AWQC

SAMPLING GUIDE

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

Sample Method and Equipment

Before sampling it is important to consider

- safety
- sample equipment
- repeatability

Safety

Ensure that the chosen sample site is not a safety risk

Sampling equipment

Depending on the chosen site it may be necessary to use a sampling rod or even a bucket on a rope providing it is safe to do so

A sampling rod can be any device which firmly holds a bottle to enable a greater reach. The simpler the design the better, as it would house less possible contaminants

Repeatability

The chosen site should be representative of the area you are sampling. For example, an area that is flowing is more representative than a still backwater. The site, providing it is safe, should be easily accessible and clearly marked to enable future sampling from the same location to ensure consistency of results.

NATA
WORLD RECOGNISED ACCREDITATION

bsi. ISO 9001:2015 Quality Management

Sampling Method

By far the easiest method of sample collection is by hand. Provided it is in no way a safety risk, bottles can be filled by hand directly from the source. It is preferable to wear sterile gloves while collecting samples to prevent possible sample contamination as well as for personal safety and cleanliness.

The technique for sampling by hand is to direct the mouth of the bottle towards the flow of the sample source. If there is no noticeable flow then the bottle should be filled while slowly moving the bottle away from the hand (as the hand may contain possible contaminants ie. Sun-creams, oils, bacteria).

Samples should be filled from below the surface to avoid surface scums and floating particles, but not too low in that sediment from the bottom become stirred and enter the sample.

If it is too difficult to sample by hand then a sampling rod or bucket can be used (refer below for further information).

Bacterial Sampling Method

Bacterial sampling requires special sampling techniques. The bottle supplied by the AWQC will have a foiled cap to prevent possible contamination of the lid through touch (as fingers contain vast amounts of bacteria).

When bacterial sampling using a sampling rod, the rod must be decontaminated by flame torch. Bacterial samples require an air gap.

Care should be taken while filling the bottle to prevent any possible contaminants from the hand or equipment, from entering the sample.

The foiled lid should always be kept facing toward the ground while taking sample.

Dust particles contain bacteria so dusty situations should be avoided.

The sample should be filled quickly to allow minimal exposure to dust and other contaminants in the air.

Decontamination of equipment

If a sampling rod or bucket is to be used for sample collection, they must be decontaminated.

A good clean bucket should be rinsed at least twice in the sample source prior to sampling. The sample should then be transferred from the bucket directly into a bottle.

A sampling rod should also be rinsed in the sample source prior to sampling. For bacterial sampling the sampling rod needs to be flamed (usually by a special flame torch) to destroy any bacteria which could possibly enter the sample while using the rod.

A bucket should not be used (is not preferable for use) when sampling for bacteria.

Bottle Requirements

- For basic chemical analysis a clean/new 600ml or 1.25lt plastic bottle can be used. Preferably a 1.25 litre bottle as this allows for more chemical tests.
- If a new bottle is not available then a spring water bottle can be used. Coke or soft drink bottles are not acceptable as they adsorb chemicals from the soft drink which could then leach into samples.
- Thoroughly rinse the spring water bottle before use
- Bottles should be filled with no air gap. The bottle can be squeezed slightly while screwing on the cap to remove all air gaps. The samples should then be iced or chilled to 4 degrees Celsius and delivered to AWQC as soon as possible.
- Pesticide sampling requires a glass 1 litre bottle or jar thoroughly rinsed. If the bottle or jar has a plastic lid then a piece of alfoil can be placed over the mouth of the bottle/jar before screwing on the lid (this prevents the plastic from absorbing chemicals from the solution).
- Bottles should be filled with no air gap and then iced or chilled to 4 degrees Celsius and delivered to AWQC as soon as possible.
- **Biological samples** (living organism samples) require a plastic 600ml or 1.25lt bottle.
- Bottles should be filled with an air gap to allow organisms to breathe. Samples should then be iced or chilled to 4 degrees Celsius and should be delivered to AWQC within 24 hours of collection.
- **Microbiological samples** (ie. Bacteria, E.coli) require a sterilised and dosed 600ml bottle which can be supplied by the AWQC upon request. Samples should then be iced or chilled to 4 degrees Celsius and should be delivered to AWQC within 24 hours of collection.

Labelling

After each sample is collected it should be adequately labelled. As a minimum the label should contain the date, time, site and the name of the collector. An ideal label would be a small card containing this information which would then be attached to the bottle with a piece of string. It can be protected from moisture by sealing in a plastic bag.

Packaging

- An esky is the ideal package to transport samples. Samples should be packed standing upright within the esky to prevent contamination from a possible poorly sealing lid.
- Bacteriological samples should be double bagged to keep them separate from other bottles and to ensure no cross contamination.
- Crushed ice is ideal for the packing and cooling of samples. Ice bricks can also be used.
- Ideally samples should be packed in quite tight or in a manner to prevent them from falling over during transit. Glass bottles should be wrapped in bubble wrap.
- The esky lid should be taped so that it does not come loose.
- The esky should be appropriately labelled and eskies containing glass bottles should be labelled as fragile.
- Paper work detailing customer contact information and analytical requirements should be sealed in a plastic bag and forwarded with samples to the Australian Water Quality Centre, Customer Service Unit, 250 Victoria Square, Adelaide.
- The AWQC can provide customers with appropriately dosed sample containers, bottles, bags and eskies if given adequate notice.

Call us on 1300 653 366
awqc.com.au

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