CYTOX	NA	TM-001	AS/NZS 4020
Enteric Protozoa (1L)	ENTPROT_1	<1/10 L	TPZ-011	USEPA 1623 Vesey et al 1993
Enteric Protozoa (10L)	ENTPROT_10	<1/10 L	TPZ-011	USEPA 1623 Vesey et al 1993
Enteric Protozoa (20L)	ENTPROT_20	<1/10 L	TPZ-011	USEPA 1623 Vesey et al 1993
Enteric Protozoa (50L)	ENTPROT_50	<1/10 L	TPZ-011	USEPA 1623 Vesey et al 1993
Enteric Protozoa (100L)	ENTPROT100	<1/10 L	TPZ-011	USEPA 1623 Vesey et al 1993
Detection and Enumeration of Helminth Ova from wastewater	OVA_L	<1 OVA/L	TMZ-M30	AWQC In-house method

**Note:** \* COMPLEX - dilution required for non-potable water samples  
 \*\* Chromogenic membrane filtration technique for clean matrices (i.e. Drinking Water)

## Specialist Microbiology

Test parameter	AWQC analysis code	LoR	Analysis method	Reference method
Cyanobacteria and toxin producing genes by CyanoDTec	CYANO_TOX	NA	TM493-06	AWQC In-house method
Detection of saxitoxin toxin producing gene SxtA in Dinoflagellates by DinoDTec	DINO_TOX	NA	TM493-11	AWQC In-house method
DNA – Diversity Profiling DNA Suite	DNA_SUITE	NA	WI-357_WI-358	AWQC In-house method
bactDNA – Bacterial Diversity Profiling DNA	DNAB	NA	WI-357	AWQC In-house method
vDNA – Vertebrate Diversity Profiling DNA	DNAV	NA	WI-358	AWQC In-house method
E. coli Capsule by molecular analysis	EC_CAPSULE	NA	TMZ-M38	AWQC In-house method
E. coli Phylogrouping by PCR method	EC_GROUP	NA	TMZ-M37	AWQC In-house method
E. coli Whole Genome Sequencing	EC_WGS	NA	WI-009	AWQC In-house method

Test parameter	AWQC analysis code	LoR	Analysis method	Reference method
Faecal Source Tracking - Human	FST_HUMAN	NA	TMZ-M29	AWQC In-house method
Faecal Source Tracking - Human and Bovine	FST_HUMBOV	NA	TMZ-M29	AWQC In-house method
Cryptosporidium and Giardia speciation via FISH - customer provided slide	COMB_F_SLD	NA	TPZ-011	USEPA 1623 Vesey et al 1993
Cryptosporidium speciation via FISH - customer provided slide	CRYP_F_SLD	NA	TPZ-011	USEPA 1623 Vesey et al 1993
Cryptosporidium Genotyping	CRYPT_GENO	NA	TPZ-018	AWQC In-house method
Infectivity Preparation for Enteric Protozoa	INFEC_PREP	NA	TPZ-011	AWQC In-house method
Cryptosporidium Infectivity Assay (a) Presumptive	CRYPT_INF1	<1/10 L	T-003	AWQC In-house method
Cryptosporidium Infectivity (b) Foci Assay Identification	CRYPT_INF2	0	T-003	AWQC In-house method
Cryptosporidium Infectivity (c) Assay Speciation	CRYPT_INF3	NA	T-003	AWQC In-house method
Giardia speciation via FISH - customer provided slide	GIAR_F_SLD	NA	TPZ-011	USEPA 1623 Vesey et al 1993
Naegleria - Speciation	NAEGLERIA	NA	TPZ-001	AWQC In-house method
Cryptosporidium Speciation of Enteric Protozoa via FISH***	CRYPT_SPEC	NA	TPZ-001	AWQC In-house method
Giardia Speciation of Enteric Protozoa via FISH***	GIARD_SPEC	NA	TPZ-001	AWQC In-house method

**Note:** DNA extraction charges may apply to specialist microbiology services

\*\*\* Conducted in conjunction with ENTPROT analysis

FISH - Fluorescence in situ hybridisation

## Algal

Test parameter	AWQC analysis code	LoR	Analysis method	Reference method
Algal Biovolume (for Periphyton) - Derived from cell volumes	ALG_BVL_T2	0.01 mm <sup>3</sup> /L	T0393	Hötzel & Croome (1999)
Algal Biovolume - Derived from cell volumes	ALG_BVOL_T	0.01 mm <sup>3</sup> /L	T0393	Hötzel & Croome (1999)
Algal Enumeration - Partial - Direct method	ALG_PART_D	1 cell/mL	T0393	APHA Standard Methods (10200 C, E, F, I; APHA 2005) & Hötzel & Croome (1998, 1999)

Test parameter	AWQC analysis code	LoR	Analysis method	Reference method
Algal Enumeration - Partial – Sedimented method	ALG_PART_S	1 cell/mL	T0393	APHA Standard Methods (10200 C, E, F, I; APHA 2005) & Hötzel & Croome (1998, 1999)
Algal Enumeration - Periphyton – Direct method	ALG_PERI_D	1 cell/mL	T0393	APHA Standard Methods (10200 C, E, F, I; APHA 2005) & Hötzel & Croome (1998, 1999)
Algal Scan & ID – Direct method	ALG_SCAN_D	“Very Low” relative semi-quantitative estimate of algal abundance (1-10 cells/mL)	T0393	APHA Standard Methods (10200 C, E, F, I; APHA 2005) & Hötzel & Croome (1998, 1999)
Algal Scan & ID – Sedimented method	ALG_SCAN_S	“Very Low” relative semi-quantitative estimate of algal abundance (1-10 cells/mL)	T0393	APHA Standard Methods (10200 C, E, F, I; APHA 2005) & Hötzel & Croome (1998, 1999)
Algal Enumeration - Total – Direct method	ALG_TOT_D	1 cell/mL	T0393	APHA Standard Methods (10200 C, E, F, I; APHA 2005) & Hötzel & Croome (1998, 1999)
Algal Enumeration - Total – Sedimented method	ALG_TOT_S	1 cell/mL	T0393	APHA Standard Methods (10200 C, E, F, I; APHA 2005) & Hötzel & Croome (1998, 1999)
Algal cell viability from chlorophyll auto-fluorescence (reported as a % of total cells) - Direct measurement	ALG_VIA_D	0%	T0393	AWQC In-house method
Chlorophyll - 96% ethanol extraction - Field Filtered	CHL_95ET2	0.1 µg/L	T0380-02	Wintermans & de Mots (1965)
Chlorophyll - 96% ethanol extraction	CHL_95ETH	0.1 µg/L	T0380-02	Wintermans & de Mots (1965)
Chlorophyll a & Phaeophytin a - 96% ethanol extraction - Field Filtered	CHLPHA95E2	0.1 µg/L	T0380-02	ISO 10260 (1992)
Chlorophyll a & Phaeophytin a - 96% ethanol extraction	CHLPHA95ET	0.1 µg/L	T0380-02	ISO 10260 (1992)
Blue Green Algae (cyanobacteria) - Total – Direct method	CYANO_D	1 cell/mL	T0393	APHA Standard Methods (10200 C, E, F, I; APHA 2005) & Hötzel & Croome (1998, 1999)

Test parameter	AWQC analysis code	LoR	Analysis method	Reference method
Blue Green Algae (cyanobacteria) - Total – Sedimented method	CYANO_S	1 cell/mL	T0393	APHA Standard Methods (10200 C, E, F, I; APHA 2005) & Hötzel & Croome (1998, 1999)
Hot and Cold Odour Testing	ODOUR	NA	T0350-01	APHA-AWWA-WEF

## Organic Chemistry

Test parameter	AWQC analysis code	LoR	Analysis method	Reference method
Acidic Herbicides (Low level) by LCMS	AHERB_3	0.05 - 0.5 µg/L	T0803-03	AWQC In-house method
Determination of Anatoxin-a by LC/MS/MS	ANA_WAT_2	0.1 µg/L	T1160-01	AWQC In-house method
BTEX by Purge & Trap GCMS	BTEX_WAT_1	1-3 µg/L	TMZ-M36	USEPA Method 524.2
Chloroacetic acids by GC/ECD	CLACETAC_1	1-3 µg/L	TMS-005	USEPA Method 552
Cylindrospermopsin by LC/MS/MS	CYL_WAT_2	0.1 µg/L	T1160-01	AWQC In-house method
DBP Method 551 Analytes by GC/ECD	DBP_551_1	1.0 µg/L	TMS-003	USEPA Method 551
Dissolved Organic Carbon - OI Analytical (Low Level)	DOC_1	0.3 mg/L	T0158-07	SM5310C
Dissolved Organic Carbon - Shimadzu VCSH (High Level)	DOC_2	1.0 mg/L	T0158-09	SM5310B
GC/MS Scan by Purge & Trap	GCMSSCAN_4	NA	TMZ-M36	AWQC In-house method
GC/MS scan - Dichloromethane	GCMSSCAN_5	NA	TMZ-M35	AWQC In-house method
Glyphosate by HPLC	GLY_WAT_1	5 µg/L	T0801-03	AWQC In-house method
Haloacetic Acids by GC/ECD	HAA_1	1-9 µg/L	TMS-005	USEPA Method 552
Haloacetic Acids – Extended list of components by GC/ECD	HAA_2	1-11 µg/L	TMS-005	USEPA Method 552
Haloacetic Acids Formation Potential by GC/ECD	HAAFP_1	1-9 µg/L	TMS-006	AWQC In-house method
Haloacetic Acids Formation Potential - Extended list of components by GC/ECD	HAAFP_2	1-11 µg/L	TMS-007	AWQC In-house method
Haloxypop by LCMS	HALOXY_1	0.05 µg/L	T0803-03	AWQC In-house method
Microcystins by LCMS	MCYS_WAT_1	NA	T1130-01	AWQC In-house method
Screening Method for Microcystin in Water by LC/MS/MS	MCYS_WAT_2	0.1-0.5 µg/L	TM003	

Test parameter	AWQC analysis code	LoR	Analysis method	Reference method
NDMA by GCMS-QQQ	NDMA_2	4 ng/L	TMZ-M07	USEPA Method 521
Nodularin Algal Toxin by LCMS	NOD_WAT	NA	T1130-01	AWQC In-house method
Determination of Nodularin by LC/MS/MS	NOD_WAT_2	0.1 µg/L	TM003	AWQC In-house method
Organophosphorus and Triazine Pesticides by GCNPD	OPPEST_WAT	0.3-0.5 µg/L	T0800-01	USEPA Method 507
PSP Algal Toxins by HPLC	PSP_WATER	0.5 µg/L	T1150-01	AWQC In-house method
Total Carbon - Shimadzu VCSH (High Level)	TC_2	1 mg/L	T0158-09	SM5310B
2, 4, 6-Trichloroanisole - SPME GC/MS	TCA_2	0.2 ng/L	TMS-002	SM6040B
Trihalomethanes by GC/ECD	THM_1	1-4 µg/L	T0050-01	AWQC In-house method
Trihalomethanes Formation Potential by GCECD	THM_FPOT_1	1-4 µg/L	T0060-01	AWQC In-house method
Total Organic Carbon - OI Analytical (Low Level)	TOC_1	0.3 mg/L	T0158-07	SM5310C
Total Organic Carbon - Shimadzu VCSH (High Level)	TOC_2	1 mg/L	T0158-09	SM5310B
Total Petroleum Hydrocarbons	TPH_WAT_1	10-80 µg/L	T0990-01	AWQC In-house method
Total Recoverable Hydrocarbons & Total Petroleum Hydrocarbons	TRH_TPH_W2	10-80 µg/L	T0990-01	AWQC In-house method
Total Recoverable Hydrocarbons	TRH_WAT_3	10-80 µg/L	T0990-01	AWQC In-house method
Volatile Fatty Acids by GC-FID	V_F_ACIDS2	5 mg/L	TMZ-M17	AWQC In-house method
Volatile Chlorinated Hydrocarbons - Purge & Trap by GCMS	VCH_WAT_1	<1 µg/L	TMZ-M36	USEPA Method 524.2
Volatile Organic Compounds - Purge & Trap by GCMS - Extended list of components	VOCGCMSPT3	0.3-4 µg/L	TMZ-M36	USEPA Method 524.2

