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Drinking Water State Revolving Fund Wellhead Protection Set-aside Annual Report Program Year 2011



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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 2011 (DW SRF IUP). These funds were used to complete source water assessment and wellhead protection activities for public water systems; assist communities developing wellhead protection/source water protection plans; conduct source water protection education and outreach; provide technical assistance; and general administrative and support information management. 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 (PY) 2011.

A. Expenditures and Full Time Equivalent (FTEs)

Ohio EPA obligated approximately \$1,100,000 to fund ten full time equivalent staff to support implementation of the wellhead protection and source water assessment activities specified in Ohio's DW SRF Intended Use Plan for PY 2011.

B. Goals and Objectives

The goals and objectives for the Wellhead Protection Program for PY2011 were as follows:

1. Complete source water assessments for new public water systems, revise previous delineations to address

changed pumping configurations or better information, and refine delineations in potential karst/shallow fractured bedrock hydrogeologic settings;

2. Assess and conduct source water quality investigations to evaluate potential contaminant sources impacting source water quality for water systems with contaminant concentrations near or exceeding a MCL;
3. Encourage and provide direct technical assistance to public water systems in development and implementation of source water protection plans;
4. Conduct general public outreach and education and disseminate source water assessments to public water systems and the public via a secure web site;
5. Collaborate with State environmental programs to develop and implement source water protection strategies; and
6. Provide general program support.

C. Overview of Program Accomplishments

During PY 2011, the program has focused on promoting protective strategies, conducting training workshops, providing direct technical assistance to public water system officials, developing education and outreach activities, completing source water assessment reports for new public water systems, re-delineating some of

the wellfields in karst geologic settings, developing and distributing a SWAP survey to approximately 750 community systems, and QA/QC of the source water assessment information geographic information system databases.

During PY 2011, 109 source water assessment reports were completed and mailed out. Of these, 35 were reassessments of protection areas in karst areas and 30 were revisions of earlier source water assessment reports due to new wells at existing wellfields, changed pumping rates, and other types of changes that warranted a revision of the earlier report.

Staff conducted multi-session source water protection planning workshops for the Village of Clarington, the City of Columbus, the City of Delaware, the City of Delphos, the Village of Middlepoint, the Monroe Water District, the City of Fremont, and the City of Cambridge.

In addition to the workshops, staff reported one or more meetings with 20 public water system operators or local source water protection teams, where they provided information and technical guidance on developing or implementing a local source water protection plan. Eighteen source water protection plans developed by municipal public water systems were received by the Agency during PY2011 and 16 of the plans were endorsed by the agency within that

timeframe. The Agency also received and accepted checklist-style protection plans from an additional 96 nonmunicipal systems (community and noncommunity). As of June 30, 2011, 43 percent of all community water systems covering 64 percent of the population served are substantially implementing source water protection measures under the criteria described in Ohio EPA's program.

Finally, staff responded to 429 technical assistance requests for site-specific maps showing locations of source water protection areas and any nearby waste or product management and storage facilities. Forty-one of these requests came from DDAGW's public drinking water inspectors; the remainder came from private consultants or other state agencies. They also reviewed 71 coal or industrial minerals mining applications for potential drinking water impacts.

D. Program Accomplishment by Activity

Accomplishments for each of the program activities identified in the PY 2011 DW SRF IUP are summarized below:

Activity 1 – Update source water assessments, as needed.

Proposed Outcome/Product

1. Complete source water assessment reports for new public water systems.
2. Revise previous assessments to address changed pumping configurations or better information
3. Revise assessments completed in karst areas.
4. Review for endorsement assessment reports completed by public water systems.

Actual Work Completed

- **Assessment Reports.** Completed 100 SWAP reports for public water systems using ground water, including assessments for 44 new wells, 30 revisions of prior assessments based on changed conditions and 35 redelineations for public water systems located in karst areas of southwest and central Ohio. Six redelineations completed by public water systems (through private consultants) were reviewed and endorsed.
- **New Well Sitings.** In addition to the four proposed products, SWAP staff assisted Drinking Water inspectors with siting 85 new wells, providing preliminary maps of the source water protection area with known potential contaminant sources shown. This preliminary mapping enables inspectors to observe required

setbacks from various potential contaminant sources.

Supplemental Environmental Benefits

Describing and mapping source water assessment areas enables other environmental programs to prioritize their own regulatory and outreach activities based on their regulated facilities' *proximity to public drinking water sources*. The inclusion of susceptibility evaluations in SWAP reports helps these other programs to further target their efforts based on *likelihood of ground water impacts*. The reports are used extensively by private environmental consultants—who access them directly through the password-protected web site--as a primary source of hydrogeologic information. They are also used extensively by other DDAGW staff for locating Class V wells in SWAP areas as well as for source designations of new wells, Hydrogeologic Sensitivity Assessments (for the Ground Water Rule), and—most recently--to locate salt piles in SWAP areas (see Activity 2).

