Should Groundwater be a Public Trust?

by Liz Royer & Eric Hanson, VRWA

Groundwater quantity is an issue that has been generating many discussions in Vermont over the past several years. Environmental groups have been advocating for more state control over groundwater and increased funding for aquifer mapping. Manufacturing groups and commercial entities argue that recent legislation places an undue burden on industry and may bring lawsuits and limit economic growth.

During the spring of 2006, the Vermont Legislature passed a bill mandating reporting and permitting for new commercial and industrial groundwater withdrawals greater than 50,000 gallons per day (GPD), on an interim basis. This bill became Act 144, An Act Relating to Groundwater Management, and went into effect on July 1, 2006.

The purpose of Act 144 is to ensure that large industrial and commercial groundwater withdrawals do not interfere with pre-existing water supplies or cause adverse environmental impacts. Types of withdrawals that are exempt include: fire safety, agriculture, dairy and agriculture processing, dewatering operations during building construction, geothermal energy production, and public sanitation.

Continued on page 5.

The Need for Good Recordkeeping

by Aaron Perez, VRWA

As Vermonters, we have a long tradition of oral history and learning by doing. However, as the water industry grows and becomes more complex, good written recordkeeping for water systems becomes ever more important.

We have a significant number of operators in Vermont that are nearing retirement. What this means is that the knowledge and experience of these operators will be lost if not documented.

Clear and well delineated maps, as well as good system operations records, are a key part of the smooth operation of a water system. If information is not passed on when an operator retires, it can be frustrating for their replacement to have to “learn the hard way” about a situation that may have been common knowledge for years. There are a number of ways that recordkeeping can be done to avoid this situation.

For those systems that have computers, there are a number of software programs for water systems that are easy to use. This is a great way to put a lot of information together in one accessible place.

SCADA systems installed at wells and reservoirs can be used for remote alarming, monitoring and data recording. This information can give an indication of trends in seasonal water usage and production, and is also useful for leak detection. If this information is saved to a computer, it can give a long term, overall history of a system that can be stored in a small amount of space.

GIS mapping with a computer gives the operator a mapping system that can be updated as infrastructure changes. Some towns have taken this to the next level by providing their operators with laptop computers so that the information can be accessed on the street, when and where it is needed.

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Since 1982, Vermont Rural Water Association has supported water and wastewater systems across the state. We provide many services, including training, source water protection planning, and onsite assistance.

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Vermont Rural Water Association

VRWA Staff


Letters

Vermont Rural Water Association, I am writing this letter to show support for your assistance programs. This past fall, the State of Vermont required that we write a very detailed and complicated Spill Prevention Plan covering all of our wastewater components. Our wastewater facility is staffed only part time, making the demands from the State very difficult for us to complete. Like most communities in the Northeast Kingdom of Vermont, budgets are very tight, in fact the mill in our town recently shut down. This means that hiring an engineering firm every time a new program is required by regulatory agencies is not an option.

I contacted Wayne Graham of your wastewater program for assistance in writing this plan. Wayne assisted me in evaluating all of the components of our system and compiled it into a finished Spill Prevention Plan complete with mapping.

I would not have been able to complete this program on time without assistance from VRWA. This assistance saved us at least $2,500. I am proud that our community is a member of VRWA and look forward to working with your staff members in the future.

Sincerely,

Calvin Colby
Chief Operator, Gilman WWTF

News Leaks, Summer 2008
On May 7-8, VRWA hosted its Annual Conference at the Lake Morey Resort in Fairlee. Over 200 attendees enjoyed a day of sessions, exhibits, and good conversation during our annual get together.

Brent Palmer of the City of St. Albans was this year’s Tony Torchia VRWA Award winner. Brent’s commitment to excellence has been apparent to all who have worked with him over the years. Congratulations to Brent!

During the conference luncheon on May 8, we were treated to a talk by Rodney Tart, President of the National Rural Water Association. President Tart had a number of Rural Water stories to share and reminded us of all the good work being done by other associations across the country.

We also honored 47 systems who had reached their 20, 15, 10 and 5 year anniversaries as members of VRWA. Many thanks to our members for making all our work possible!

