



**National Water Quality Laboratory
Pakistan Council of Research in Water Resources**

WATER SAMPLING PROCEDURE FOR MICROBIOLOGY TESTING

Sample Bottles

- Sampling bottles issued by NWQL Customer Service Section.
- Pre-sterilized sampling bottles of at least 100-500 ml capacity made of pre-sterilized disposable/autoclavable plastic.
- Prior to sampling all bottles should be checked for physically defects i.e. leakage etc

Dechlorination

1% of 0.1 ml sodium Thio-Sulfate under aseptic condition is added in sampling bottles right at sampling time for de-chlorination purpose. This chemical neutralizes any residual chlorine and prevents continuation of bactericidal action during sample transit.

Key points: Preventing Contamination

Contamination must be avoided during the sampling procedure as 92% error comes from sampling, 7 % errors from wrong sampling transportation and 1% from laboratory practices. Following points may be considered to avoid contamination during sampling:

- Sampling points may often introduce contamination and therefore disinfection or flushing may be required to obtain a representative sample.
- Never touch the neck of the bottle, or inside the lid. When filling the bottle, the lid should not be placed on surface, but remain in the hand.
- The sample bottle should not be rinsed out prior to filling.
- The flow rate of the tap should not be changed during sampling as this may dislodge bacterial films inside the tap.
- A small air gap should be left in the bottle.
- Once the bottle is filled and lid replaced the sample should be placed in an ice box for transfer to the laboratory/testing point in field.
- If accidental contamination is suspected then the sample should be discarded and taken again using a fresh container.

SAMPLING PROCEDURE

Step One

Spray spirit on your hands up to arms for disinfection purpose.

Step Two

Remove any attachments from the tap such as pipes, filter etc. open the tap for 5 minutes to flush out the standing water, close the tap and clean with tissue paper. Spray a small quantity of spirit on surface of tap and flame it with match stick and let it cool down.

Step Three

After flaming, open the tap again to turn the water down to thin stream (about the width of a pencil) and let it run for one minute

Step four

To avoid contamination while taking the sample, hold the bottle near the bottom with one hand, hold the top of the cap with other, then unscrew the cap. Do not place the cap on the ground. Sampling will be more reliable if performed near flame.

Step Five

Hold the bottle under the stream of water, being careful not to let the bottle touch the sample tap. Fill the bottle to the neck (leave 1" from top) but do not allow it to overflow. Remove the bottle from the water flow and replace the cap.

Step Six

Label the bottle with permanent marker and keep it in insulated ice box having sterilized coolants (under controlled condition of 4 °C). Sample should be delivered to laboratory as soon as possible.