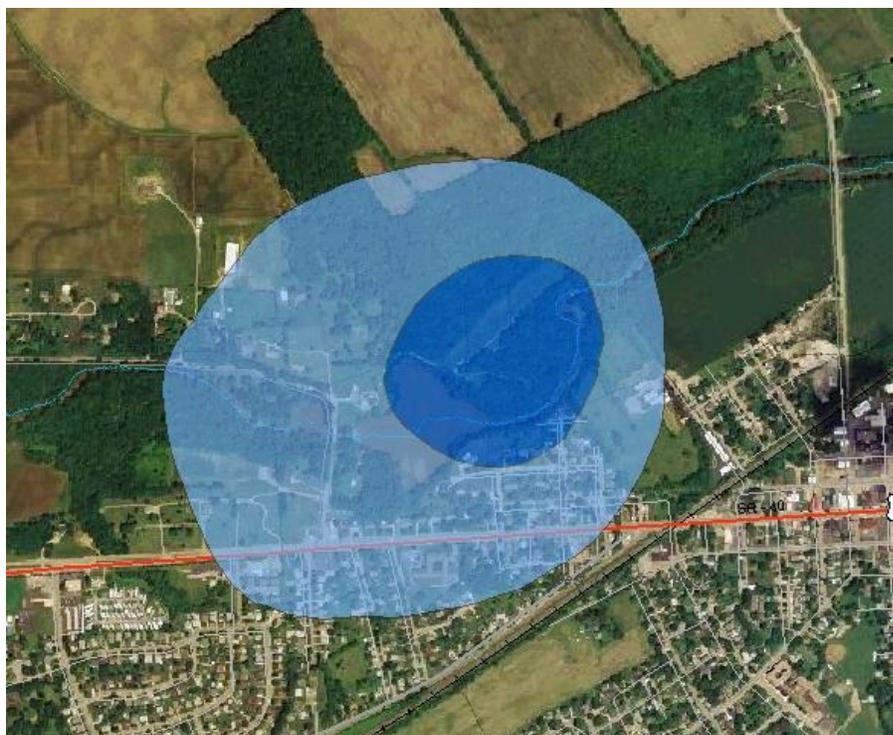

Division of Drinking and Ground Waters

**Drinking Water State Revolving Fund
Wellhead Protection Set-aside
Annual Report, Program Year 2007**



September 2007

Ted Strickland, Governor
Chris Korleski, Director

Ohio EPA utilized the Wellhead Protection Set-aside to fund activities specified in the Drinking Water State Revolving Funds Intended Use Plan for Program Year 2007 (DW SRF IUP). These funds were used to complete source water assessment and wellhead protection activities for public water systems using ground water; assist communities developing wellhead protection/source water protection plans, conduct source water protection education and outreach; provide technical assistance; and general administrative and information management support. This report summarizes the annual expenditures, goals and objectives of the Wellhead Protection Set-aside, and program accomplishments by Activity as listed in the DW SRF IUP for Program Year 2007.

A. Expenditures and Full Time Equivalent (FTEs)

Ohio EPA obligated approximately \$1,190,000 to fund the 11 full time equivalent staff and 2 part time interns to support implementation of the wellhead protection and source water assessment activities specified in Ohio's DW SRF Intended Use Plan for PY 2007.

B. Goals and Objectives

The goals and objectives for the Wellhead Protection Program for PY2007 were as follows:

1. Complete source water assessments for new public water systems;
2. Refine delineations in potential karst bedrock hydrogeologic settings;
3. Assess and conduct ground water quality investigations to evaluate potential contaminant sources impacting source water quality for water systems with contaminant concentrations near or exceeding a MCL;
4. Encourage and provide direct technical assistance to public water systems in development and implementation of source water protection plans;
5. Conduct general public outreach and education and disseminate source water assessments to public water systems and the public via a secure web site;
6. Document local source water protection implementation strategies through development of a tracking survey;
7. Collaborate with State environmental programs to develop and implement source water protection strategies; and
8. Provide general program support activities for staff.

C. Program Accomplishments

The Agency has completed source water assessment reports for all public water systems, except for recently activated public water systems. During PY 2007, Ohio EPA completed 85 final source water assessment reports.