## Trace Organics and Odour

Test parameter	AWQC analysis code	LoR	Analysis method	Reference method
MIB & Geosmin by SPME/GCMS	MIBGEOS_2	2-4 ng/L	TMS-002	AWQC In-house method
MIB & Geosmin by SPME/GCMS (Filtered)	MIBGEOS_3	2-4 ng/L	TMS-002	AWQC In-house method
Odour - Hot (60°C) & Cold (20°C) using description and intensity scale	ODOUR	NA	T0350-01	APHA-AWWA-WEF



## Inorganic Chemistry - Nutrients

Test parameter	AWQC analysis code	LoR	Analysis method	Reference method
Ammonia as N - Discrete Analysis (Low Level)	AMMN_COL_1	<0.005 mg/L	T0100-01	APHA 4500-NH3 G
Ammonia as N - Discrete Analysis (High Level)	AMMN_COL_2	<0.5 mg/L	T0100-01	APHA 4500-NH3 G
Ammonia as N - Discrete Analysis (High Level) - Field filtered	AMMN_COL_4	<0.5 mg/L	T0100-01	APHA 4500-NH3 G
Ammonia as N - Colorimetric Automated Phenate (Low Level) - Field filtered	AMMN_COL_5	<0.005 mg/L	T0100-01	APHA 4500-NH3 G
Ammonia as N and Ammonium as N - Derived from Ammonia as N, pH and Temperature - AWQC Data	AMMN_COL_6	<0.005 mg/L	T0100-01	ANZECC Guidelines October 2000 section 8.3.7.2 pp156
Ammonia as N and Ammonium as N - Derived from Ammonia as N, pH and Temperature - Customer Supplied Data	AMMN_COL_7	<0.005 mg/L	T0100-01	ANZECC Guidelines October 2000 section 8.3.7.2 pp156
Bromide by Ion Chromatography	BR_TOT_1	<0.025 mg/L	T0114-01	USEPA Method 300.0
Bromide by Ion Chromatography - Lab filtered	BR_TOT_LF	<0.025 mg/L	T0114-01	USEPA Method 300.0
Chloride by Discrete Analysis	CL_1	<4.0 mg/L	T0104-02	APHA 4500-Cl- E
Dissolved Organic Phosphorus - Calculation (P - FiltP)	DOP_CALC	NA	TMZ-M06	
Fluoride - Ion Selective Electrode	F_1	<0.10 mg/L	T0105-01	APHA 4500-F- C
Filterable Reactive Phosphorus as P - Low Level	FILTP_1	<0.003 mg/L	T0108-01	APHA 4500-P G
Filterable Reactive Phosphorus as P - Low Level - Field filtered	FILTP_2	<0.003 mg/L	T0108-01	APHA 4500-P G
Filterable Reactive Phosphorus as P - High Level	FILTP_3	<0.06 mg/L	T0108-01	APHA 4500-P G
Filterable Reactive Phosphorus as P - High Level - Field filtered	FILTP_4	<0.06 mg/L	T0108-01	APHA 4500-P G
Iodide by Ion Chromatography	I_TOT_1	<0.01 mg/L	T0117-01	USEPA Method 300.0
Iodide by Ion Chromatography - Lab filtered	I_TOT_LF	<0.01 mg/L	T0117-01	USEPA Method 300.0
Ammonia - Free as N by Ion Selective Electrode	NH3_N	<0.05 mg/L	T0100-04	APHA 4500-NH3 D
Ammonia - Free as NH3 by Ion Selective Electrode	NH3_NH3	<0.06 mg/L	T0100-04	APHA 4500-NH3 D
Nitrite as N - Low Level	NO2N_1	<0.003 mg/L	T0107-01	APHA 4500-NO3-I
Nitrite as N - Low Level - Field filtered	NO2N_2	<0.003 mg/L	T0107-01	APHA 4500-NO3-I
Nitrite as N - High Level	NO2N_4	<0.06 mg/L	T0107-01	APHA 4500-NO3-I

Test parameter	AWQC analysis code	LoR	Analysis method	Reference method
Nitrite as N - High Level - Field filtered	N02N_5	<0.06 mg/L	T0107-01	APHA 4500-N03-I
Nitrate as Nitrogen - Calculation - Difference between Total NOx and Nitrite	N03N_CALC	<0.003 mg/L	TMZ-M06	APHA 4500-N03-I
Organic Nitrogen - Calculation (TKN - NH3)	ORGN_CALC_1	<0.05 mg/L	TMZ-M06	APHA 4500-N org A
Nitrate + Nitrite as N - Low Level	OXN_1	<0.003 mg/L	T0161-01	APHA 4500-N03-I
Nitrate + Nitrite as N - Low Level SFA - Field filtered	OXN_2	<0.003 mg/L	T0161-01	APHA 4500-N03-I
Nitrate + Nitrite as N - High Level	OXN_4	<0.06 mg/L	T0161-01	APHA 4500-N03-I
Nitrate + Nitrite as N - High Level - Field filtered	OXN_5	<0.06 mg/L	T0161-01	APHA 4500-N03-I
Nitrate + Nitrite as NO3 - Calculation	OXN_CALC_1	NA	T0161-01	APHA 4500-N03-I
Filterable Reactive Phosphorus as P04 - Derived from FILTP_1, FILTP_2, FILTP_3, FILTP_4 - Field filtered	P_SOL_3	NA	T0108-01	APHA 4500-P F
Total Dissolved Phosphorus	P_TOT_10	<0.005 mg/L	T0109-01	APHA 4500-P F
Phosphorus - Total as P - Low Level	P_TOT_2	<0.005 mg/L	T0109-01	APHA 4500-P F
Phosphorus - Total as P04 (Derived Calculation)	P_TOT_9	NA	T0109-01	APHA 4500-P F
Silica - Reactive	RSI02_1	<0.05 mg/L	T0111-01	APHA 4500-Si02
Soluble Kjeldahl Nitrogen - Low Level - Field filtered	SKN_SOL_1	<0.05 mg/L	T0112-01	APHA 4500-N org A
Total Kjeldahl Nitrogen - Low Level	TKNN_COL_1	<0.05 mg/L	T0112-01	APHA 4500-N org A
Total Nitrogen - Calculation	TN_CALC_1	NA	TMZ-M06	APHA 4500-N org A
Total Chlorides as NaCl - Calculation	TOTCL_CALC	<7 mg/L	T0104-02	APHA 4500-Cl- E

## Inorganic Chemistry - Waste

Test parameter	AWQC analysis code	LoR	Analysis method	Reference method
Alkalinity as Calcium Carbonate - Titration to pH 4.5	ALKTIT_1	NA	T0101-02	APHA 2320 B
Biochemical Oxygen Demand	BOD_1	<2 mg/L	T0153-01	APHA 5210 B
Biochemical Oxygen Demand - Soluble	BOD_SOL	<2 mg/L	T0153-01	APHA 5210 B

Test parameter	AWQC analysis code	LoR	Analysis method	Reference method
Biochemical Oxygen Demand Carbonaceous - Total	BODC_1	<2 mg/L	T0153-01	APHA 5210 B
Biochemical Oxygen Demand Carbonaceous - Soluble	BODC_SOL	<2 mg/L	T0153-01	APHA 5210 B
Chlorine - Titrimetric (DPD-FAS)	CHLOR_1	<0.1 mg/L	T0012-03	APHA 4500-Cl
Cyanide - Total as CN	CN_TOT_1	0.05 mg/L	T0167-03	APHA 4500-Cl- E
Chemical Oxygen Demand - Total	COD_2	20 mg/L	TMZ-M31	APHA 5220 D
Chemical Oxygen Demand - Total - Low Level	COD_3	15 mg/L	TMZ-M31	APHA 5220 D
Chemical Oxygen Demand - Readily Biodegradable Soluble	COD_RBS_2	20 mg/L	TMZ-M31	APHA 5220 D
Chemical Oxygen Demand - Readily Biodegradable Soluble - Low Level	COD_RBS_3	15 mg/L	TMZ-M31	APHA 5220 D
Chemical Oxygen Demand - Soluble	COD_SOL_2	20 mg/L	TMZ-M31	APHA 5220 D
Chemical Oxygen Demand - Soluble - Low Level	COD_SOL_3	15 mg/L	TMZ-M31	APHA 5220 D
Conductivity and Total Dissolved Solids calculated from Conductivity	COND_TDS_2	<1.0 µS/cm	T0016-01	APHA 2510 B
Dissolved Oxygen - Electrode	DO_WASTE	0 mg/L	T0014-03	APHA 4500-O G
Grease - Soxhlet Extraction	GREASE_W	<1.0 mg/L	T0165-03	APHA 5520 D
Total Dissolved Phosphorus as P - High Level	P_SOL_4	<0.1 mg/L	T0109-01	APHA 4500-P F
Phosphorus - Total as P - High Level	P_TOT_14	<0.1 mg/L	T0109-06	APHA 4500-P F
pH by Electrode	PH_PROBE_2	NA	T0010-02	APHA 4500-H B
Soluble Kjeldahl Nitrogen - High Level	SKN_SOL_3	<2 mg/L	T0112-06	APHA 4500
Suspended Solids	SS_1	<1.0 mg/L	T0160-01	APHA 4500
Suspended Solids (Triplicate Analysis)	SSX3_1	<1.0 mg/L	T0160-01	APHA 2540-D&E
Total Dissolved Solids by Evaporation (Dried at 180 C)	TDS180_1	<1.0 mg/L	T015-05	APHA 2540 C
Total Kjeldahl Nitrogen - High Level	TKNN_COL_3	<2 mg/L	T0112-06	APHA 4500-N org A
Total Nitrogen - Calculation - High Level	TN_CALC_3	<2 mg/L		APHA 4500
UV Transmittance at 254 nm - (Filtered)	UV_F_2	0.10%	T0132-01	AS 3753-1990
Transmittance at 254 nm - (Unfiltered)	UV_UF_2	0.10%	T0132-01	AS 3753-1990
UV Absorbance at 254nm - (Unfiltered)	UVABS_1	0.001 cm-1	T0120-01	AS 3753-1990
UV Absorbance at 254nm - (Filtered)	UVABS_F_1	0.001 cm-1	T0120-01	AS 3753-1990
Volatile Suspended Solids	VSS_GFC	<1 mg/L	T0160-01	APHA 2540-D&E

## Inorganic Chemistry - Metals

Test parameter	AWQC analysis code	LoR	Analysis method	Reference method
Silver - Soluble - Membrane Filtration by ICP-MS	AG_SOL_3	<0.00002 mg/L	TIC-006	EPA method 200.8
Silver - Total - Nitric Acid Digestion by ICP-MS	AG_TOT_5	<0.00002 mg/L	TIC-006	EPA method 200.8
Aluminium - Acid Soluble - Membrane Filtration by ICP-MS	AL_ASOL_2	<0.001 mg/L	TIC-006	EPA method 200.8
Aluminium - Soluble - Membrane Filtration by ICP-MS	AL_SOL_5	<0.001 mg/L	TIC-006	EPA method 200.8
Aluminium - Total by ICP-MS	AL_TOT_8	<0.001 mg/L	TIC-006	EPA method 200.8
Arsenic - Soluble by ICP-MS	AS_SOL_1	<0.00006 mg/L	TIC-006	EPA method 200.8
Arsenic - Total by ICP-MS	AS_TOT_1	<0.00006 mg/L	TIC-006	EPA method 200.8
Boron - Soluble - Membrane Filtration by ICP-MS	B_SOL_4	<0.020 mg/L	TIC-006	EPA method 200.8
Barium - Soluble by ICP-MS	BA_SOL_2	<0.0003 mg/L	TIC-006	EPA method 200.8
Barium - Total by ICP-MS	BA_TOT_3	<0.0003 mg/L	TIC-006	EPA method 200.8
Beryllium - Soluble by ICP-MS	BE_SOL_1	<0.0002 mg/L	TIC-006	EPA method 200.8
Beryllium - Total by ICP-MS	BE_TOT_2	<0.0002 mg/L	TIC-006	EPA method 200.8
Bismuth - Soluble by ICP-MS	BI_SOL_1	<0.0001 mg/L	TIC-006	EPA method 200.8
Bismuth - Total by ICP-MS	BI_TOT_1	<0.0001 mg/L	TIC-006	EPA method 200.8
Calcium - Membrane Filtration by ICP-MS	CA_SOL_4	<0.05 mg/L	TIC-006	EPA method 200.8
Calcium - Total - Acid Digestion by ICP-MS	CA_TOT_8	<0.05 mg/L	TIC-006	EPA method 200.8
Calcium Hardness as CaCO <sub>3</sub> - Calculation	CAHRD_CALC	<2.0 mg/L	TMZ-M06	APHA 2340A
Carbonate Hardness as CaCO <sub>3</sub> - Calculation from Alkalinity	CBHRD_CALC	<2.0 mg/L	T0203-01	
Cadmium - Soluble by ICP-MS	CD_SOL_3	<0.0001 mg/L	TIC-006	EPA method 200.8
Cadmium - Total by ICP-MS	CD_TOT_6	<0.0001 mg/L	TIC-006	EPA method 200.8
Cobalt - Soluble by ICP-MS	CO_SOL_1	<0.0001 mg/L	TIC-006	EPA method 200.8
Cobalt - Total by ICP-MS	CO_TOT_3	<0.0001 mg/L	TIC-006	EPA method 200.8
Chromium - Soluble by ICP-MS	CR_SOL_2	<0.0001 mg/L	TIC-006	EPA method 200.8
Chromium - Total by ICP-MS	CR_TOT_3	<0.0001 mg/L	TIC-006	EPA method 200.8
Chromium (VI) - Soluble - Derived	CR6_1	NA	TIC-006	
Copper - Soluble by ICP-MS	CU_SOL_2	<0.0001 mg/L	TIC-006	EPA method 200.8