Activity 2 – 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

- **Statewide Analysis.** Conducted GIS and aerial photo-based analysis of all the salt piles identified in SWAP reports (most dated 2003-2004), to identify the sites that warranted a site inspection, based on the appearance of the facility and susceptibility of the aquifer to contamination.
- **Site Inspections.** Conducted site inspections of 81 salt storage facilities in April and May, 2011. On this basis, ten facilities of concern were identified. During PY2012, public water systems near these facilities will be sampled for chloride levels, and outreach will be conducted to improve the facility or—ideally—move it out of the public water system’s source water protection area.
- **Summary Report.** Completed a report summarizing what was found during the site inspections, and documenting decisions for further action.
- **Camden Investigation.** Southwest District Office SWAP staff participated in numerous meetings

related to investigation (by a private consultant) of the chloride plume from a commercial salt storage facility in the Village of Camden, which shut down the public water system wells in August 2010. These staff also participated in efforts to locate an alternate source of drinking water, which included using a local domestic well as an emergency public water supply well, assessing proposed new well sites, and encouraging Camden to tie in with a nearby public water system.

- **Convey-It Investigation.** Assisted on an investigation of another commercial salt storage facility (Convey-It), which is responsible for a chloride plume just outside the source water protection area for the City of Springfield (Southwest District Office SWAP staff). Tasks included reviewing soil and ground water monitoring results.
- **Athens Investigation.** Investigated chloride levels in the source water protection area for the City of Athens (Southeast District Office staff). Tasks included reviewing ground water monitoring results.

Supplemental Environmental Benefits

The SWAP assessment reports already have been a primary source of information on salt pile locations. The salt pile investigation and planned follow-up will help prevent future chloride contamination in public water supplies. Chloride in public water supplies affects not only palatability of

water (and possibly human health), but also corrodes the water lines, both in the mains and in private homes, and damages implements such as washing machines and dishwashers. The economic impacts of chloride plumes are therefore broader than simply the costs of replacing a source. Preventing these costs has supplemental benefits to all users of the water resource.

Activity 3 - 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

- **Protection Plan Reviews.** Reviewed 18 municipal Source Water Protection Plans; 16 were endorsed by the Agency. See list in Appendix 1.
- **Workshops.** Conducted multi-session source water protection planning workshops for the Village of Clarington, the City of Columbus, the City of Delaware, the City of

Delphos, the Village of Middlepoint, the Monroe Water District, the City of Fremont, and the City of Cambridge. The workshops are targeted to local organizations, community officials and public water system operators. Eligible participants receive one contact hour per session (with five sessions planned), which are awarded upon submission of an endorsable protection plan.

- **Meetings.** Participated in one or more meetings with 20 public water system operators or local source water protection teams, where staff provided information and guidance on developing or implementing a local source water protection plan. See list of public water systems in Appendix 2.
- **Checklist Plans.** Received 96 Source Water Protection Plan checklists from non-municipal systems.
- **Certificates.** Returned personalized and signed certificates of recognition to 114 public water systems that had sent in a source water protection plan or a checklist.
- **ORWA.** Held quarterly meetings with Ohio Rural Water Association (ORWA) Source Water Protection staff, to coordinate development of local source water protection plans. Also attended ORWA Annual SWAP workplan meeting in October 2010.

Activity 4 - 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

- **Surveys.** Designed an electronic survey to track local implementation of source water protection. In April, letters were sent to operators of community public water systems with a high or moderate susceptibility water source, explaining how to log onto the survey site and pull up their partially-tailored survey using a password specific to their system. In June, systems with e-mail addresses were contacted by e-mail if they had not already submitted a survey. Between April 20 and June 30, 2011, over 400 purveyors submitted a survey. These surveys, which we expect to redistribute at least every three years, will provide valuable current information for assessing substantial implementation.
- **Secure SWAP Web page.** Provided passwords to 96 new registrants for

the Source Water Protection secure Web page, bringing the total to 650. 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.