Throughout PY 2007, the program has focused on promoting protective strategies, refining delineation criteria and re-delineating wellfields in karst geologic settings, developing education and outreach activities, conducting training workshops, providing direct technical assistance to public water system officials and QA/QC of the source water assessment information geographic information system databases. Staff provided on-site assistance to dozens of public water systems in development of local wellhead protection plans and conducted four county or regional protection planning workshops. Fifteen municipal protection plans were reviewed and 10 of these plans were endorsed by the agency. Finally, 56 non-municipal public water systems completed and returned a protective strategy checklist customized for their facility that was sent to them with their source water assessment report, on which they indicated which protective strategies they intend to implement to protect their source of water. As of June 30, 2007, a total of 1,184 such checklists had been received by the Agency.

Based on information submitted to U.S. EPA in October 2006, approximately 37% of all community water systems covering 40% of the population served are substantially implementing source water protection measures under the criteria described in Ohio EPA's program. Updated information will be

provided in October 2007 per U.S. EPA's Water is Safe to Drink Strategic Target F - Source Water Protection / Wellhead Protection reporting guidance.

D. Program Accomplishment by Activity

Specific accomplishments for each of the program activities identified in the PY 2007 DW SRF IUP are summarized in detail in the tables as follows:

Activity 1 - Complete source water assessments for new public water systems.

Proposed Outcome/Product

1. Complete source water assessment reports for new public water systems.
2. Review for endorsement assessment reports completed by public water systems.
3. Re-delineate and re-inventory source water areas, as needed.

Actual Work Completed

- Completed WHP/SWAP reports for public water systems using ground water.
 - 60 Delineations
 - 78 Potential Contaminant Source Inventories
 - 85 Final Source Water Assessment Reports

Supplemental Environmental Benefits

Mapped source water assessment and protection areas are incorporated into a statewide geographic information management system, which facilitates identification and association with other environmentally regulated activities.

Activity 2 - Refine delineations in potential karst bedrock hydrogeologic settings.

Proposed Outcome/Product

1. Re-delineate source water assessment areas and reports based on criteria in guidance

Actual Work Completed

- Completed new guidelines for delineating systems drawing water from karst aquifers.
- Conducted two dye-trace studies in Clark County (southwest Ohio) to support geologic interpretation and determine flow rates.
- Scouted a shallow karst area in northwest Ohio for sites to conduct dye-trace studies, to obtain better estimates of ground water flow rates in that aquifer.
- Re-delineated protection areas for four systems in central Ohio in accordance with new guidelines.

Supplemental Environmental Benefits

The dye-trace studies provided valuable hydrogeologic information about a

sensitive karst aquifer that had not previously been studied. This information can be used by other Ohio EPA programs and other agencies, such as the Ohio Department of Natural Resources and the U.S. Geological Survey. The revised guidelines will provide a more scientific basis for source water assessment delineations for public water systems using wells located in karst geology.

Activity 3 - Assess and conduct ground water quality investigations to evaluate potential contaminant sources impacting source water quality for water systems with contaminant concentrations near or exceeding a MCL.

Proposed Outcome/Product(s)

1. Statewide evaluation of water quality compliance data to establish priority public water systems
2. Study Plans
3. Sample Collection and Analysis
4. Summary Reports
5. Identify probable cause of contamination.

Actual Work Completed

- *Proposed Projects* - Developed a proposed project list based on an initial screening completed by District Office staff and a preliminary data analysis using public water system nitrate compliance monitoring data.
- *Number of Project Completed* - Due to other source water assessment

and protection priorities, only one project (Village of Shadyside) was conducted during PY 2007.

- *Village of Shadyside* - Source Water Protection staff collaborated with staff geologists in assessing and investigating the potential source(s) of increasing nitrate levels in the Village of Shadyside wellfield. A summary report for phase 1 of the investigation was completed which indicated elevated nitrate levels in the ground water within the 1-year inner management zone of the protection area. A Phase 2 was designed and completed during PY 2007 that documented shallow nitrate contamination within the 5 year time-of-travel. A final phase and summary report is planned for PY2008. Preliminary findings suggest the most probable sources of nitrate contamination are leaking sewer lines or inorganic fertilizers.

Activity 4 - Encourage and provide direct technical assistance to public water systems in development and implementation of source water protection plans.

Proposed Outcome/Product(s)

1. Local development of source water protection plans and local implementation of protective strategies.
2. Up to ten local/regional source water protection workshops, led by Ohio EPA.