Test parameter	AWQC analysis code	LoR	Analysis method	Reference method
Copper - Total by ICP-MS	CU_TOT_3	<0.0001 mg/L	TIC-006	EPA method 200.8
Dissolved Solids - Calculation	DSC_CALC	<6 mg/L	TMZ-M06	APHA 1030E
Iron - Soluble - Membrane Filtration by ICP-MS	FE_SOL_4	<0.0005 mg/L	TIC-006	EPA method 200.8
Iron - Total by ICP-MS	FE_TOT_9	<0.0005 mg/L	TIC-006	EPA method 200.8
Mercury - Soluble by ICP-MS	HG_SOL_2	<0.00003 mg/L	TIC-006	EPA method 200.8
Mercury - Total by ICP-MS	HG_TOT_3	<0.00003 mg/L	TIC-006	EPA method 200.8
Ion Balance - Calculation	IONB_CALC	<0.001 mEQ/L	TMZ-M06	
Potassium - Soluble - Membrane Filtration by ICP-MS	K_SOL_4	<0.05 mg/L	TIC-006	EPA method 200.8
Chromium (VI) - Soluble - Derived	CR6_1	NA	TIC-006	
Copper - Soluble by ICP-MS	CU_SOL_2	<0.0001 mg/L	TIC-006	EPA method 200.8
Copper - Total by ICP-MS	CU_TOT_3	<0.0001 mg/L	TIC-006	EPA method 200.8
Dissolved Solids - Calculation	DSC_CALC	<6 mg/L	TMZ-M06	APHA 1030E
Iron - Soluble - Membrane Filtration by ICP-MS	FE_SOL_4	<0.0005 mg/L	TIC-006	EPA method 200.8
Iron - Total by ICP-MS	FE_TOT_9	<0.0005 mg/L	TIC-006	EPA method 200.8
Mercury - Soluble by ICP-MS	HG_SOL_2	<0.00003 mg/L	TIC-006	EPA method 200.8
Mercury - Total by ICP-MS	HG_TOT_3	<0.00003 mg/L	TIC-006	EPA method 200.8
Ion Balance - Calculation	IONB_CALC	<0.001 mEQ/L	TMZ-M06	
Potassium - Soluble - Membrane Filtration by ICP-MS	K_SOL_4	<0.05 mg/L	TIC-006	EPA method 200.8
Lanthanum - Soluble - Membrane Filtration by ICP-MS	LA_SOL_2	<0.0001 mg/L	TIC-006	EPA method 200.8
Lanthanum - Total by ICP-MS	LA_TOT_3	<0.0001 mg/L	TIC-006	EPA method 200.8
Langelier Index - Calculation	LANG_CALC	NA	TMZ-M06	APHA 2330B
Lithium - Soluble by ICP-MS	LI_SOL_2	0.0002 mg/L	TIC-006	EPA method 200.8
Lithium - Total by ICP-MS	LI_TOT_2	0.0002 mg/L	TIC-006	EPA method 200.8
Larson Skold Index - Calculation	LSI_CALC	NA	TMZ-M06	
Magnesium - Soluble - Membrane Filtration by ICP-MS	MG_SOL_4	<0.05 mg/L	TIC-006	EPA method 200.8
Magnesium - Total - Acid Digestion by ICP-MS	MG_TOT_8	<0.05 mg/L	TIC-006	EPA method 200.8
Magnesium Hardness as CaCO <sub>3</sub> - Calculation	MGHRD_CALC	<2.0 mg/L	TMZ-M06	APHA 2340A
Manganese - Soluble by ICP-MS	MN_SOL_3	<0.0001 mg/L	TIC-006	EPA method 200.8

Test parameter	AWQC analysis code	LoR	Analysis method	Reference method
Manganese - Total by ICP-MS	MN_TOT_3	<0.0001 mg/L	TIC-006	EPA method 200.8
Molybdenum - Soluble by ICP-MS	MO_SOL_1	<0.0001 mg/L	TIC-006	EPA method 200.8
Molybdenum - Total by ICP-MS	MO_TOT_1	<0.0001 mg/L	TIC-006	EPA method 200.8
Sodium - Membrane Filtration by ICP-MS	NA_4	<0.1 mg/L	TIC-006	EPA method 200.8
Sodium/Total Cations Ratio - Calculation	NACAT_CALC	<1 %	TMZ-M06	
Noncarbonate Hardness as CaCO <sub>3</sub> - Calculation by Difference	NCBHD_CALC	<2.0 mg/L	T0204-01	
Noncarbonate Hardness as CaCO <sub>3</sub> - Calculation by Difference	NCBHD_CALC	<2.0 mg/L	T0204-01	
Nickel - Soluble by ICP-MS	NI_SOL_3	<0.0002 mg/L	TIC-006	EPA method 200.8
Nickel - Total by ICP-MS	NI_TOT_6	<0.0002 mg/L	TIC-006	EPA method 200.8
Phosphorus - Soluble by ICP-MS	P_SOL_2	<0.005 mg/L	TIC-006	EPA method 200.8
Phosphorus - Total by ICP-MS	P_TOT_6	<0.005 mg/L	TIC-006	EPA method 200.8
Lead - Soluble by ICP-MS	PB_SOL_3	<0.0001 mg/L	TIC-006	EPA method 200.8
Lead - Total by ICP-MS	PB_TOT_1	<0.0001 mg/L	TIC-006	EPA method 200.8
Platinum - Soluble by ICP-MS	PT_SOL_1	0.00002 mg/L	TIC-006	EPA method 200.8
Platinum - Total by ICP-MS	PT_TOT_1	0.00002 mg/L	TIC-006	EPA method 200.8
Sodium Adsorption Ratio - Calculation	SAR_CALC	NA	TMZ-M06	
Antimony - Soluble by ICP-MS	SB_SOL_2	<0.0003 mg/L	TIC-006	EPA method 200.8
Antimony - Total by ICP-MS	SB_TOT_1	<0.0003 mg/L	TIC-006	EPA method 200.8
Selenium - Soluble by ICP-MS	SE_SOL_2	0.0001 mg/L	TIC-006	EPA method 200.8
Selenium - Total by ICP-MS	SE_TOT_1	0.0001 mg/L	TIC-006	EPA method 200.8
Silica - Soluble by ICP-MS	SI02_SOL_1	0.1 mg/L	TIC-006	EPA method 200.8
Silica - Total by ICP-MS	SI02_TOT_1	0.1 mg/L	TIC-006	EPA method 200.8
Tin - Soluble by ICP-MS	SN_SOL_1	0.0004 mg/L	TIC-006	EPA method 200.8
Tin - Total by ICP-MS	SN_TOT_1	0.0004 mg/L	TIC-006	EPA method 200.8
Strontium - Soluble by ICP-MS	SR_SOL_2	0.0001 mg/L	TIC-006	EPA method 200.8



Test parameter	AWQC analysis code	LoR	Analysis method	Reference method
Strontium - Total by ICP-MS	SR_TOT_2	0.0001 mg/L	TIC-006	EPA method 200.8
Sulphur by ICP-MS (High Level)	SULPH_1	0.2 - 0.6 mg/L	TIC-006	EPA method 200.8
Sulphur by ICP-MS (Digested)	SULPH_3	0.2 - 0.6 mg/L	TIC-006	EPA method 200.8
Thorium – Soluble by ICP-MS	TH_SOL_1	0.0001 mg/L	TIC-006	EPA method 200.8
Thorium - Total by ICP-MS	TH_TOT_1	0.0001 mg/L	TIC-006	EPA method 200.8
Total Hardness as CaCO <sub>3</sub> - Calculation from Calcium and Magnesium	THRD_CALC	2.0 mg/L	TMZ-M06	APHA 2340B
Titanium - Soluble by ICP-MS	TI_SOL_1	0.0003 mg/L	TIC-006	EPA method 200.8
Titanium - Total by ICP-MS	TI_TOT_2	0.0003 mg/L	TIC-006	EPA method 200.8
Thallium - Soluble by ICP-MS	TL_SOL_1	0.0001 mg/L	TIC-006	EPA method 200.8
Thallium - Total by ICP-MS	TL_TOT_1	0.0001 mg/L	TIC-006	EPA method 200.8
Uranium - Soluble by ICP-MS	U_SOL_1	0.0001 mg/L	TIC-006	EPA method 200.8
Uranium - Total by ICP-MS	U_TOT_1	0.0001 mg/L	TIC-006	EPA method 200.8
Vanadium - Soluble by ICP-MS	V_SOL_1	0.0001 mg/L	TIC-006	EPA method 200.8
Vanadium - Total by ICPMS	V_TOT_1	0.0001 mg/L	TIC-006	EPA method 200.8
Zinc - Soluble by ICP-MS	ZN_SOL_2	0.0003 mg/L	TIC-006	EPA method 200.8
Zinc - Total by ICP-MS	ZN_TOT_4	0.0003 mg/L	TIC-006	EPA method 200.8

## Inorganic Chemistry - Physical

Test parameter	AWQC analysis code	LoR	Analysis method	Reference method
Alkalinity as Calcium Carbonate, Carbonate, Bicarbonate and Hydroxide	ALK_CALC_1	0 mg/L	T0101-01	APHA 2320 B
Alkalinity (no speciation)	ALK_CALC_2	0 mg/L	T0101-01	APHA 2320 B
Colour - True - Spectrometric @ 456nm (Filtered)	COL_F_456	1 HU	T0029-01	APHA 2120C
Colour - Apparent - Spectrometric @ 456nm (Unfiltered)	COL_U_456	1 HU	T0029-01	APHA 2120C
Conductivity and Total Dissolved Solids calculated from Conductivity	COND_TDS_1	Cond <2 µS/cm, TDS <1 mg/L	T0016-01	APHA 2510 B
Free Carbon Dioxide - Calculation	FRCO2_CALC	0 mg/L	TMZ-M06	APHA 4500-CO <sub>2</sub> D
pH by Electrode	PH_PROBE_1	NA	T0010-01	APHA 4500-H B
Turbidity - Nephelometric	TURB_NEPH	0.1 NTU	T0018-01	APHA-AWWA-WEF

## Radiological Testing

Test parameter	AWQC analysis code	LoR	Analysis method	Reference method
Gross Alpha and Beta Activity - (K-40 Corrected) (Low Level)	GALP_BETA1	NA	TM493-03	
Gross Alpha and Beta Activity - (K-40 Corrected) (High Level)	GALP_BETA2	<10 Bq/L	TM493-03	
Radon 222	RN222_4	<0.5 Bq/L	TM493-04	

## Product Testing - Water Testing

Test parameter	AWQC analysis code	LoR	Analysis method	Reference method
Ames Test - Mutagenic Activity of Water	AMES_TEST	Avail Upon Request	TM-002	AS/NZS 4020
Odour Analysis (non-Product)	ODOUR_PT1	Avail Upon Request	T0320-01	AWQC In-house method
Scaling Factor - Colour - True - Spectrometric @ 456nm (Filtered)	PT_COLSCAL	<1.0 HU	T0029-01	AS/NZS 4020
Metals Extraction - Scaling Factor Applied	PT_METSCAL	Avail Upon Request		AS/NZS 4020
Scaling Factor - Turbidity	PT_TURSCAL	<0.1 NTU	T0029-01	AS/NZS 4020
Taste AS/NZS4020	TASTE	Avail Upon Request	T0320-01	AS/NZS 4020
Taste Analysis (non-Product)	TASTE_PT1	Avail Upon Request	T0320-01	AS/NZS 4020

