

GEORGIA'S SOURCE WATER ASSESSMENT AND PROTECTION PROGRAM FOR PUBLIC DRINKING WATER SOURCES

Barbara Stitt - Allen

AUTHOR: Environmental Specialist III, Drinking Water Compliance Program, Water Resources Branch, Environmental Protection Division, Department of Natural Resources, 205 Butler Street, SE, Suite 1362, East Tower, Atlanta, Georgia, 30334.

REFERENCE: *Proceedings of the 1999 Georgia Water Resources Conference*, held March 30-31, 1999, at the University of Georgia, Athens, Georgia. Kathryn J. Hatcher, editor, Institute of Ecology, The University of Georgia, Athens, Georgia.

Background. The Implementation Plan for Georgia's Source Water Assessment and Protection Program was submitted to The US Environmental Protection Agency (USEPA) on January 29, 1999 by the Georgia Environmental Protection Division (EPD). The Implementation plan outlines the strategies and procedures the State of Georgia will use to meet the requirements of the Source Water Assessment and Protection Program (SWAPP). The following paper is a highlight of the major points of the State's program.

INTRODUCTION

The 1996 Amendments to the Federal Safe Drinking Water Act (SDWA) brought about a new approach for ensuring clean and safe drinking water served by public water supplies in the United States. Building upon the past strengths of the Surface Water Treatment Rule, expansion of water monitoring, and other compliance measures, the U. S. Environmental Protection Agency is now advocating prevention of contamination as an important tool in the protection of public water supplies.

In order to implement prevention and protection strategies, an assessment plan of potential pollution sources upstream or near individual drinking water supply sources must be first conducted. Each of these assessment plans must include delineation of watershed and wellhead protection areas of public drinking water sources, an inventory of potential sources of contamination within the delineated assessment areas, determination of water source susceptibility to significant potential contaminants within the assessment area and the results to be made available to the public served by the public water systems.

Existing State Programs

The State of Georgia has numerous existing initiatives for protection water resources. The SWAPP assessments

plans for groundwater sources will incorporate aspects and data from these other programs including the Wellhead Protection Program, Drinking Water Monitoring Waiver Program, Groundwater Under the Influence of Surface Water Program and the Comprehensive State Groundwater Protection Program. The SWAPP assessments plans for surface water sources will incorporate aspects and data from the Watershed Assessment for Domestic Wastewater Systems (for NPDES discharge permit increases), Storm Water Management, Nonpoint Source Management Strategies, River Basin Management Planning, Environmental Planning Criteria for Water Supply Watersheds and the Erosion and Sedimentation Control Act.

ASSESSMENT ELEMENTS

Prioritization and Time Table. Georgia plans to meet USEPA's year 2005 goal by having 60 percent of the population served by community public water systems with Source Water Protection Programs in place. Georgia plans to meet this goal by concentrating SWAPP activities on surface drinking water sources in highly populated, urban areas and by accelerating the Wellhead Protection Program.

Assessments are currently in progress for groundwater sources. Local government, community groundwater source assessments, under the Wellhead Protection Plan, are scheduled for completion by December 2001. Non-governmental, non-transient groundwater source assessments are scheduled for completion by December 2002. Transient groundwater system assessments are scheduled for initiation by July 2003.

Assessments for surface water sources will be completed over a three year period following the River Basin Management Plan. The assessments for surface water intakes located in the Chattahoochee and Flint River basins are scheduled to begin in year 1999. The assessments for surface water intakes located in the Coosa,

Tallapoosa, and Oconee River basins are scheduled to begin in year 2000. The assessments for surface water intakes located in the Savannah, Ogeechee, Ocmulgee, and Tennessee River basins are scheduled to begin in year 2001.

Delegation of Responsibilities. Since groundwater and groundwater under the influence of surface water (GWUDI) assessment programs are already established through the Wellhead Protection Program, the Waiver Programs and the Groundwater Under the Influence Programs, the EPD's Geologic Survey Branch and Drinking Water Program staff will conduct assessments for groundwater sources.

Large surface water systems, which supply water (directly or through wholesale) to a population of 50,000 or more, will be delegated the responsibility of developing and implementing a Source Water Assessment and protection Plan. EPD will assist these systems by providing some funding, technical assistance and flexibility in completion of the SWAPP.