3. Direct technical assistance to public water systems developing local source water protection plans.

Actual Work Completed

- Received 24 municipal Source Water Protection Plans for endorsement (ten of these in late May, 2007), reviewed 15 by June 30, 2007, endorsed 10 plans. See list in Appendix 1.
- Received 56 Source Water Protection Plan checklists from non-municipal systems.
- Returned certificates of recognition to 129 public water systems that had sent in Source Water Protection Plans (1,214 issued to date).
- Assisted in the development of source water protection planning at dozens of public water systems. This year District staff logged 107 individual meetings with public water system operators or local source water protection teams, where they provided information and guidance on developing a local source water protection plan. See list of public water systems in Appendix 2.
- Conducted one single-session source water protection workshop in October 2006 for public water systems in five northeast Ohio counties. This workshop was attended by five public water systems.
- Worked with Fairfield County to develop protection plans for eleven of its ground water systems via a series of meetings led by the county

and a consultant, and funded in part by a Clean Water Act Section 319 grant.

- Initiated three multi-session source water protection planning workshops in Jefferson County, Trumbull County, and Logan County (addressing a total of 13 systems). The workshops are targeted to local organizations, community officials and public water system operators. Eligible participants receive one contact hour per session (with 5 sessions planned), which are awarded upon submission of an endorsable protection plan.
- Supported and collaborated with the Ohio Rural Water Association (OWRA) Wellhead Protection and Source Water Protection Technicians in their efforts to assist public water systems developing protection plans.

Activity 5 - Conduct general public outreach and education and disseminate source water assessments to public water systems and the public via a secure web site.

Proposed Outcome/Product(s)

1. Continue development and maintenance of secure web page to access reports.
2. Document management.
3. Respond to technical assistance requests.
4. Update source water assessment and protection web pages.

Actual Work Completed

- Uploaded a secure web page, where users can view the SWAP assessments completed by Ohio EPA by logging in with a user name and password that is assigned by Ohio EPA's Central Office. The secure web page went online August 25, 2006 and had 218 registered users by June 30, 2007. The registered users are primarily environmental consultants, but also include state, local, and federal agencies, regulated communities, schools, and non-profit organizations representing 13 states and the District of Columbia.
- Continued to add new SWAP reports to the DDAGW intranet, where they are available to all Ohio EPA staff.
- Continued to QA/QC the statewide shapefile of Source Water Protection areas.
- Prepared and conducted ground water training in October 2006 at five regional workshops in support of the "Project SWEET" partnership with the Ohio Department of Natural Resources - Division of Soil and Water Conservation. Initiated in January 2005, Project SWEET created over 40 county/regional Source Water Environmental Education Teams (SWEETs) that provide education in ground water concepts and Source Water Protection. To date, the teams have reported 182 outreach events reaching over 18,000 Ohioans through a variety of venues.

- Wrote a four-page high-impact newsletter summarizing Source Water Protection accomplishments in Ohio during PY 2006, and posted it on the SWAP Web site. Positive comments have been received on the new report.
- Continued to update the SWEET Web page, fact sheet, and listserv to provide continued support and education to SWEETs, encourage statewide communication among the teams, and advertise the availability of teams to the general public. The web page can be accessed at the following address:
<http://www.epa.state.oh.us/ddagw/SWEET/index.html>
- Created a 20-minute DVD training video for the SWEET members, demonstrating the use of a sand-tank ground water simulator in conjunction with a Rainmaker module.
- Prepared and manned a Source Water Protection exhibit at the annual 3-day Farm Science Review in London, Ohio, which is targeted to the agricultural community. Demonstrating a sand-tank ground water simulator at this venue has proven effective in impressing upon growers the potential for agricultural chemicals to contaminate drinking water sources.
- The source water assessment and protection web pages were accessed an average of 656 times per month during the program year—an

increase of 31% over last program year.

- Responded to 586 technical assistance requests for site-specific maps showing locations of source water protection areas near regulated facilities—an increase of 37% over last program year. Average response time was less than two days.
- Responded to 136 technical assistance requests for site-specific maps showing locations of source water protection areas near proposed mining sites.

Activity 6 – Document local source water protection implementation strategies through development of a tracking survey.

Proposed Outcome/Product(s)

1. Develop and conduct survey.
2. Track and manage information

Actual Work Completed

- Sent out surveys to all municipal public water systems, requesting information on “most threatening sources” as well as information on the protective strategies being implemented at each system, barriers to implementation, and success stories.
- Entered the information into a survey tracking module that was added to the existing tracking program.

- Designed a series of reports to track progress of the project and summarize results
- By June 30, 2007 about 55% of the ground water systems had returned their surveys and 75% of the surface water systems. The deadline for survey return was extended to August 24, 2007, so these are not final figures.