## Water Treatment Tests

Test parameter	AWQC analysis code	LoR	Analysis method	Reference method
Biodegradable Dissolved Organic Carbon	BDOC	<0.2 mg/L		Wat.Supply (1989) 7 41-45
Chlorine - Titrimetric (DPD-FAS)	CHLOR_2	<0.1 mg/L	T0012-03	
Chlorine Demand - Max Contact 24hrs - Titrimetric (DPD-FAS)	CL_DEM_1	Avail Upon Request	T0136-03	APHA 4500-Cl F
Chlorine Demand - Contact Time 30mins - Titrimetric (DPD-FAS)	CL_DEM_2	Avail Upon Request	T0136-03	APHA 4500-Cl F
Chlorine Demand - Contact Time 8hrs - Titrimetric (DPD-FAS)	CL_DEM_3	Avail Upon Request	T0136-03	APHA 4500-Cl F
Chlorine Demand - Contact Time 24Hrs - Titrimetric (DPD-FAS)	CL_DEM_4	Avail Upon Request	T0136-03	APHA 4500-Cl F
Colour - True - Spectrometric @ 456nm (Filtered)	COL_F456_1	<1 HU	T0029-09	Wat. Res. 1993 27(7) 1209-1218
Colour - Apparent - Spectrometric @ 456nm (Unfiltered)	COL_U456_1	<1 HU	T0029-09	Wat. Res. 1993 27(7) 1209-1218

Test parameter	AWQC analysis code	LoR	Analysis method	Reference method
Dissolved Organic Carbon - Persulphate/UV Oxidation - Conductivity Detection	DOC_3	<0.1 mg/L	T0116-09	APHA 20th Edtn.5310 C
Dissolved Organic Carbon - Persulphate/UV Oxidation Conductivity Detection	DOC_6	0.3 mg/L	T0116-09	APHA 20th Edtn.5310 C
Fractionation of DOC by Selective adsorption to an Ion Exchange Resin	DOC_FRAC_1	<0.1 mg/L	TM-004	AQUA 2004 53(2) 85-92
Optimum Coagulant Dose - Jar Test	JAR_1	<1 mg/L	T0139-01	AWQC In-house method
Optimum Coagulant Dose - Dissolved Air Flotation Jar test	JAR_DAF_1	<1 mg/L	T0139-01	AWQC In-house method
Molecular Weight Distribution by HPSEC	MWD_1	Avail Upon Request	T0130-01	AWQC In-house method
Particle Size Distribution	PSD_1	Avail Upon Request	TM-035	AS 4863.1-2000
Total Organic Carbon - Persulphate/UV Oxidation Conductivity Detection	TOC_6	0.3 mg/L	T0116-09	APHA 20th Edtn.5310 C

## Field Tests (conducted by our field service team)

Test parameter	AWQC analysis code	LoR	Analysis method	Reference method
Chlorine - Titrimetric (DPD-FAS)	CHLOR_3	<0.1 mg/L	T0012-01	APHA 4500-Cl F
Conductivity	COND_FIELD	Cond <1 µS/cm	T0012-03	
TDS <1 mg/L	TM-025	APHA 2510 B	T0136-03	APHA 4500-Cl F
Dissolved Oxygen (Electrode)	DO_FIELD	0 mg/L	TM-029	APHA 4500-O G
Dissolved Oxygen - (Electrode) including Percentage	DO_FIELD2	0 mg/L	TM-029	APHA 4500-O G
pH by pH Electrode	PH_FIELD	0%	TM-021	APHA 4500-H B
Redox Potential - Electrode Field	REDOX_FL	Avail Upon Request	TMZ-M18	Standard Test Method for Oxidation-Reduction Potential of Water
Secchi Disc Depth	SECCHI_FL	NA		AWQC In-house method
Standing Water Level	SWL	NA	WI-339	
Temperature	TEMP_FLD_1	NA	T0011-01	APHA-AWWA-WEF
Turbidity	TURB_FIELD	<0.1 NTU	T0018-01	APHA-AWWA-WEF

## Customer Tested Data

Test parameter	AWQC analysis code	LoR	Analysis method	Reference method
Dissolved Oxygen	DO_CUST	0 mg/L	-	-
Secchi Disc Depth	SECCHI_CUS	0 M	-	-
pH	PH_CUST	NA	-	-
Temperature	TEMP_CUST	NA	-	-
Turbidity - Nephelometric	TURB_CUST	<0.1 NTU	-	-
Conductivity	COND_CUST	NA	-	-
Chlorine - Titrimetric (DPD-FAS)	CHLOR_4	<0.1 mg/L	-	-

## Biosolids

### Microbiological Tests

Test parameter	AWQC analysis code	LoR	Analysis method	Reference method
Coliforms, Faecal Coliforms and E. coli - Multiple Tube Dilution per gram	COLIF_1G	<2/g	T0080-04	AS/NZS 4276.6:2007
Faecal Coliforms and E. coli - Multiple Tube Dilution per gram	ECOLI_1G	<2/g	T0081-04	AS/NZS 4276.6:2007
Salmonella spp. - Enrichment Presence/Absence per 10 grams	SALM_10G	NA	T0084-04	AS 4276.14:2014
Amoeba - Quantitative	AMOE_QNSOL	1/g dry weight	TPZ-003	AWQC In-house method
Amoeba - Quantitative Mesophilic	AMOE_M_SOL	1/g dry weight	TPZ-003	AWQC In-house method
Detection and Enumeration of Helminth Ova from wastewater	OVA_L	<1 OVA/L	TMZ-M30	AWQC In-house method

### Inorganic Chemistry - Waste

Test parameter	AWQC analysis code	LoR	Analysis method	Reference method
Alkalinity as Calcium Carbonate - Titration to pH 4.5	ALKTIT_2	0 mg/kg	T0101-02	APHA 2320 B
Alkalinity as Calcium Carbonate - Titration to pH 4.5 (% dry weight)	ALKTIT_3	NA	T0101-02	APHA 2320 B
Ammonia as N (Dry Weight)	AMMN_COL_3	<25 mg/kg	T0100-02	US EPA 300.1
Ash, Volatile Matter and Fixed Total Solids	ASH_1	<0.01 mg/kg	T0181-01	US EPA 300.1
Biochemical Oxygen Demand	BOD_D	<2 mg/kg	T0153-01	APHA 5520
Chlorine - Titrimetric	CHLOR_5	<0.01 mg/kg	T0012-03	AP4500CI
Cyanide - Total as CN	CN_TOT_2	<5 mg/kg	T0167-04	APHA 4500-CN E
Chemical Oxygen Demand	COD_D	<5 mg/kg	T0155-01	APHA 5220 B
Grease - Soxhlet Extraction	GREASE_D	<2 mg/kg	T0165-03	APHA 5520 D

Test parameter	AWQC analysis code	LoR	Analysis method	Reference method
Total Solids	TS_1	<0.01 %	T0180-01	APHA 2540-B E
pH by Electrode (Sludge)	PH_PROBE_6	NA	T0010-02	APHA 4500-H B

## Inorganic Chemistry - Metals

Test parameter	AWQC analysis code	LoR	Analysis method	Reference method
Silver - Total - Nitric Acid Digestion by ICP-MS	AG_TOT_7	<0.03 mg/kg	TIC-006	EPA method 200.8
Aluminium - Total - Nitric Acid Digestion by ICP-MS	AL_TOT_10	<1.0 mg/kg	TIC-006	EPA method 200.8
Arsenic - Total - Nitric Acid Digestion by ICP-MS	AS_TOT_4	<0.3 mg/kg	TIC-006	EPA method 200.8
Boron - Total - Nitric Acid Digestion by ICP-MS	B_TOT_3	<20 mg/kg	TIC-006	EPA method 200.8
Barium - Total - Nitric Acid Digestion by ICP-MS	BA_TOT_9	<0.5 mg/kg	TIC-006	EPA method 200.8
Beryllium - Total by ICP-MS	BE_TOT_4	<0.03 mg/kg	TIC-006	EPA method 200.8
Bismuth - Total - Nitric Acid Digestion by ICP-MS	BI_TOT_3	<0.1 mg/kg	TIC-006	EPA method 200.8
Calcium - Total - Nitric Acid Digestion by ICP-MS	CA_TOT_5	<4 mg/kg	TIC-006	EPA method 200.8
Cadmium - Total - Nitric Acid Digestion by ICP-MS	CD_TOT_13	<0.1 mg/kg	TIC-006	EPA method 200.8
Cobalt - Total - Nitric Acid Digestion by ICP-MS	CO_TOT_4	<0.1 mg/kg	TIC-006	EPA method 200.8
Chromium - Total - Nitric Acid Digestion by ICP-MS	CR_TOT_4	<0.1 mg/kg	TIC-006	EPA method 200.8
Chromium (VI) - Total - Derived from CR_TOT_4	CR6_2	NA	TMZ-M06	EPA method 200.8
Copper - Total - Nitric Acid Digestion by ICP-MS	CU_TOT_4	<0.1 mg/kg	TIC-006	EPA method 200.8
Iron - Total - Nitric Acid Digestion by ICP-MS	FE_TOT_11	<0.5 mg/kg	TIC-006	EPA method 200.8
Mercury - Total - Nitric Acid Digestion by ICP-MS	HG_TOT_5	<0.03 mg/kg	TIC-006	EPA method 200.8
Potassium - Total - Nitric Acid Digestion by ICP-MS	K_TOT_6	<4.0 mg/kg	TIC-006	EPA method 200.8
Lanthanum - Total - Nitric Acid Digestion by ICP-MS	LA_TOT_5	<0.1 mg/kg	TIC-006	EPA method 200.8
Lithium - Total - Nitric Acid Digestion by ICP-MS	LI_TOT_4	<0.3 mg/kg	TIC-006	EPA method 200.8
Magnesium - Total - Nitric Acid Digestion by ICP-MS	MG_TOT_5	<4.0 mg/kg	TIC-006	EPA method 200.8
Manganese - Total - Nitric Acid Digestion by ICP-MS	MN_TOT_4	<0.1 mg/kg	TIC-006	EPA method 200.8
Molybdenum -Total - Nitric Acid Digestion by ICP-MS	MO_TOT_2	<0.1 mg/kg	TIC-006	EPA method 200.8

Test parameter	AWQC analysis code	LoR	Analysis method	Reference method
Sodium - Total - Nitric Acid Digestion by ICP-MS	NA_TOT_6	<4.0 mg/kg	TIC-006	EPA method 200.8
Nickel - Total - Nitric Acid Digestion by ICP-MS	NI_TOT_4	<0.1 mg/kg	TIC-006	EPA method 200.8
Phosphorus - Total - Nitric Acid Digestion by ICP-MS	P_TOT_7	<0.5 mg/kg	TIC-006	EPA method 200.8
Lead - Total - Nitric Acid Digestion by ICP-MS	PB_TOT_6	<0.1 mg/kg	TIC-006	EPA method 200.8
Platinum - Total - Nitric Acid Digestion by ICP-MS	PT_TOT_3	<0.02 mg/kg	TIC-006	EPA method 200.8
Sulphur - Total as S by ICP-MS	S_TOT_1	<200 mg/kg	TIC-006	EPA method 200.8
Sodium Adsorption Ratio - Calculation	SAR_CALC_D	NA	TMZ-M06	
Antimony - Total - Nitric Acid Digestion by ICP-MS	SB_TOT_3	<0.5 mg/kg	TIC-006	EPA method 200.8
Selenium - Total - Nitric Acid Digestion by ICP-MS	SE_TOT_3	<0.1 mg/kg	TIC-006	EPA method 200.8
Silica - Acid Digested by ICP-MS	SI02_TOT_7	<100 mg/kg	TIC-006	EPA method 200.8
Tin - Total - Nitric Acid Digestion by ICP-MS	SN_TOT_3	<0.5 mg/kg	TIC-006	EPA method 200.8
Sulphate by ICP-MS	S04_TOT_1	<600 mg/kg	TIC-006	EPA method 200.8
Strontium - Total - Nitric Acid Digestion by ICP-MS	SR_TOT_5	<0.1 mg/kg	TIC-006	EPA method 200.8
Thorium - Total - Nitric Acid Digestion by ICP-MS	TH_TOT_3	<0.1 mg/kg	TIC-006	EPA method 200.8
Titanium - Total - Nitric Acid Digestion by ICP-MS	TI_TOT_4	<0.3 mg/kg	TIC-006	EPA method 200.8
Thallium - Total - Nitric Acid Digestion by ICP-MS	TL_TOT_3	<0.1 mg/kg	TIC-006	EPA method 200.8
Uranium - Total - Nitric Acid Digestion by ICP-MS	U_TOT_3	<0.1 mg/kg	TIC-006	EPA method 200.8
Vanadium - Total - Nitric Acid Digestion by ICP-MS	V_TOT_4	<0.1 mg/kg	TIC-006	EPA method 200.8
Zinc - Total - Nitric Acid Digestion by ICP-MS	ZN_TOT_6	<0.3 mg/kg	TIC-006	EPA method 200.8



