

## Overview of SCDES's Statewide Ambient Surface Water Quality Monitoring Program

The South Carolina Department of Environmental Services conducts its Ambient Surface Water Monitoring Program using two complementary approaches: a long-term Base Network and a rotating Statistical Survey Network.

Base Sites are sampled monthly, year-round at over 240 fixed monitoring locations statewide, typically positioned near the downstream end—or pour point—of HUC-10 watershed units to capture representative water quality conditions.

The Statistical Survey component enhances this framework through a probability-based design that selects a new set of 90 randomly chosen sites each year, enabling statistically valid assessments of statewide water quality while expanding coverage to areas not routinely monitored.

Across both networks, SCDES collects an extensive suite of surface water indicators, to include:

- **Monthly field data collection:** depth, air temperature, water temperature, dissolved oxygen (DO), pH, and specific conductance
- **Monthly monitoring (May–October):** chlorophyll and microcystins (cyanotoxin) in lakes
- **Monthly laboratory analyses:** turbidity, 5-day biochemical oxygen demand (BOD<sub>5</sub>), alkalinity, ammonia as nitrogen (NH<sub>3</sub>-N), total Kjeldahl nitrogen (TKN), nitrate/nitrite as nitrogen (NO<sub>3</sub>/NO<sub>2</sub>-N), and total phosphorus as phosphorus (TP)
- **Quarterly analyses:** total suspended solids (TSS), hardness, and metals in water including cadmium, chromium, copper, iron, lead, manganese, nickel, zinc, and mercury.
- **Monthly bacteriological monitoring:** E. coli

Together, these coordinated efforts provide a comprehensive, scientifically robust picture of long-term trends and statewide water quality conditions.

As noted above, SCDES's Ambient Water Quality Monitoring Program is structured to capture water quality data at HUC-10 watershed pour points. As such, SCDES's monitoring program monitors river and stream waters that receive effluent from point source discharges.