

## INTENSIVE INVESTIGATIONS

If a beneficial use impairment is identified or suspected, then all appropriate state agencies will be alerted and an investigation will be initiated to confirm if a beneficial use impairment is occurring. If routine monitoring cannot definitively identify a threat or impairment, then an intensive study will be undertaken. If impairment is positively identified, the source of the impairment will be identified if possible. Potential causes of beneficial use impairment include but are not limited to; improper beneficial use or criteria (Oklahoma Water Resources Board jurisdiction), point source problems (Oklahoma Department of Environmental Quality or Oklahoma Department of Agriculture, Food & Forestry), non-point source problems (Oklahoma Conservation Commission, Oklahoma Department of Agriculture, Food & Forestry, Oklahoma Corporation Commission, or Oklahoma Department of Environmental Quality), oil and gas contamination (Oklahoma Corporation Commission), agricultural activities (Oklahoma Department of Agriculture, Food & Forestry), or mining activities (Oklahoma Department of Mines). All monitoring activities undertaken will be cooperative in nature with the agency with statutory authority assuming the lead role for intensive monitoring. Other entities (i.e. tribal or governmental units outside of Oklahoma) will be involved as appropriate. All intensive-monitoring activities will be consistent with and driven by the Water Resources Board OWQS and OWQS Implementation Plan.

The latest revisions to the Oklahoma Water Quality Standards states that an intensive monitoring program should be conducted on waters identified as nutrient-limited. The nature of the intensive monitoring is not explained in great detail and it is not envisioned that monies from the Beneficial Use Monitoring Program would be used to conduct these intensive studies. The intent of the intensive monitoring task of the BUMP is to work in priority areas identified by other entities, be they local, state, or federal. Priority areas may be a geographic area or may be a specialized water quality variable or indicator not normally included in the monitoring program (i.e. fish collections for toxics analysis or collection of other biological organisms). It is still the intent of the Water Resources Board to use the intensive monitoring monies for short-term, high priority areas identified by the Water Resources Board or other state/federal environmental agencies.

To date, the OWRB has used BUMP monies in combination with federal Clean Water Act Section 106 and Section 104(b)3 dollars to conduct intensive surveys on water bodies in various parts of the state. These investigations are normally built around permanent monitoring stations and may be more spatially, temporally, and parametrically intensive than traditional BUMP sampling. For example, pesticides, which are not a normal part of the BUMP parametric coverage, are collected at some of the sites. Also, a BUMP station may be on a segment that is over 40 miles in length. These investigations create several stations along the segment and compare results from the various stations to determine if the segment has uniform water quality. For a list of these projects and a copy of the report, **please contact the Oklahoma Water Resources Board/Water Quality Programs Division at (405) 530-8800.**

## **LITERATURE CITED**

- Hounslow, A.W., 1995, Water Quality Data Analysis and Interpretation: Lewis Publishers, Boca Raton, FL.
- Mueller, D.K., Hamilton, P.S., Helsel, D.R., Hitt, K.J., and Ruddy, B.C., 1995, Nutrients in Ground Water and Surface Water of the United States--An Analysis of Data Through 1992: U.S. Geological Survey Water-Resources Investigations Report 95-4031, 74 p.
- Oklahoma Department of Tourism and Recreation. "Oklahoma Statewide Comprehensive Outdoor Recreation Plan - This Land is Your Land". 1987. 216pp.
- Oklahoma Water Resources Board. "Oklahoma Water Atlas". May 1990. 360pp.
- Oklahoma Water Resources Board. "Update of the Oklahoma Comprehensive Water Plan 1995". February 1997. 148pp.
- Oklahoma Water Resources Board. "Use Support Assessment Protocols". December 2002-2003. OAC 785:46
- United States Environmental Protection Agency. "The Lake and Reservoir Restoration Guidance Manual". August 1990. 326pp.
- Wetzel, Robert G. "Limnology – Second Edition". 1983. 767pp.