## Inorganic Chemistry - Nutrients

Test parameter	AWQC analysis code	LoR	Analysis method	Reference method
Chloride	CL_DRY	<1000 mg/kg	T0104-02	APHA 4500-Cl- E
Fluoride - Ion Selective Electrode	F_DRY	<10 mg/kg	T0105-01	APHA 4500-F- C
Iodide - Ion Chromatography	I_TOT_2	<50 mg/kg	T0117-01	USEPA Method 300.0 (1993).
Nitrite as N	NO2N_3	<0.3 mg/kg	T0107-01	APHA 4500-NO3-I
Nitrate as Nitrogen - Calculation difference between Total NOx and Nitrite	NO3N_CALC3	<0.3 mg/kg	TMZ-M06	APHA 4500-NO3-I
Organic Nitrogen - Calculation (TKN - NH3)	ORGN_CAL_D	<200 mg/kg		
Oxidised Nitrogen	OXN_3	<0.3 mg/kg	T0161-01	APHA 4500-NO3-I
Phosphate - Total as P	P_TOT_3	<10 mg/kg	T0109-06	APHA 4500-P F
Total Kjeldahl Nitrogen	TKNN_COL_2	<200 mg/kg	T0112-06	APHA 4500-N org A
Nitrogen - Total - Calculation	TN_CALC_2	<200 mg/kg	TMZ-M06	APHA-N org A

## Inorganic Chemistry - Physical

Test parameter	AWQC analysis code	LoR	Analysis method	Reference method
Conductivity (20% W/V)	COND_DRY	<2 µS/cm	T0016-01	APHA 2510 B
pH by pH Electrode (20% W/V)	PH_PROBE_4	Avail Upon Request	T0010-01	APHA 4500-H B

## Inorganic Chemistry - Water Treatment

Test parameter	AWQC analysis code	LoR	Analysis method	Reference method
Filter Media Size Distribution	FMSD_1	Avail Upon Request	NN-INT	NA

# Saline Water

## Algal

Test parameter	AWQC analysis code	LoR	Analysis method	Reference method
Chlorophyll - 96% ethanol extraction	CHL_95ET3	<0.1 µg /L	T0380-02	Wintermans & de Mots (1965)
Chlorophyll a & Phaeophytin a - 96% ethanol extraction	CHLPHA95E3	<0.1 µg /L	T0380-02	ISO 10260 (1992)
Algal Scan & ID – Direct	ALG_SCAN_D	“Very Low” relative semi-quantitative estimate of algal abundance (1-10 cells/mL)	T0393	APHA Standard Methods (10200 C, E, F, I; APHA 2005) & Hötzel & Croome (1998, 1999)
Algal Scan & ID – Sedimented	ALG_SCAN_S	“Very Low” relative semi-quantitative estimate of algal abundance (1-10 cells/mL)	T0393	APHA Standard Methods (10200 C, E, F, I; APHA 2005) & Hötzel & Croome (1998, 1999)
Algal Enumeration – Partial – Direct	ALG_PART_D	1 cell/mL	T0393	APHA Standard Methods (10200 C, E, F, I; APHA 2005) & Hötzel & Croome (1998, 1999)
Algal Enumeration – Partial – Sedimented	ALG_PART_S	1 cell/mL	T0393	APHA Standard Methods (10200 C, E, F, I; APHA 2005) & Hötzel & Croome (1998, 1999)
Blue Green Algae - Direct	CYANO_D	1 cell/mL	T0393	APHA Standard Methods (10200 C, E, F, I; APHA 2005) & Hötzel & Croome (1998, 1999)
Blue Green Algae - Sedimented	CYANO_S	1 cell/mL	T0393	APHA Standard Methods (10200 C, E, F, I; APHA 2005) & Hötzel & Croome (1998, 1999)
Algal Enumeration – Total - Direct	ALG_TOT_D	1 cell/mL	T0393	APHA Standard Methods (10200 C, E, F, I; APHA 2005) & Hötzel & Croome (1998, 1999)
Algal Enumeration – Total - Sedimented	ALG_TOT_S	1 cell/mL	T0393	APHA Standard Methods (10200 C, E, F, I; APHA 2005) & Hötzel & Croome (1998, 1999)
Algal Enumeration – Periphyton - Direct	ALG_PERI_D	1 cell/mL	T0393	APHA Standard Methods (10200 C, E, F, I; APHA 2005) & Hötzel & Croome (1998, 1999)

**Note:** NATA accreditation for algal identification and enumeration is **only held to genus level** for this matrix. The limit of reporting in T0393 is flatly listed as 1 cell /mL. This is true for test codes that provide enumeration, however for **non-quantitative** test codes ALG\_SCAN\_D & ALG\_SCAN\_S, the limit of reporting would be the “Very Low” relative semi-quantitative abundance, as this would be the minimum possible reportable value for an algal taxa for these analyses.

## Organic Chemistry

Test parameter	AWQC analysis code	LoR	Analysis method	Reference method
Dissolved Organic Carbon - Shimadzu VCSH (High Level)	DOC_5	<1 mg/L	T0158-09	SM5310B
Total Carbon - Shimadzu VCSH (High Level)	TC_5	<1 mg/L	T0158-09	SM5310B
Total Organic Carbon - Shimadzu VCSH (High Level)	TOC_5	<1 mg/L	T0158-09	SM5310B
Dissolved Organic Carbon – Shimadzu VCSH (Low Level)	DOC_LLSW_1	<1 mg/L	T0158-09	SM5310B
Total Carbon – Shimadzu VCSH (Low Level)	TC_LLSW_1	<1 mg/L	T0158-09	SM5310B
Total Organic Carbon – Shimadzu VCSH (Low Level)	TOC_LLSW_1	<1 mg/L	T0158-09	SM5310B

## Inorganic Chemistry - Nutrients

Test parameter	AWQC analysis code	LoR	Analysis method	Reference method
Total Dissolved Phosphorus	P_TOT_12	<0.005 mg/L	T0109-44	APHA 4500-P F
Phosphorus - Total as P	P_TOT_13	<0.005 mg/L	T0109-44	APHA 4500-P F
Soluble Kjeldahl Nitrogen - Field filtered	SKN_SOL_2	<0.05 mg/L	T0112-01	APHA 4500-N org A
Total Kjeldahl Nitrogen	TKNN_COL_5	<0.05 mg/L	T0112-01	APHA 4500-N org A

## Inorganic Chemistry - Waste

Test parameter	AWQC analysis code	LoR	Analysis method	Reference method
Chemical Oxygen Demand - Total	COD_1	<5 mg/L	T0155-01	APHA 5220 B
Chemical Oxygen Demand - Readily Biodegradable Soluble	COD_RBS	<5 mg/L	T0155-01	APHA 5220 B
Chemical Oxygen Demand - Soluble	COD_SOL	<5 mg/L	T0155-01	APHA 5220 B

## Inorganic Chemistry - Metals

Test parameter	AWQC analysis code	LoR	Analysis method	Reference method
Silver - Soluble - Membrane Filtration by ICP-MS	AG_SOL_4	<0.00005 mg/L	TIC-006	EPA method 200.8
Silver - Total - Nitric Acid Digestion by ICP-MS	AG_TOT_6	<0.00005 mg/L	TIC-006	EPA method 200.8
Aluminium - Acid Soluble - Membrane Filtration by ICP-MS	AL_ASOL_4	<0.002 mg/L	TIC-006	EPA method 200.8
Aluminium - Soluble - Membrane Filtration by ICP-MS	AL_SOL_4	<0.002 mg/L	TIC-006	EPA method 200.8
Aluminium - Total by ICP-MS	AL_TOT_9	<0.002 mg/L	TIC-006	EPA method 200.8
Arsenic - Soluble by ICP-MS	AS_SOL_3	<0.0001 mg/L	TIC-006	EPA method 200.8
Arsenic - Total by ICP-MS	AS_TOT_3	<0.0001 mg/L	TIC-006	EPA method 200.8
Boron - Soluble - Membrane Filtration by ICP-MS	B_SOL_5	<0.02 mg/L	TIC-006	EPA method 200.8
Barium - Soluble by ICP-MS	BA_SOL_3	<0.0005 mg/L	TIC-006	EPA method 200.8
Barium - Total by ICP-MS	BA_TOT_4	<0.0005 mg/L	TIC-006	EPA method 200.8
Beryllium - Soluble by ICP-MS	BE_SOL_2	<0.0002 mg/L	TIC-006	EPA method 200.8
Beryllium - Total by ICP-MS	BE_TOT_3	<0.0002 mg/L	TIC-006	EPA method 200.8
Bismuth - Soluble by ICP-MS	BI_SOL_2	<0.0001 mg/L	TIC-006	EPA method 200.8
Bismuth - Total by ICP-MS	BI_TOT_2	<0.0001 mg/L	TIC-006	EPA method 200.8
Calcium - Membrane Filtration by ICP-MS	CA_SOL_5	<0.05 mg/L	TIC-006	EPA method 200.8
Calcium - Total - Acid Digestion by ICP-MS	CA_TOT_9	<0.05 mg/L	TIC-006	EPA method 200.8
Cadmium - Soluble by ICP-MS	CD_SOL_4	<0.0002 mg/L	TIC-006	EPA method 200.8
Cadmium - Total by ICP-MS	CD_TOT_7	<0.0002 mg/L	TIC-006	EPA method 200.8
Cobalt - Soluble by ICP-MS	CO_SOL_2	<0.0002 mg/L	TIC-006	EPA method 200.8
Cobalt - Total by ICP-MS	CO_TOT_5	<0.0002 mg/L	TIC-006	EPA method 200.8
Chromium - Soluble by ICP-MS	CR_SOL_3	<0.0006 mg/L	TIC-006	EPA method 200.8
Chromium - Total by ICP-MS	CR_TOT_5	<0.0006 mg/L	TIC-006	EPA method 200.8
Copper - Soluble by ICP-MS	CU_SOL_3	<0.0003 mg/L	TIC-006	EPA method 200.8
Copper - Total by ICP-MS	CU_TOT_5	<0.0003 mg/L	TIC-006	EPA method 200.8
Iron - Soluble - Membrane Filtration by ICP-MS	FE_SOL_5	<0.0005 mg/L	TIC-006	EPA method 200.8

