AWQC

ANALYTICAL QUALITY CONTROL PROGRAMS

The Australian Water Quality Centre (AWQC) is dedicated to ensuring and responding to the public health requirements relating to the provision of water and wastewater services for communities in Australia and across the world.

Specialist water services

Ensuring public health

AWQC's AQC Program provides an independent third party check of the accuracy of your laboratory. Given the important operational decisions which are made on the basis of analytical laboratory results, it's important to have a program in place which assures the quality of your laboratory. Our AQC program has already provided considerable value to our clients in identifying analytical issues which would otherwise have gone undetected. Some of these issues have resulted in laboratory equipment being recalibrated or removed, modifying analytical methods and additional training of analysts.

So what's involved? AWQC provides you with AQC solutions containing analytes at known concentrations (see list of analytes below Figure 2). These are provided at whatever frequency you require. The solutions prepared are randomly chosen from a series of seven different concentration ranges so that each round of AQC solutions may differ from the previous batch. All solutions are checked, verified, bottled and labelled with the name of the solution only (the concentration is not indicated). These blind solutions together with a reporting sheet and a chain of custody form are provided for you to send to your laboratory along with your routine samples.

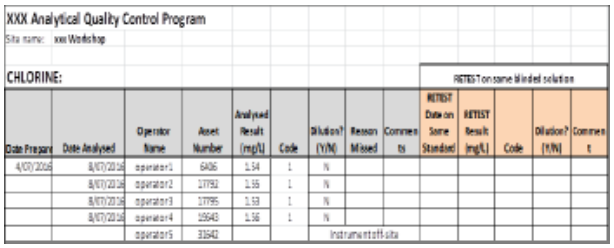
NATA WORLD RECOGNISED ACCREDITATION

bsi. ISO 9001:2015 Quality Management

Upon receipt of the AQC solutions, you return the completed chain of custody sheet to AWQC and distribute the AQC solutions to your laboratory. Most clients will provide these together with their routine samples. The AQC Solutions are then analysed in the same way as the other routine samples. Once you receive the AQC solutions results, these can be electronically submitted to AWQC.

AWQC's AQC laboratory carries out a comparison against the known concentrations and a report is issued advising you of the status of the results. If the difference between the measured result and the known result exceeds an acceptable level then a Code 2 "Warning" or a Code 3 "Out of Control" status is indicated. Repeat AQC solutions can also be provided for rechecking.

The AQC Program can be as simple or as complex as the client wants for example the most simple program we offer is the Chlorine Program where depots are sent blinded Total Chlorine samples ranging in value from (0.5 mg/l to 8.0mg/L) either monthly or fortnightly and their results are coded as either a code 1 , code 2 or code 3. And the results send back within 48 hours in the form of a spreadsheet (Figure 1).



XXX Analytical Quality Control Program

Site name: xxx Workshop

CHLORINE:

RETEST on same blinded solution

Date Prepare	Date Analysed	Operator Name	Asset Number	Analysed Result (mg/L)	Code	Dilution? (Y/N)	Reason Missed	Comments	RETEST Date on Same Standard	RETEST Result (mg/L)	Code	Dilution? (Y/N)	Comment
4/07/2016	8/07/2016	operator1	6406	1.54	1	N							
	8/07/2016	operator2	17792	1.55	1	N							
	8/07/2016	operator3	17795	1.53	1	N							
	8/07/2016	operator4	15643	1.56	1	N							
		operator5	31642			Instrument off-site							

For Water Treatment plants or desalination plants the testing can be more complex and can include blinded samples for total chlorine, turbidity, pH, colour and fluoride to name just a few. More complex testing is usually sent out to the clients on a monthly or three monthly basis. It's your choice.

The results can either be reported as an xls spreadsheet or as a pdf see attached Figure 3. We can tailor the reporting to your needs with Trending graphs such as those shown below issued with the reports (Figure 4). The analytes available and the volumes that AWQC are able to send out to our clients are attached in Figure 2

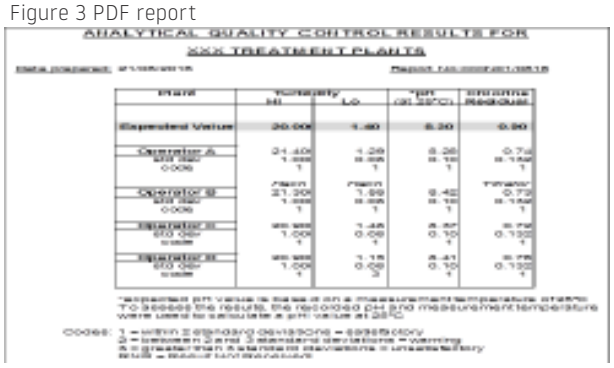
Important Information Requirements:

- Analytes required
- Preferred concentration ranges
- Required sample volume
- Frequency of AQC samples required

Figure 2 Common analytes included in AQC program

Common analytes included in AQC program		
Analytes	Typical Range	Volume (mL) per plant
Total Alkalinity	29 - 112 mg/L	250
Total Chlorine Residual - Low	0.5-2.5 mg/L	500
Total Chlorine Residual - High	2.5-8 mg/L	500
Free Chlorine Residual	0.5-2.5 mg/L	500
True Colour - Low	6.4 - 9.6 HU	250
True Colour - High	32-48 HU	250
Electrical conductivity	624-858 uS/cm	250
pH	7.0-9.0	250
Total Hardness	52.92-145.5 mg/L	250
Turbidity	0.5-2.0 mg/L	250
Free Ammonia	0.1-0.5 mg/L	250
Total Aluminium	0.2-1.0 mg/L	250
Total Iron	0.2-3.0 mg/L	250
Total Manganese	0.2- 1.0 mg/L	250
Fluoride	0.6-0.8 mg/L	250
N & P containing pesticides	various ug/L	1500
Chlorinated Pesticides	various ug/L	1500
Trihalomethanes	various ug/L	60

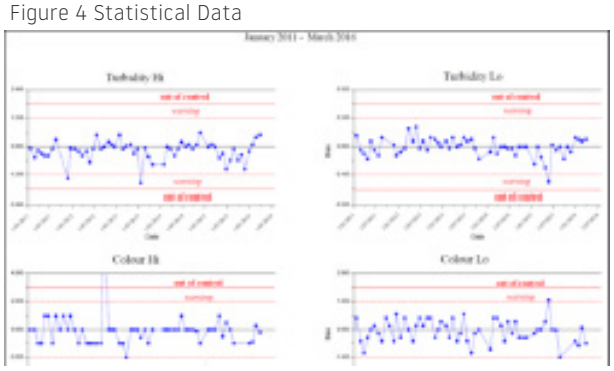
Figure 3 PDF report



ANALYTICAL QUALITY CONTROL RESULTS FOR

XXX TREATMENT PLANTS

Figure 4 Statistical Data



So where to from here? If you would like to join our AWQC AQC program the first thing you have to do is choose the tests that you would like to run from the list above. Let us know the typical concentration of your samples and what frequency of testing you need and we will send you back a formal quote. If you have any questions or concerns please contact AWQC On 08 7424 1514.

Call us on 1300 653 366
awqc.com.au

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