Surface water systems, which supply water (directly or through wholesale) to a population less than 50,000, will have the assessment done by EPD using the minimum guidelines. However, EPD expects full cooperation and assistance from the surface water system in conducting and updating source inventories and susceptibility determinations.

Contaminants of Concern. The contaminants of concern are all regulated and unregulated contaminants that fall under the Georgia Rules for Safe Drinking Water, Constituents that could interfere with treatment and non regulated pathogens such as *Cryptosporidium parvum* and *Giardia lamblia*

SURFACE WATER ASSESSMENTS

The entire watershed that drains to a surface drinking water intake is considered the Source Water Protection Area (SWPA). However, USEPA realizes that for the purpose of inventorying potential pollution sources and determining susceptibility the State can identify smaller areas or segments of the watersheds and buffer zones for a cost and time effective analysis. EPD has decided to utilize these smaller Assessment Areas to identify and inventory the potential pollution sources, determine susceptibility and possibly initiate protection approaches.

Based upon recommendation from a technical subcommittee, the assessment area is the area 20 miles

upstream from an intake divided into three phases based upon 5, 10 and 20 miles from the intake. All rivers and creeks will have a 1/4 mile buffer on each side of the main stem of the river bank. This buffer area will be the assessment area. The intensity of pollution source inventorying will decrease the further upstream based upon the mileage phases. The approach for assessments on reservoirs will be to inventory potential sources of contaminants within a 1/2 mile buffer around the reservoir, or if no or little mixing occurs, the embayments that impact their source water.

Significant potential pollution sources will include the following EPD permitted facilities: NPDES Permits, Land Application Systems (LAS), Surface Mines, Solid Waste Landfills, Hazardous Site Inventories, Hazardous Waste Generators, SARA lists including the Toxic Release Inventory, and any other non-permitted sources (or landuse) deemed significant by the public water system.

Susceptibility is the potential for a Public Water System to draw water contaminated by inventoried sources at concentrations that would pose concern. The susceptibility determination take into account the "toxicity, environmental fate and transport" of the contaminant and the "location, likelihood of release and effectiveness of mitigation" for the potential pollution sources. Also additional factors are included for landuse. All of these factors are weighted in a high, medium and low ranking for each potential pollution source and overall ranking.

Groundwater and Groundwater Under the Influence of Surface Water (GWUDI) Assessments

Georgia's Wellhead Protection Program (WHPP), the Monitoring Waiver Initiative and the Groundwater Under the Influence Program are EPA approved programs designed to assess and identify potential pollution sources of underground drinking water supplies (wells and springs) for community and non-community groundwater sources.

EPD will use both the wellhead protection management zones and the monitoring waiver review areas as the delineated assessment area for groundwater. For (GWUDI) sources an additional assessment area based upon the watershed will be used. EPD will inventory obvious potential pollution sources within the delineated assessment areas from the established Wellhead Protection Program list. All potential pollution sources found within the assessment area will be significant. Preliminary susceptibility will be based on the topographic location of the water system.

In subsequent iterations of the SWAP Plan, EPD will

determine the susceptibility of specific potential pollution sources to the individual wells based upon the water system's sampling history, the distance of the potential pollution source(s) from the well, the geologic setting of the well, and the well's likeliness to be influenced by surface water.

PROTECTION

Once assessments are completed, EPD expects information will be put to use in Source Water Protection Plans. The local governments who have completed or implemented their watershed protection plans (based upon EPD Rules for Environmental Planning Criteria, Section 391-16-.01 Criteria for Water Supply Watersheds, Section B) will satisfy most of the SWPP requirements. However, the public participation requirements will still need to be satisfied as well as any issues identified as part of the assessments.

EPD will attempt to identify ways that the appropriate party with authority can take the next logical step towards actual protections measures. Maximum flexibility is afforded to each local government and system owner to provide protection within the resources and schedules they recommend. EPD will incorporate into the system owner's operating permits as appropriate and only to the extent of legal authority to implement that is available to the system owner.

CONCLUSION

Currently the Georgia Source Water Assessment and Protection Implementation Plan is under review by USEPA. Based upon comments, some areas of the Program maybe modified. EPD expects the Program to be approved by Fall of 1999.