Test parameter	AWQC analysis code	LoR	Analysis method	Reference method
Iron - Total by ICP-MS	FE_TOT_10	<0.0005 mg/L	TIC-006	EPA method 200.8
Mercury - Soluble by ICP-MS	HG_SOL_3	<0.00003 mg/L	TIC-006	EPA method 200.8
Mercury - Total by ICP-MS	HG_TOT_4	<0.00003 mg/L	TIC-006	EPA method 200.8
Potassium - Soluble - Membrane Filtration by ICP-MS	K_SOL_5	<0.05 mg/L	TIC-006	EPA method 200.8
Lanthanum - Soluble - Membrane Filtration by ICP-MS	LA_SOL_3	<0.0001 mg/L	TIC-006	EPA method 200.8
Lanthanum - Total by ICP-MS	LA_TOT_4	<0.0001 mg/L	TIC-006	EPA method 200.8
Lithium - Soluble by ICP-MS	LI_SOL_3	<0.0003 mg/L	TIC-006	EPA method 200.8
Lithium - Total by ICP-MS	LI_TOT_3	<0.0003 mg/L	TIC-006	EPA method 200.8
Magnesium - Soluble - Membrane Filtration by ICP-MS	MG_SOL_5	<0.05 mg/L	TIC-006	APHA 3120
Magnesium - Total - Acid Digestion by ICP-MS	MG_TOT_9	<0.4 mg/L	TIC-006	EPA method 200.8
Manganese - Soluble by ICP-MS	MN_SOL_4	<0.0003 mg/L	TIC-006	EPA method 200.8
Manganese - Total by ICP-MS	MN_TOT_5	<0.0003 mg/L	TIC-006	EPA method 200.8
Molybdenum - Soluble by ICP-MS	MO_SOL_2	<0.0002 mg/L	TIC-006	EPA method 200.8
Molybdenum - Total by ICP-MS	MO_TOT_3	<0.0002 mg/L	TIC-006	EPA method 200.8
Sodium - Membrane Filtration by ICP-MS	NA_5	<0.1 mg/L	TIC-006	EPA method 200.8
Nickel - Soluble by ICP-MS	NI_SOL_2	<0.0005 mg/L	TIC-006	EPA method 200.8
Nickel - Total by ICP-MS	NI_TOT_5	<0.0005 mg/L	TIC-006	EPA method 200.8
Phosphorus - Soluble by ICP-MS	P_SOL_7	<0.005 mg/L	TIC-006	EPA method 200.8
Phosphorus - Total by ICP-MS	P_TOT_8	<0.005 mg/L	TIC-006	EPA method 200.8
Lead - Soluble by ICP-MS	PB_SOL_4	<0.0002 mg/L	TIC-006	EPA method 200.8
Lead - Total by ICP-MS	PB_TOT_7	<0.0002 mg/L	TIC-006	EPA method 200.8
Platinum - Soluble by ICP-MS	PT_SOL_2	<0.00002 mg/L	TIC-006	EPA method 200.8
Platinum - Total by ICP-MS	PT_TOT_2	<0.00002 mg/L	TIC-006	EPA method 200.8
Antimony - Soluble by ICP-MS	SB_SOL_3	<0.0003 mg/L	TIC-006	EPA method 200.8
Antimony - Total by ICP-MS	SB_TOT_2	<0.0003 mg/L	TIC-006	EPA method 200.8
Selenium - Soluble by ICP-MS	SE_SOL_3	<0.0004 mg/L	TIC-006	EPA method 200.8

Test parameter	AWQC analysis code	LoR	Analysis method	Reference method
Selenium - Total by ICP-MS	SE_TOT_2	<0.0004 mg/L	TIC-006	EPA method 200.8
Silica - Soluble by ICP-MS	SI02_SOL_3	<0.1 mg/L	TIC-006	EPA method 200.8
Silica - Total by ICP-MS	SI02_TOT_3	<0.1 mg/L	TIC-006	EPA method 200.8
Tin - Soluble by ICP-MS	SN_SOL_2	<0.0005 mg/L	TIC-006	EPA method 200.8
Tin - Total by ICP-MS	SN_TOT_2	<0.0005 mg/L	TIC-006	EPA method 200.8
Strontium - Soluble by ICP-MS	SR_SOL_3	<0.0001 mg/L	TIC-006	EPA method 200.8
Strontium - Total by ICP-MS	SR_TOT_3	<0.0001 mg/L	TIC-006	EPA method 200.8
Sulphur by ICP-MS	SULPH_6	0.2 - 0.6 mg/L	TIC-006	EPA method 200.8
Thorium - Soluble by ICP-MS	TH_SOL_2	<0.0002 mg/L	TIC-006	EPA method 200.8
Thorium - Total by ICP-MS	TH_TOT_2	<0.0002 mg/L	TIC-006	EPA method 200.8
Titanium - Soluble by ICP-MS	TI_SOL_2	<0.0005 mg/L	TIC-006	EPA method 200.8
Titanium - Total by ICP-MS	TI_TOT_3	<0.0005 mg/L	TIC-006	EPA method 200.8
Thallium - Soluble by ICP-MS	TL_SOL_2	<0.0001 mg/L	TIC-006	EPA method 200.8
Thallium - Total by ICP-MS	TL_TOT_2	<0.0001 mg/L	TIC-006	EPA method 200.8
Uranium - Soluble by ICP-MS	U_SOL_2	<0.0001 mg/L	TIC-006	EPA method 200.8
Uranium - Total by ICP-MS	U_TOT_2	<0.0001 mg/L	TIC-006	EPA method 200.8
Vanadium - Soluble by ICP-MS	V_SOL_3	<0.0003 mg/L	TIC-006	EPA method 200.8
Vanadium - Total by ICP-MS	V_TOT_3	<0.0003 mg/L	TIC-006	EPA method 200.8
Zinc - Soluble by ICP-MS	ZN_SOL_3	<0.0004 mg/L	TIC-006	EPA method 200.8
Zinc - Total by ICP-MS	ZN_TOT_5	<0.0004 mg/L	TIC-006	EPA method 200.8

**Note:** LoRs available upon request, please contact Customer Service at [customerservice@awqc.com.au](mailto:customerservice@awqc.com.au)



# Suites

We offer a range of testing suites and test lists tailored to industry and water types.

## Microbiological Water Suites

Test parameter	AWQC suite code	LoR	Analysis method	Reference method
Coliforms and E. coli - MPN by Defined Substrate Technology	DST_SUITE	<2 MPN/100mL	T0080-07	AS 4276.21-2005
Coliforms and E. coli - *COMPLEX MPN by Defined Substrate Technology	DSTSUITES_X	<2 MPN/100mL	T0080-07	AS 4276.21-2005
Coliforms and E. coli - Chromogenic Membrane Filtration **	MI_SUITE	1 CFU/100mL	TM-028	USEPA Method 1604/IH

**Note:** \*\* Chromogenic Membrane Filtration services for clean matrices (i.e. Drinking Water)

## Chemical Water Suites

Test parameter	AWQC suite code	AWQC soil suite code	Suite name	Reference method
Silver, Aluminium, Arsenic, Boron, Barium, Beryllium, Bismuth, Calcium, Cadmium, Cobalt, Chromium, Copper, Iron, Mercury, Potassium, Lanthanum, Lithium, Magnesium, Manganese, Molybdenum, Sodium, Nickel, Lead, Antimony, Selenium, Silica, Tin, Strontium, Sulphur as Sulphate, Thorium, Titanium, Thallium, Uranium, Vanadium, Zinc	LW1 (total and soluble metals)	LS1	Full Metals Suite - 35 Metals	EPA method 200.8

# Test Lists

## Microbiological Water Test Lists

Test parameter	AWQC test list code	Test list name
Coliforms & E. coli (CFU/100mL), Pseudomonas aeruginosa (MF), Pseudomonas Spp., Colony Count @ 35°C - Potable waters	M1	Microbiological 1
Coliforms & E. coli (MPN/100mL), Pseudomonas aeruginosa (MF), Pseudomonas spp., Colony Count @ 35°C - Non-potable waters	M2	Microbiological 2
E. coli (MF), Pseudomonas aeruginosa (MF), Colony Count @ 35°C	M3	Microbiological 3
Legionella, Colony Count @ 35°C	M4	Microbiological 4
Legionella, Colony Count @ 35°C & 22°C	M5	Microbiological 5
Coliforms & E. coli (CFU/100mL), Legionella, Colony Count @ 35°C & 22°C - Potable Waters	M6	Microbiological 6
Total, Faecal Coliforms & E. coli (MF), Colony Count @ 35°C & 22°C	M7	Microbiological 7

## Legionella in Cooling Towers

Test parameter	AWQC test list code	Test list name
Legionella spp., Colony Count @ 35°C	CT1	Cooling Tower

## Wastewater

Test parameter	AWQC test list code	Test list name
pH, Total Suspended Solids, Biochemical Oxygen Demand, Grease	WWS1	Wastewater 1
pH, Suspended Solids, Biochemical Oxygen Demand, Chemical Oxygen Demand, Grease, Conductivity & Total Dissolved Solids, Ammonia as N, Total Kjeldahl Nitrogen as N, Phosphorus, Sulphur, Calcium, Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Zinc, Sulphide	WWL1 (total and soluble metals)	Wastewater 2

## Agriculture

Test parameter	AWQC test list code	Test list name
pH, Conductivity and Total Dissolved Solids, Calcium, Magnesium, Potassium, Chloride, Sulphate, Alkalinity, Sodium Adsorption Ratio (SAR)	AgS1	Irrigation Test List A
pH, Conductivity and Total Dissolved Solids, Calcium, Magnesium, Potassium, Chloride, Sulphate, Alkalinity, Sodium Adsorption Ratio (SAR), Fluoride, Aluminium, Arsenic, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Manganese, Mercury, Molybdenum, Nickel, Selenium, Uranium, Vanadium, Zinc	AgL1 (total metals)	Irrigation Test List B
pH, Conductivity & Total Dissolved Solids, Calcium, Magnesium, Sodium, Potassium, Chloride, Sulphate, Alkalinity, Nitrite, Nitrate	AgS2	Stock Watering Test List A
pH, Conductivity & Total Dissolved Solids, Calcium, Magnesium, Sodium, Potassium, Chloride, Sulphate, Alkalinity, Fluoride, Nitrite, Nitrate, Aluminium, Arsenic, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Manganese, Mercury, Molybdenum, Nickel, Selenium, Uranium, Vanadium, Zinc	AgL2 (total metals)	Stock Watering Test List B
Iron, Copper, Zinc, Manganese	Ag3	Extractable Metals
E. coli (MPN/100mL), Total Coliforms, pH, Conductivity, Total Dissolved Solids, Turbidity, Aluminium, Iron, Manganese, Ammonia, Nitrogen Oxides	DW1	Dam Water
E. coli (CFU/100mL)	FP1	Fresh Produce

## Winery Processing

Test parameter	AWQC test list code	Test list name
pH, Conductivity & Total Dissolved Solids, Alkalinity, Chloride, Phosphorus, Biochemical Oxygen Demand, Sodium Adsorption Ratio (SAR), Sulphur, Calcium, Potassium, Magnesium, Sodium, Nitrate & Nitrite as N, Suspended Solids, Nitrogen, Total Kjeldahl Nitrogen as N, Total Organic Carbon	WWS2	Winery Waste
Coliforms & E. coli (MPN/100ml), Colony Count @ 22°C & 35°C, Mercury, Arsenic, Chromium, Cadmium, Lead, Chromium (VI), Fluoride, Chloride, pH, Cyanide	WPW1	Winery Processing Water

## Herbicides

Test parameter	AWQC test list code	Test list name
Acidic Herbicides (2 4 5-T, 2 4-D, Chlorsulfuron, Clopyralid, Dicamba, MCPA, Metsulfuron Methyl, Picloram, Silvex, Sulfometuron, Triclopyr), Glyphosate, AMPA	H1	Herbicides

## Water and Soil - Inorganics and Nutrients

Test parameter	AWQC water code	AWQC soil code	Test list name
Arsenic, Cadmium, Chromium, Copper, Iron, Mercury, Manganese, Nickel, Lead, Zinc	SW1 (total metals)	SS1	Heavy Metals - 10 Metals
Aluminium, Arsenic, Boron, Beryllium, Cadmium, Chromium, Copper, Iron, Mercury, Manganese, Nickel, Lead, Selenium, Zinc	MW1 (total and soluble metals)	MS1	14 analyses
Silver, Aluminium, Arsenic, Boron, Barium, Beryllium, Bismuth, Calcium, Cadmium, Cobalt, Chromium, Copper, Iron, Mercury, Potassium, Lanthanum, Lithium, Magnesium, Manganese, Molybdenum, Sodium, Nickel, Lead, Antimony, Selenium, Silica, Tin, Strontium, Sulphur as Sulphate, Thorium, Titanium, Thallium, Uranium, Vanadium, Zinc	LW1 (total and soluble metals)	LS1	Full Metals Suite - 35 Metals
Calcium, Magnesium, Sodium, Potassium	SW2 (soluble metals)	SS2	Major Cations
Calcium, Magnesium, Sodium, Potassium, Sodium Adsorption Ratio, Total Hardness as Calcium Carbonate	LW2 (soluble metals)	LS2	Major Cations - Extended
Alkalinity, Chloride, Sulphate	SW3	SS3	Major Anions
Alkalinity, Chloride, Bromide, Sulphate, Fluoride	LW3	LS3	Major Anions
Fluoride, Nitrite as N, Nitrate as N, Reactive Phosphorus	W3	S3	Minor Anions
Nitrate & Nitrite as N, Total Nitrogen, Total Kjeldahl Nitrogen as N, Total Phosphorus	SW4	SS4	Nutrients
Nitrate & Nitrite as N, Total Nitrogen, Total Kjeldahl Nitrogen as N, Nitrite as N, Nitrate as N, Ammonia	MW4	MS4	Nutrients
Nitrate & Nitrite as N, Total Nitrogen, Total Kjeldahl Nitrogen as N, Nitrite as N, Nitrate as N, Ammonia, Total Phosphorus, Reactive Phosphorus	LW4	LS4	Nutrients

