

WATER AUDITS

EPD Guidance Document

August 2007

**Developed by the Georgia Environmental Protection Division (EPD)
To support the “Coastal Georgia Water and Wastewater Permitting Plan for
Managing Saltwater Intrusion”**

This guidance document is principally intended for entities in the 24-county area of Georgia’s coast addressed in the “Coastal Georgia Water and Wastewater Permitting Plan for Managing Saltwater Intrusion”, located in Sub-Regions 1, 2 and 3, that are:

- Private Industrial Transient and Non-Transient Non-Community Water Systems (TNCWS and NTNCWS) with an Operating Permit and a Water Withdrawal Permit; or
- Private Industrial Transient and Non-Transient Non-Community Water Systems (TNCWS and NTNCWS) with ONLY an Operating Permit.

It is designed to guide the development and implementation of a water audit program for industrial or small commercial water system permittees, who are required to perform water audits as a condition of their permit.

When to use this guidance document: For permittees described above using water derived from the Upper Floridan aquifer in the coastal counties of Georgia, a special condition of all new or modified withdrawal permits will be to perform an audit of the facility’s water system and identify locations where practices can be employed to conserve water. A copy of the audit’s findings along with an acceptable water conservation implementation schedule must be submitted to the appropriate EPD District Office (either Brunswick or Savannah) for concurrence no later than 18 months from the permit issue date.

How to use this guidance document: This guidance document mainly relies on water audit procedures published by well-established outside institutions. Part 1: is a brief description of water audits. Part 2: consists of water audit spreadsheets and forms published by the American Water Works Association (AWWA). These forms are also available in spreadsheet format at <http://www.gadnr.org/cws/> , and must be completed and submitted to EPD as part of the audit report.

EPD Contact: If you have any questions, or require additional information, please contact the EPD Drinking Water Program, at 404-656-4807. As the July 2006 Coastal Permitting Plan is implemented, EPD will welcome feedback from permittees regarding this guidance document.

ESSENTIALS OF WATER AUDITS

A water audit is an accounting procedure that monitors where and how much water enters and leaves a water system. This allows the assessment of current usage, provides data needed to reduce water and revenue losses, and allows forecasts of future water needs. The principal purpose of a water audit is to accurately determine the amount of unaccounted for water (UAW) in a water system. This includes water loss through leaks, inoperative system control controls (such as blowoff valves), and unmetered sources such as wells or hydrants.

Unaccounted for water must be calculated based on verified supply and consumption records, and various estimated usage figures (where necessary). A water audit is thus heavily dependent on accurate metering data, which is dependent on meter accuracy. Because of this, meter testing is critical to a successful water audit.

Water audits typically require an accounting of the following quantities:

- Total water supply
- Total water consumption (metered and un-metered)
- Total unaccounted for water, water losses (apparent and real), leaks, etc.
- Percentage of unaccounted for water
- Metering statistics, such as brand and model, beginning and ending readings, etc.
- Meter accuracy
- Corrections for meter inaccuracy
- Operational efficiency
- Financial indicators (total revenue and costs, revenue lost, etc.)
- Other, depending on individual state requirements

After completion of a water audit, system managers can identify and target system elements for specific conservation practices to reduce water loss and un-accounted for water. Water audits are widely practiced across the U.S, and some states require them as a permit condition. Several excellent resources are available to provide more information on water audits. The Southwest Florida Water Management District provides detailed guidance and information on how to perform water audits, available on line at www.swfwmd.state.fl.us/conservation/audits/files/worksheet.pdf. The New Mexico Office of the State Engineer also has an on-line guide to water conservation, including a detailed discussion of water audits available at <http://www.ose.state.nm.us/water-info/conservation/pdf-manuals/cii-users-guide.pdf>. The American Water Works Association (AWWA) publishes a manual (Manual #36) entitled “Water Audits and Leak Detection”. It can be ordered on line at www.awwa.org. The on-line AWWA companion spreadsheets (available at <http://www.gadnr.org/cws>) should be submitted as the central part of a coastal permittee’s water audit findings within 18 months of the permit issuance date.