Comment: Additional “measures of success” were listed in the PY2007 workplan as “the quality of the information returned” and “the ability to measure more accurately substantial implementation of local source water protection strategies”. We are just now starting to evaluate the information received and will be able to report more quantitatively on these measures at the end of PY2008.

Activity 7 – Collaborate with State environmental programs to develop and implement source water protection strategies.

Proposed Outcome/Product(s)

1. Development of regulations or guidance
2. Implementation of best management practices

Actual Work Completed

- Reviewed Ohio EPA Division of Surface Water draft Permit to Install for Land Application System regulations.

- Commented on Ohio EPA DDAGW draft new well siting guidance.
- Reviewed proposed Senate Bill 230 (revisions to Ohio Department of Agriculture CAFO program)
- Provided info to Ohio EPA Division of Solid and Infectious Waste Management (DSIWM) for revisions to OEPA policy on Epidemic Livestock Mortality Disposal.
- Conferred with DSIWM on potential prohibition of lime/alum sludge lagoons in SWAP areas
- Reviewed Ohio Department of Health Household Sewage Treatment System proposed regulations with regard to SWAP areas.
- Developed procedure for reviewing mine application notices near source water protection and assessment areas
- Reviewed Senate Bill 149 (modifying Ohio Revised Code regulating CAFOs)

Activity 8 – Provide general administrative program support for staff.

Proposed Outcome/Product

1. Federal reporting

Actual Work Completed

- Completed Program Year 2006 DW SRF Wellhead Protection Set-aside Annual Report, September 2006

- Provided general management and supervision to staff, completed annual report and internal director's quarterly reports; all staff performed time accounting procedures and provided support for accounting, budgeting and purchasing.
- Administrative staff provided general office support to program staff.
- Information management staff provided technical support for staff.
- SWAP program supervisor graduated from Ohio Certified Professional Managers program in April 2007.

Appendix 1 – List of Public Water Systems that Submitted a Source Water Protection Plan during PY 2007 (* Endorsed during PY 2007)

- Village of Amanda
- Village of Baltimore
- Village of Bremen
- Fairfield County Utilities
- Greene County – Southwest Regional PWS*
- Greenfield TWP Water District
- Jefferson Water & Sewer District*
- Village of Kalida
- Village of Lithopolis
- Village of Malta*
- Village of Millersport
- City of Pickerington
- Village of Pleasantville
- Village of Pomeroy
- Village of Racine*
- Ross County Water Company, Inc*
- Village of Shadyside*
- Village of Springboro
- Village of Sugar Grove
- Village of Syracuse
- Tupper Plains/Chester Water District*
- City of Wapakoneta*
- Village of Waynesville*
- Village of West Jefferson*

Appendix 2 – List of Public Water Systems that Ohio EPA Provided Direct Technical Assistance to during PY 2007

- Village of Andover Big Prairie Water Co.
- Berlin Water Company
- Big Prairie Water Co.
- Bloomfield Water Company
- Village of Brewster
- Village of Bridgeport
- City of Canal Fulton
- Village of Carrollton
- Village of Christiansburg
- Clark County Park Layne System
- Clermont County PWS
- City of Columbiana
- Village of Covington
- City of Cuyahoga Falls
- Village of DeGraff
- City of East Palestine
- Fairfield County Utilities
- Village of Garrettsville
- Geauga City Services Center
- Village of Glendale
- City of Harrison
- Village of Holloway
- City of Hudson
- Village of Jackson Center
- Village of Johnstown
- City of Kent
- Leading Creek Conservancy District
- Lebanon Correctional Institution
- Logan/Shelby County Workshops
- City of London
- Miami Conservancy District meeting
- Village of Malvern
- City of Marietta
- Village of Marshallville
- Village of Millersburg
- City of Munroe Falls
- Village of Martins Ferry
- Village of Middleport
- Village of New Paris
- Village of New Miami
- City of North Canton
- Village of N. Lewisburg
- OKI Regional Planning Agency Meeting
- Ohio Valley Farms
- City of Orrville
- Village of Ottawa
- Village of Piketon
- Village of Pomeroy
- Village of Silver Lake
- Village of Syracuse
- Trumbull County Workshops
- Village of Waynesville
- Village of South Bloomfield
- City of Wapakoneta
- Warren County Hamilton/Deerfield PWS
- Village of W. Jefferson
- Village of Wilmot
- Village of Yorkville