## Australian Drinking Water Guidelines - Drinking Water

Test parameter	AWQC test list code	Test list name
E. coli (MPN/100mL), Chloride, Total Chloride Calculation, Fluoride, Oxidised Nitrogen, Nitrate, Nitrite, pH, Conductivity and Total Dissolved Solids, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Sulphur, Uranium, Vanadium and Zinc, Total Hardness Calculation, Total Magnesium Calculation	SBW1	Bore Water

Test parameter	AWQC test list code	Test list name
E. coli (MPN/100mL), Chloride, Total Chloride Calculation, Fluoride, Oxidised Nitrogen, Nitrate, Nitrite, pH, Conductivity and Total Dissolved Solids, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Sulphur, Uranium, Vanadium and Zinc, Total Hardness Calculation, Total Magnesium Calculation, Volatile Organic Compounds	LBW1	Bore Water (recommended for metro areas)
E. coli (MPN/100mL), Copper, Iron, Lead, Nickel, Zinc	RW1	Rainwater
Coliforms and E. coli (CFU/100mL), Conductivity and Total Dissolved Solids, pH, Alkalinity, Sulphate, Chloride, Calcium, Magnesium, Sodium, Potassium	SDW1	AWQC Drinking Water Monitoring 1
Coliforms and E. coli (CFU/100mL), Conductivity and Total Dissolved Solids, pH, Alkalinity, Sulphate, Chloride, Calcium, Magnesium, Sodium, Potassium, Arsenic, Boron, Barium, Cadmium, Chromium, Copper, Manganese, Nickel, Lead, Antimony, Selenium, Silver, Mercury, Fluoride, Nitrite as N, Nitrate as N, Nitrate & Nitrite as N	MDW1	AWQC Drinking Water Monitoring 2 (includes SDW1)
Coliforms and E. coli (CFU/100mL), Conductivity and Total Dissolved Solids, pH, Alkalinity, Sulphate, Chloride, Calcium, Magnesium, Sodium, Potassium, Arsenic, Boron, Barium, Cadmium, Chromium, Copper, Manganese, Nickel, Lead, Antimony, Selenium, Silver, Mercury, Fluoride, Nitrite as N, Nitrate as N, Nitrate & Nitrite as N, Turbidity, Ammonia, Total Hardness, Sulphide, Aluminium, Iron, Zinc, Colour, Colony Count @ 20°C & 35°C	LDW1	AWQC Drinking Water Monitoring 3 (includes MDW1)

## Dental Unit Quality

Test parameter	AWQC test list code	Test list name
Legionella, Pseudomonas aeruginosa, Conductivity and Total Dissolved Solids, Chloride, Iron, Phosphates, Silicates, Colony Count @ 20°C & 35°C	DUW1	Dental Unit WQ

## Bore Water Corrosion

Test parameter	AWQC test list code	Test list name
Iron Bacteria (MF & SP), Iron, Manganese, Arsenic	SBW2 (total and soluble metals)	Bore Iron Bacteria Corrosion
Iron Bacteria (MF & SP), Iron, Manganese, Arsenic, Aluminium, Copper, Lead, Zinc	LBW2 (total and soluble metals)	Bore Iron Bacteria Corrosion - Extended

## Renal Dialysis Unit

Test parameter	AWQC test list code	Test list name
Aluminium, Copper, Fluoride, Lead, Sulphur, Nitrate & Nitrite as N, Nitrate as N, Nitrite as N, Zinc, Calcium, Sodium, Magnesium, Potassium	SRC1 (total metals)	Renal Clinic Dialysis Unit
Aluminium, Copper, Fluoride, Lead, Sulphur, Nitrate & Nitrite as N, Nitrate as N, Nitrite as N, Zinc, Calcium, Sodium, Magnesium, Potassium, Arsenic, Antimony, Barium, Beryllium, Cadmium, Chromium, Mercury, Selenium, Silver, Thallium	LRC1 (total metals)	Renal Clinic Dialysis Unit - Extended (includes SRC1)

## Seepage

Test parameter	AWQC test list code	Test list name
Thermotolerant Coliforms & E. coli (MPN/100mL), Fluoride, Filterable Reactive Phosphorus as P, Conductivity and Total Dissolved Solids, Total Dissolved Solids (calculation by EC), Nitrate & Nitrite as N, Total Hardness Calculation, pH, Chloride, Ammonia as N, Total Phosphorus, Calcium, Magnesium, Sodium	GS1	Groundwater Seepage

## Home Brew Water Testing

Test parameter	AWQC test list code	Test list name
Sodium, Calcium, Magnesium, Potassium, Iron, Zinc, Manganese, Chloride & Chlorides as Sodium Chloride, Alkalinity as Carbonate, Bicarbonate and Hydroxide, pH, Sulphur, Conductivity and Total Dissolved Solids, Total Hardness Calculation	HB1	Home Brew

**Note:** \*COMPLEX – dilution required for non-potable water samples  
Please refer to individual analysis codes for LoRs

### **Provision of Services**

1. The Australian Water Quality Centre (AWQC) will provide analytical services consistent with its certification to ISO9001:2015 and National Association of Testing Authorities Australia (NATA) Accreditation No. 1115

### **Samples Under Contract**

2. A Customer Service Request (CSR) or quotation is produced by the AWQC for all analysis and proposed services, detailing the work to be done and the manner in which it will be performed. A copy of the CSR or quotation will be provided to the customer. Acceptance of the CSR or quotation must occur before work can proceed. Formal acceptance of the CSR or quotation will place any samples delivered or services initiated under contract. Failing to notify the AWQC of acceptance of the CSR or quotation will invalidate any obligation with respect to receipt or timely analysis of samples or provision of agreed services. Any samples received may be disposed of at the discretion of Customer Service personnel without notification to the customer if the samples are not under contract.

3. The details contained in the CSR or quotation are complete. Only those samples that conform to what is expected and detailed in the CSR or quotation sent to the customer will be deemed under contract and subsequently be received and analysed. In all cases where samples are not under contract AWQC personnel will attempt to contact the customer with whom the CSR or quotation has been established. Where the customer cannot be contacted the decision to receive samples will be at AWQC personnel's discretion. In all cases analysis or experimentation conducted will incur the standard fee and a further service fee may be charged to cover expenses in managing mismatched samples. Samples held but not formally accepted will be disposed of at the discretion of AWQC personnel and a service fee may apply.

### **Pricing, Accounts and Payment**

4. A quotation is valid for 30 days from the date of issue unless otherwise specified.

5. All charges will be consistent with the prices contained in the CSR or quotation.

6. Should any of the details in the CSR or quotation, confirmed as true and accurate by the customer, later be proven to be false, the AWQC reserves the right to adjust fees and charges accordingly to reflect the new conditions of samples or corrected assumptions.

7. The AWQC reserves the right to apply sample preparation charges consistent with the sample conditions for analysis as stated on page 4 of the CSR or quotation. Wherever practicable, the possibility of these charges will be identified by AWQC personnel, however a charge will apply even if this condition has not been met.

8. Any changes notified to AWQC personnel during the execution of the CSR or quotation may be subject to a change in final price consistent with the nominated change. Customers may be issued with an updated CSR or quotation to reflect the new expected price.

9. Cancellation of analysis or experimentation will incur an administrative fee where preparation or analysis has not commenced or the full analytical or service fee where analysis or experimentation has commenced. If preparation or analysis has commenced, the result will be reported consistent with AWQC accreditation and certification.

10. A tax invoice will be prepared in accordance with GST legislation. Invoices are issued monthly to all customers except private tests (residential) where the invoice will be issued with the final test results upon test completion. GST does not apply to international customers.

11. A minimum invoice fee may be charged. The minimum fee is detailed on page 4 of the CSR or quotation along with batch charges, sampling charges, overtime charges and charges for preliminary reports if applicable. These charges will be quantified on tax invoices.

12. Prior to the AWQC executing a CSR or quotation, AWQC may make such enquiries as to the credit worthiness of the customer as it deems appropriate and may at its absolute discretion deny or limit the availability of credit to the customer on such terms and conditions as AWQC deems fit.

13. Any customer who appears in SA Water's bad debtor list will only be able to select a prepayment option for services. Prepayment is required for international customers, where confirmation of payment from SA Water's Accounts Department will allow the commencement of testing.

14. Payment terms are strictly 21 days. A late fee may be applied if payment is not made by the due date.

### **Records**

15. Customer data is held confidentially and is not made available to any other party other than the customer's nominated contact personnel. Details of the customer, their requested services and results of testing are held securely within the AWQC's Laboratory Information Management System (LIMS).

When the laboratory is required by law to release confidential information, the customer shall, unless prohibited by law, be notified of the information provided. Information about the customer obtained from sources other than the customer, shall be confidential between the customer and the laboratory. The source of this information shall be confidential to the laboratory and shall not be shared with the customer, unless agreed by the source.

16. Records will be kept for a period consistent with NATA and or ISO15489.1-2000 requirements, whichever is the greater.

### **Sample Receipt and Handling**

17. Unless otherwise specified in the CSR or quotation, the customer is responsible for the collection and delivery of samples to the AWQC for completion of quoted services. Once a CSR or quotation has been approved, AWQC will at the customer's request provide appropriate sample bottles to ensure the integrity of the sample is not compromised. Certain analyses require specific sampling techniques and the use of pre-dosed bottles to preserve the analytes of interest. Samples from customers who do not use appropriate bottles or follow the required sampling techniques will be accepted however AWQC cannot guarantee the validity of the results due to possible contamination of bottles and/or degradation of the analytes of interest.

18. Upon arrival all samples are received into the Laboratory Information Management System (LIMS). An automated Sample Receipt Notification will be sent to the customer informing of the temperature recorded on each bottle. It is the responsibility of the customer to contact AWQC and stop testing if the customer feels that the integrity of the samples has been compromised. Unless otherwise directed, the samples will be analysed and the results qualified on the Final Analytical Report.

19. Where AWQC determines that the integrity of the sample may have been compromised, it will endeavour to contact the customer to ascertain if AWQC should proceed with the quoted services. Where the customer cannot be contacted, AWQC will in its absolute discretion make a decision whether to proceed or not with the quoted services and the customer shall be liable for all charges relating to all services performed by AWQC pursuant to these Terms.

20. All samples for AWQC must be delivered to the below address:  
AWQC, SA Water House, 250 Victoria Square Adelaide -  
entry at rear of building from Angas Street Laneway.

21. All bottles must be labelled and detail sample collection date and time. Labels must contain sufficient information to determine ownership of the sample and unique identifiers for each bottle consistent with information provided for the CSR or quotation. All bottles must have a contact phone number included if AWQC labels have not been used.

22. Where customers have sent Chain of Custody forms, these will be signed by staff receiving the sample and sent back following instructions on the Chain of Custody form.

23. Where relevant it is suggested that all samples be submitted on ice in which the chilling process has already begun.

24. Unless prior arrangements are made, samples will only be received between the hours of 8:00am and 8:00pm Monday and Tuesday; and 8:00am and 4:30pm on Wednesday, Thursday and Friday excluding public holidays.

25. Receipt and analysis of samples outside of these hours will be negotiated with AWQC personnel on an individual basis and must be confirmed in writing.

26. Samples requiring receipt and extraction to meet AS/NZS 5667 holding time recommendations must be identified to AWQC personnel at the time of creating the CSR or quotation to flag samples as needing immediate attention upon arrival. Failure to do so will invalidate any obligation AWQC may have to meet these holding times.

27. Meeting holding times as per AS/NZS 5667: Water Quality - Sampling (Part 1: Guidance on the design of Sampling Programs, sampling techniques and the preservation and handling of samples), cannot be guaranteed for samples received after 4:30pm.

28. The customer must give written notice of all known safety, quarantine or health hazards and special procedures relevant to the handling, testing, storage, transport and disposal of samples. AWQC reserves the right to refuse to conduct any testing where AWQC in its absolute discretion determines such testing may pose a safety, quarantine or health hazard. AWQC reserves the right for samples deemed hazardous by AWQC to be returned to the customer at the customer's expense.

