Private Water Supply Protection in Virginia

Brian Benham[1], Julie Jordan[2], Stephanie Clemens[3]
[1]Extension Specialist, Assoc. Prof., and Dir., Center for Watershed Studies and [2]Water Quality Lab Manager, Biological Systems Engineering, Virginia Tech;
[3]Mid-Atlantic Master Well Owner Network Coordinator, Penn State University

Motivation

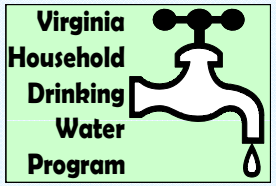
The majority of households in 60 of Virginia's 95 counties rely on private water supply systems. In 52 counties, the number of households using private wells is increasing faster than the number of households connecting to public water supply systems. Heaviest reliance on private water supply systems is outside urban centers in rural, non-agricultural areas. The inherent approach of many well owners is to overlook water system maintenance until a problem occurs. Furthermore, the lack of knowledge about private water supply management and water quality issues may lead to system neglect and the absence of regular water testing.

Solution

Create a dedicated platform to reach owners of private water supply systems by combining two existing educational programs – the Virginia Household Water Quality Program (VAHWQP) and the Pennsylvania Master Well Owner Network (PAMWON).

With funding provided by a 3-yr USDA grant (September '07-'10) this project will:

1. create a Virginia Master Well Owner Network (VAMWON) of trained Virginia Cooperative Extension agents and lay-volunteers
2. use that network to support and expand the VAHWQP
3. coordinate resources and support services from academia and partnering state agencies.

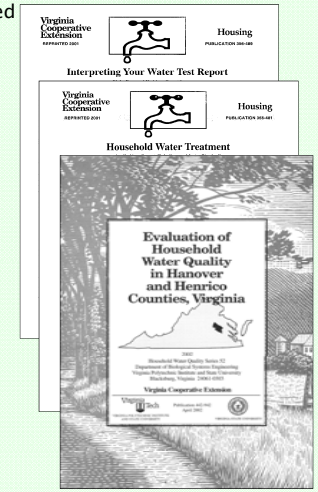


Background

Virginia Household Water Quality Program (VAHWQP)

- Began in 1989
- 82 of 95 Virginia counties have participated
- 12,000 private water supplies tested

The objective of the VAHWQP is to improve the water quality of Virginians using private water supplies by conducting county-based household water sampling clinics and follow-up sample analysis interpretation meetings where participants learn about proper system care and water treatment methods. The VAHWQP is supported by a series of Virginia Cooperative Extension (VCE) publications that address water quality pollutants and treatment options. Each clinic is documented in a peer-reviewed VCE publication.

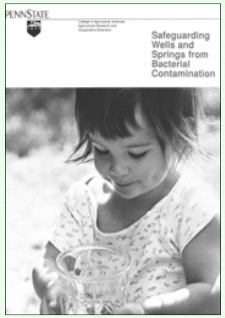


Pennsylvania Master Well Owner Network (PAMWON)

- Established in 2003
- 293 trained volunteers in 61 of 67 PA counties
- Partnered with Mid-Atlantic Regional Water Program in 2006

The objective of the PAMWON program is to train screened volunteers about proper management of private water wells. Trainees are certified as Master Well Owners and have knowledge and resources to educate others about:

1. proper well construction and location
2. appropriate well maintenance and wellhead protection
3. recommendations for solving common water quality issues



Program Outputs

- 70 VAMWON Virginia Cooperative Extension Agents
- 240 VAMWON lay-volunteers
- VAHWQP/ VAMWON website
- New/revised Virginia Cooperative Extension VAHWQP resources

Program Outputs

VAMWON

Train VAMWON Extension agents and lay-volunteers about:

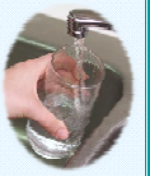
1. proper design, management, and maintenance of private water supply systems
2. conducting local VAHWQP Clinics
3. track outputs and impacts via project website

VAHWQP

Educate VAHWQP Clinic participants about:

1. quality of their drinking water
2. ways to properly care for, manage, maintain their private water supply systems
3. treatment methods to correct water quality problems

Long-term Impact



- Improved water quality and health for Virginians
- Increased capacity for Virginia Cooperative Extension to deliver private water supply system programming

Assessing Impact

Output and impact measures to be tracked include:

- The number of VAMWON workshops conducted and number of VAMWON agents and lay-volunteers trained.
- Numbers of well owners receiving information from VAMWON agents or volunteers and action taken:
  - ✓ had water tested,
  - ✓ sought information or installed water treatment equipment,
  - ✓ reduced fertilizer/herbicide use around the well or spring,
  - ✓ graded the area around well,
  - ✓ installed a sanitary well cap or sealed spring,
  - ✓ had a nearby septic system pumped,
  - ✓ drilled a new well, or
  - ✓ identified potential sources of ground water contamination