Surveillance of drinking water quality is defined as the continuous and vigilant public health assessment and overview of the safety and acceptability of drinking water supplies (WHO, 1976). Ministry of Urban Development (MoUD) insists carrying out routine water quality management and surveillance practices to ensure safe water supply to consumers.

**Current status of water quality surveillance in urban Gujarat**

- **Water quality tests performed by ULBs in Gujarat**

  Smaller municipalities such do not undertake routine testing of water samples for RC, chemical or bacteriological analysis.

  - **Jethpur**
    - **Source:** NA
    - **WTP:** No Testing
    - **WDS:** No Testing
    - **Consumer end:** No Testing

  - **Kathial**
    - **Source:** NA
    - **WTP:** No Testing
    - **WDS:** No Testing
    - **Consumer end:** No Testing

  - **Lathi**
    - **Source:** NA
    - **WTP:** No Testing
    - **WDS:** No Testing
    - **Consumer end:** No Testing

- **Mixing bleaching powder at outlet of treatment plant is a standard practice. Residual chlorine is the only quality test performed somewhat regularly.**

  Water quality field test kits provided by Water and Sanitation Management Organization (WASMO) are not being used as most ULBs have not replenished the sample reagents included in the kit.

- **Locations and frequency of water quality tests**

  - **Jethpur**
    - **Source:** NA
    - **WTP:** No Testing
    - **WDS:** No Testing
    - **Consumer end:** No Testing

  - **Kathial**
    - **Source:** NA
    - **WTP:** No Testing
    - **WDS:** No Testing
    - **Consumer end:** No Testing

  - **Lathi**
    - **Source:** NA
    - **WTP:** No Testing
    - **WDS:** No Testing
    - **Consumer end:** No Testing

The purpose of Standard Operating Procedure (SOP) is to establish a uniform procedure for routine collection and testing of water samples for the purposes of drinking water quality monitoring.
Standard operating procedure (SOP) for routine water quality surveillance

**Procedure**
1. Identify essential water quality tests to be carried out
2. Identify sampling locations
3. Establish a sampling regime
4. Collect samples on site
5. Test samples on site or send samples to laboratories
6. Maintain a database of water samples collected and test results
7. Take remedial measures in cases of failure of sample

**Essential tests to be carried out**
- Physical and preliminary bacteriological tests on site
- RC test on site
- Chemical and bacteriological tests in state accredited laboratories

**Locations for water sampling**
- At ground water source if water directly supplied to consumers
- At river/lake/dam (avoid backflows and eddies)
- Own surface water source
- Outlet of WTP
- Inlet of sump
- Consumer end
- Purchase raw/ treated water

**Recommended water sampling regime**

<table>
<thead>
<tr>
<th>Source</th>
<th>Physical</th>
<th>Residual Chlorine</th>
<th>Bacteriological</th>
<th>Chemical</th>
<th>Minimum number of Samples</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>At source</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ground water</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tubewell/ Frenchwell/ Forestwell (if drinking water is directly supplied to consumer end, chlorine dosage needs to be added)</td>
<td>Quarterly</td>
<td>Daily</td>
<td>Quarterly</td>
<td>Quarterly</td>
<td>At each tubewell</td>
</tr>
<tr>
<td>Handpumps</td>
<td>Twice a year</td>
<td>-</td>
<td>Twice a year</td>
<td>Twice a year (in summers and rainy season)</td>
<td>At each handpump</td>
</tr>
<tr>
<td><strong>Surface water</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raw Water: Rivers/ Infiltration wells/Lakes/Dams/Canal</td>
<td>Daily</td>
<td>-</td>
<td>Weekly</td>
<td>Daily</td>
<td>One per source</td>
</tr>
<tr>
<td><strong>At Water Treatment Plant</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outlet of WTP</td>
<td>Daily (Turbidity Only)</td>
<td>Hourly during supply time</td>
<td>Weekly</td>
<td>Daily</td>
<td>One per source</td>
</tr>
<tr>
<td><strong>At Water Distribution System</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inlet of main sump/ Ground level Storage Reservoir/Elevated Service Reservoir</td>
<td>Daily</td>
<td>Daily</td>
<td>Weekly</td>
<td>Monthly</td>
<td>Each WDS</td>
</tr>
<tr>
<td><strong>At Consumer End</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standpost</td>
<td>Daily (Turbidity only)</td>
<td>Daily</td>
<td>Monthly</td>
<td>Once an year</td>
<td>At 5-10 locations from each WDS zone for municipalities and 1 per 2500 households in corporations. During monsoons or a disease outbreak, number of samples should be increased</td>
</tr>
<tr>
<td>Consumer End</td>
<td>Daily (Turbidity only)</td>
<td>Daily</td>
<td>Monthly</td>
<td>Once an year</td>
<td></td>
</tr>
</tbody>
</table>

**Sample collection and handling**

The SOP provides clear step-by-step instructions for sample collection on site, storage and data recording.

PAS Project is being implemented by CEPT University in partnership with UMC and AIILSG. To know more about the PAS Project, please visit www.pas.org.in