29. The customer acknowledges that during conduct of the services the samples or parts of samples may be altered, damaged, lost or destroyed. AWQC shall not be liable to the customer or any third party for any samples that are altered, damaged, lost or destroyed during conduct of the services.

30. The customer is responsible for ensuring that samples supplied for testing are representative of the product or material to be analysed and for retaining any duplicate or control samples. The analytical results obtained relate only to the samples submitted for testing. Any assumptions or generalisations made from these results are done so at the discretion of the customer – no responsibility is taken by the AWQC in this matter. It is the responsibility of the customer to retain any duplicate or control samples that they may require.

31. Unless AWQC has otherwise agreed in writing, AWQC shall not be obliged to return samples to the customer and may in its discretion store, experiment on, destroy or dispose of samples. If samples or products are to be returned, to the customer, this will be done at the customer's expense.

#### **Turnaround Times and Results Query**

32. For work contracted by CSR, turnaround time is defined as the time elapsed between the sample being received at the AWQC (where AWQC Sampling personnel have not collected the sample) and the test being authorised and available to customers on request for preliminary reporting. Samples received after 4:30pm will be deemed to have been received at 8:30am on the

following business day. Where samples are collected or picked up by AWQC Sampling personnel the turnaround time is defined as starting at the time of sample collection or pick up in the field.

33. Report due dates are estimated and are dependent on the length of project, the expected turnaround time of each test on each sample and the likely results obtained. A change in experimental protocols or unexpected data may result in a change to anticipated reporting dates. An estimate does not constitute an agreement to deliver the report at that time but every effort will be made to do so. The customer will be notified of changes in report date as required during the test program.

34. It is the customer's responsibility to ensure all required information is received by the AWQC pertaining to the samples in order for agreed turnaround times and/or reporting dates to be met.

35. Should delays be incurred due to insufficient or inappropriate information being supplied, the AWQC will not be bound to agreed turnaround times or reporting dates.

36. Queries of results or requests for repeat analysis or testing must be undertaken within a period agreed with the customer after receipt of Certificate of Analysis or report. Should a repeat analysis confirm original results the customer may be charged for the repeat analysis or testing. Please note that for some analyses, holding times that have been exceeded will impact on test results and a repeat analysis may not be able to confirm original results under any circumstances. Additional charges will be made if testing of samples using alternative procedures is required. New samples, or duplicates, outside of the original quotation requiring testing will also incur an additional charge.

#### **Expert Evidence**

37. AWQC, its proprietor, its officers, employees and agents are under no legal obligation to provide information (other than that required by AWQC pursuant to its contract with the customer) or expert witnesses as an outcome of any testing undertaken at AWQC.

38. Any request for further information or expert witnesses should be addressed in writing by the customer to AWQC, which will in due course notify its decision in writing.

39. In circumstances where AWQC, its proprietor, its officers, employees or agents agree or are required to provide information or appear as expert witnesses as an outcome of testing undertaken at AWQC an hourly fee will be charged to the customer.

#### **Intellectual Property**

40. All intellectual property rights associated with sample analysis methods, processes and reports are vested, and shall remain vested, in AWQC. No other party may replicate or appropriate the method or any part thereof for any use, be it commercial or otherwise, without the express written consent of AWQC. The customer is granted a non-exclusive, non-transferable, royalty-free licence to use any report provided by AWQC as part of the services for its own internal purposes.

#### **Force Majeur**

41. AWQC shall not be responsible or liable for any delay to perform any of its obligations when such delay or failure to perform any of its obligations is caused by unforeseen circumstances beyond its reasonable control.

#### **Exclusion of Warranty**

42. To the full extent permitted by law AWQC excludes all warranties, terms, conditions or undertakings (terms), whether express or implied, in relation to services, the report or its contents. Where any legislation implies any terms which cannot be excluded or modified then such terms shall be deemed to be included. However (to the full extent permitted by law) AWQC's liability to the customer is limited at AWQC's option to the re-performance of service or the refund of service fee.



43. Without limiting the generality of this clause, it is agreed that, to the full extent permitted by any applicable Commonwealth or State law, AWQC will not be liable to the customer or any other person for any loss of profits or business whether directly or indirectly incurred or any special, indirect or consequential damages arising from the customer's use of AWQC's services or reports.

43A. AWQC warrants that:

(a) the services will conform to their description and any applicable specifications;

(b) the services will comply with all applicable laws and the requirements of any relevant government agency, recognised standards and any other industry standards, and any Australian Standards;

(c) in performing the services, and in the conduct of its business generally, AWQC will:

(i) comply with all applicable laws, and any laws, rules and regulations of the countries in which it operates (including laws relating to environmental matters, data protection, privacy, wages, hours, and conditions of employment, subcontractor selection, discrimination, occupational health and safety, motor vehicle and transport safety, and migration); and will ensure that its personnel do not use child, slave, involuntary prisoner labour or any other form of forced or involuntary labour or engage in abusive employment or corrupt business practices; and

(ii) provide a safe, clean and healthy work environment for its personnel;

(d) the services will be performed with the skill, care and diligence expected of a skilled and experienced professional contractor; and

(e) it has and will maintain all necessary licences, approvals, permits and authorities in relation to the performance of the services.

#### **Customer's Release and Indemnity**

44. The customer hereby releases and indemnifies and shall continue to release and indemnify AWQC, its officers, employees and agents from and against all actions, claims, proceedings or demands (including any costs and expenses in defending or servicing same) which may be brought against it or them, in respect of any loss, death, injury, illness or damage to persons or property, and whether direct or indirect and in respect of any infringement of any industrial or intellectual property rights, howsoever arising out of the use of the report or the services of AWQC.

#### **Customer's Acknowledgment**

45. The customer acknowledges that:

- the customer at its own risk uses the report and its contents and any advice, opinions or information supplied by AWQC, its officers, employees or agents concerning the service
- the service is performed on the understanding that the customer will not hold AWQC, its officers, employees or agents liable for any loss or damage resulting from the conduct of the service or the use of or reliance upon the report or its contents
- it is the responsibility of the customer to make its own assessment of the suitability for any purpose of the service, report and its contents and any information or advice generated there from.

#### **Governing Law and Jurisdiction**

46. The services are governed by the laws of the State of South Australia unless Commonwealth law prevails.

#### **Public Statement or Use of AWQC Name**

47. The customer will not without the prior written consent of the AWQC make any reference to a report or its contents or the services of the AWQC in any form of advertising, endorsement, packaging, labelling, or any other way relating to a product of the customer. The customer will not make any press release or public statement about the services or AWQC without AWQC's written consent.

48. The customer will seek written consent prior to publishing of PDF reports on customer web sites.

#### **Field Services Specific Terms & Conditions**

##### **Provision of Services**

49. The Australian Water Quality Centre (AWQC) offers field services including the analysis and collection of samples in the field. This will be provided within the scope of accreditation with National Association of Testing Authorities, Australia (NATA) and certification to ISO9001:2015.

##### **Notification Period**

50. The AWQC will provide field services when a minimum notification of two (2) weeks is provided by customers detailing services required. Should urgent field services be required, shorter notification periods can be negotiated subject to the availability and capacity of the service and necessary information to ensure safe and efficient collection.

##### **Failure to Collect Samples on the Nominated Day**

51. Whilst every effort will be made to collect customer samples on the nominated day as detailed in the Customer Service Request, where circumstances prevent this happening, the customer will be notified and an alternative collection date will be arranged.

##### **Safety**

52. During the first sampling event and prior to sample collection a Field Services Representative will carry out a risk assessment to allow safe collection of the sample(s). Should any risks be present that cannot be mitigated by the Representative to allow safe collection, sampling will not take place. An attendance charge may apply.

53. Where a customer requires a risk assessment in advance of the sampling event a standard fee shall apply.

54. Customer's site inductions for Field Services personnel will incur a charge for any period exceeding 15 minutes in excess of the sampling event itself (the process of preparing sample points and filling bottles for analysis).

55. Specific site requirements must be provided in writing at least two (2) weeks prior to the sampling event. This may include, but not be limited to, only one industry specific site visit by one sampler per day (e.g. farms), or specific immunisation requirements.

56. Should the customer require Field Services personnel to sign any documentation prior to obtaining site access, a copy of the documentation shall be provided up to two (2) weeks in advance of the first sampling event.

##### **Provision of Information**

57. All contact details of relevant customers who will meet the Field Services Representative during the sampling event or where no customer will be present, the details of a customer's representative who is familiar with the sampling location, will be provided to AWQC Customer Service personnel a minimum of two (2) weeks prior to the first collection event.

58. The customer will be required to meet a Field Service Representative during the first collection event at each different location. Where this is not possible, detailed maps and photographs identifying the location and sampling point must be provided.

59. For routine sampling AWQC will work with the customer to establish permanent signage including bar coding, photographs and GPS coordinates for sampling points.

60. Where access to sampling sites is not provided directly by the customer, sufficient instructions, information or keys will be provided to ensure direct access to a sampling point location without delay. Where this may not be possible, any delay exceeding 15 minutes will incur additional fees commensurate with the additional time taken.

61. Each sample pick up must have appropriate documentation including a signed Chain of Custody Form. Where the customer has not provided one the Field Services Representative shall request the completion of a standard AWQC Chain of Custody Form. Any delays in completing the form may incur charges.



### **Charges**

62. Field Services will incur charges as detailed in the Customer Service Request. The Customer Service Request is an estimate of likely charges which may vary depending on what is collected and the complexity of the work.

63. Charges will normally apply per location. Should more than 15 minutes be required at one location additional charges will apply proportionate to the time spent at that location.

64. Cancellation of Field Services less than 48 hours before collection will incur an administration charge.

65. All samples to be picked up by Field Services personnel must be available no later than 8:00am on the nominated day for pickup. Where this may not be possible specific details must be negotiated a minimum of two (2) weeks prior to the first sampling or pick up event. Any delays will incur charges.

66. If Field Services personnel attend a site as agreed with the customer and the customer is unavailable at that time, an attendance fee may apply.

67. Bottles and labels appropriately prepared for preservation can be provided where customers collect their own samples. A minimum notification of three (3) weeks is required to access this service.

### **Waterscope Specific Terms & Conditions**

#### **Provision of Services**

68. The Australian Water Quality Centre will provide access to the Web Browser based Waterscope product at its discretion and can revoke access to customers at any time without notification should it deem this necessary for security purposes.

69. SA Water provides access to Waterscope on the understanding that from time to time the system may be required to be off-line for various reasons. Users of Waterscope will be notified by email in advance no less than 24 hours before going off-line.

#### **Acceptance of Terms & Conditions**

70. Utilising the provided username and password for access to the Waterscope product constitutes acceptance of these Terms and Conditions.

### **Security**

71. All users of the Waterscope product accept that under no circumstances shall their username and password be provided to any person either in their own organisation, a third party or SA Water at any time or for any reason. Should administrators require external access to this account they will reset the password and notify the customer of the new password.

### **Charges**

72. Charges for the ongoing use of Waterscope will be detailed in writing and use of the supplied username and password will constitute acceptance of ongoing charges.

73. Training on use of the product will be provided when accounts are initially established. Further training courses required for new personnel or as a refresher for existing personnel may be charged at the AWQC trainer's hourly rate.

74. Charges may apply should non-standard reports be required. The charge will be presented to the customer in the form of a quote. Customers must formally accept the quotation before report preparation proceeds.

75. Ongoing changes to reports may also incur charges commensurate with the work required.

#### **Notification of Data Changes and Exceedance Notification**

76. Reports generated at a point in time will potentially become outdated within 15 minutes. The customer accepts that use of the data in each report is at their own risk. Should data change at any point in time, only the key account holder of the AWQC account will be notified by electronic mail that this

change has occurred. It is the responsibility of this customer to notify all parties (including third parties) with access to reports containing the changed data that the change has occurred.

77. The customer accepts responsibility for notifying the AWQC in writing two (2) weeks in advance should the electronic mail details change for this account holder or any other user of Waterscope within their organisation.

78. The AWQC accepts no liability for any electronic notification that once generated in the system fails to reach the customer for any reason whatsoever whether originating from SA Water's network system, or the customer's, or any party responsible in between. The customer is responsible for maintaining their own electronic mail service to ensure emails sent to notify of exceedances can be received.

79. An electronic mail message will be sent to the customer nominated as the key account holder should any analysis exceed a guideline value that AWQC has agreed to monitor on the customer's behalf.