- **QA/QC.** Continued to QA/QC the statewide geographic information system data layer of Source Water Protection areas and well locations.
- **Update WHP Delineations.** Continued to update delineations that had been originally completed by consultants under contract to municipalities.
- **SWEET Outreach.** Statewide, 54 Source Water Environmental Education Teams (SWEETs) provided ground water education and information about local source water protection planning to audiences in 58 counties. From July 2010 to December 31, 2010, 21 teams participated in a total of 43 events reaching 5,189 people. Since the inception of SWEET teams in October 2005, SWEETs have reached out to over 70,000 people. *(Note: the grant establishing this program expired December 31, 2010. The program will continue but the detailed tracking efforts required for the grant will not.)*
- **SWEET Web page.** 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 registered 1,476 visitors in this program year, and can be accessed at:

(wwwapp.epa.ohio.gov/ddagw/SWEET/)

- **SWAP Newsletter.** Completed the 2010 SWAP newsletter, summarizing Source Water Protection accomplishments in Ohio during PY 2010, and posted it on the SWAP Web site in September 2010.
- **Web Site Visitors.** The source water assessment and protection web site was accessed 4,255 times between July 1, 2010 and June 30, 2011.
- **Technical Assistance Maps.** Responded to 429 technical assistance requests for site-specific maps showing locations of source water protection areas and any nearby waste or product management and storage facilities. Forty-one of these requests came from DDAGW's public drinking water inspectors; the remainder came from private consultants or other state agencies. In addition, SWAP staff responded to 71 technical assistance requests for site-specific maps showing locations of source water protection areas near coal or industrial mining sites.
- **SWAP Rules.** Updated a description of the rules that include special conditions for SWAP areas on the SWAP Web site.
- **ORSANCO Meeting.** Participated in an ORSANCO outreach meeting in

Wheeling, WV (April 27, 2011), which presented source water protection efforts to major industrial and municipal dischargers along the Ohio River.

- **Presentations.** SWAP staff gave presentations for:
 - the Midwest Ground Water Conference in Columbus, October 2010.
 - an operator training session organized by the Operator Training Committee of Ohio (March 22, 2011)
 - six training events organized by the Ohio Rural Water Association (March 2, March 16, March 30, April 20, May 18 and June 1, 2011).
- **Region V Meeting.** Attended the annual Region V Source Water Protection Managers meeting in Indianapolis (Sept. 14-16).

Activity 5 – 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

- **Balanced Growth Meetings.** Participated in the Balanced Growth initiative for the Lower Olentangy River watershed, ensuring that SWAP areas for both surface and

ground water systems would be designated Priority Conservation Areas.

- **Farm Service Agency.** Coordinated with Farm Service Agency via quarterly meetings. Worked on a method for identifying areas that would most benefit from CRP in terms of both SWAP and FSA priorities while providing the level of discretion that FSA is obliged to maintain. (For example, since Ohio EPA documents are mostly open records, GIS files or maps of the priority areas cannot be stored in any format in Ohio EPA files.)
- **Oil/Gas Drilling Permits.** SWAP staff worked with ODNR Division of Mineral Resources Management staff to ensure that MRM's permits for new oil and gas wells were sufficiently protective of ground water, with special conditions required in source water protection areas.
- **Oil/Gas Pipelines.** SWAP staff researched the planned routes for proposed new oil/gas pipelines and shared the resulting information and maps with public water systems whose source water protection areas are traversed by or contiguous to a proposed pipeline route.

Activity 6 – Provide general administrative program support for staff.

Proposed Outcome/Product

1. Federal reporting

Actual Work Completed

- **Annual Report.** Completed Program Year 2010 DW SRF Wellhead Protection Set-aside Annual Report, August 2010
- **General Management.** Provided general management and supervision to staff, completed annual report and director's quarterly reports; all staff performed time accounting procedures and provided support for accounting, budgeting and purchasing.
- **Administrative Support.** Administrative staff provided general office support to program staff.
- **Technical Support.** Information management staff provided technical support for staff.

Appendix 1 – List of Public Water Systems that received Endorsement of a Source Water Protection Plan during PY 2011

- **Village of Granville**
- **City of East Palestine**
- **Portage County-Brimfield Plant**
- **Portage County-Shalersville Plant**
- **Village of Clarington**
- **Le-Ax Regional Water District**
- **Village of Matamoras**
- **Village of Midvale**
- **Monroe Water District**
- **Nelsonville PWS**
- **New Concord PWS**
- **Village of Tuscarawas**
- **Village of West Lafayette**
- **Brown County Rural Water System**
- **Village of Gratis**
- **City of Milford**

Appendix 2 – List of Public Water Systems that Ohio EPA Provided Direct Technical Assistance to during PY 2011

Dayton PWS
Spencerville
Van Wert,
Arlington
Martins Ferry
Orwell
Millersburg
Cambridge
Chesterhill Village
Stockport Village
Columbus
Delaware
Granville
Mt. Gilead
Jackson Center
New Carlisle
Indian Hill
Village of Mendon
Mt. Vernon
Westerville
Clark County Park Layne