Ethan Graham, son of Wayne and Julie Graham, won one of 20 coveted scholarships from the National Rural Water Association for the upcoming 2008-2009 academic year. Ethan will be attending the White Mountain Community College in Berlin, NH, this fall. He will major in the Environmental Sciences and is enrolled in the Associates Degree program. He plans on entering the water/wastewater field.

Scholarships for $2,000 are awarded to children of Rural Water employees each year based on their essays, academic records, awards, career goals, activities, financial circumstances, and community involvement. A committee of NRWA’s Board of Directors selects the recipients. Congratulations, Ethan!

Congratulations to Dick Desautels of Colchester Fire District #2. Dick was recently elected to serve another three-year term as a Director for VRWA.

Due to personal commitments, Jeff Vance (Georgia Fire District #2) and Joe Voci (Town of Randolph) have resigned their Director positions. All of us at VRWA would like to thank them for their committed service to our association.

The Directors have appointed Paul Carroccio of Piper Ridge Homeowners Association to fill an open Director position until May 2010.

The board is still considering a replacement for the remaining Director position. Anyone interested in serving should contact Shaun Fielder at 802-660-4988 x315.

We wish her all the best!

We are pleased to announce that Tim Russo has joined VRWA as an Administrative Assistant. Tim has a number of years of experience in office operations with database, publishing, website, and marketing expertise. Congratulations to Tim, he is a great addition to our team.
Legionella bacteria acquired its name after a severe epidemic occurred at an American Legion convention in Philadelphia in 1976. The mystery disease sickened 221 people and caused 34 deaths.

The cause turned out to be a previously unknown bacteria, now called Legionella. The primary route of infection is inhalation of aerosolized bacteria. This can occur around showers, faucets, hot tubs and in other environments where the bacteria can become airborne.

Two types of illness can occur from infection with Legionella bacteria; Pontiac fever, which is a non-pneumonic condition, and Legionnaires’ disease, which is a type of pneumonia.

Pontiac fever is characterized by flu-like symptoms, mainly headache, fever, chills and muscle pain. Pontiac fever lasts 2 - 5 days. This is the less severe form of the illness.

Legionnaires’ disease also begins with flu-like symptoms, but then develops more severe symptoms, such as nausea, vomiting, disorientation, diarrhea, severe chest pains and difficulty breathing. Legionnaires’ disease is potentially fatal because it becomes pneumonia. There is no vaccine for this condition.

Legionella bacteria occur naturally in aquatic habitats, including groundwater and surface water drinking sources. Below 68 degrees, Legionella bacteria stay dormant in a water system. When they travel to environments with temperatures between 95 - 115 degrees they achieve their optimum growth rate. This would include hot water heaters, cooling towers, humidifiers, ice machines and dead end lines in a water system.

There have been correlations between the presence of scale and sediment in distribution systems and the presence of Legionella bacteria. When the bacteria are aerosolized and become airborne they pose a health risk.

Some preventative measures that can be taken to avoid outbreaks are:

- Keep water temperature below 68 degrees
- Avoid water stagnation and biofilm growth by flushing dead end lines often
- Keep sediment and scale out of your system, since they provide nutrients for Legionella bacteria

Legionella bacteria are more resistant to lower chlorine residuals in the distribution system than Total coliform, e. coli and fecal coliform bacteria. There are several control methods available for disinfection of water distribution systems. These include thermal (Super heat and flush), hyperchlorination, UV sterilization, and ozonation.

Thermal disinfection is common practice for hospitals, hotels and other institutional buildings. Water distribution systems can be hyperchlorinated, shocking the system initially and continuously adding chlorine to the system. UV sterilization can also be used to kill Legionella bacteria by disrupting cellular DNA synthesis.

Legionella bacteria, like e. coli and fecal coliform, can infiltrate your water system. Ensuring that you maintain and operate your water system correctly and safely will help to protect public health.
Since July 1, 2006, no valid groundwater withdrawal applications have been received by the Vermont Agency of Natural Resources (ANR) Water Supply Division under Act 144.

Related legislation was passed by the Vermont Senate on March 26, 2008, and is currently under discussion in the House Fish, Wildlife, and Water Resources Committee of the Vermont Legislature. Senate Bill 304 proposes that any person who withdraws more than 20,000 GPD, averaged over any 30 consecutive-day period, would have to file an annual groundwater withdrawal report with ANR.

In addition, this bill proposes that after July 1, 2010, any new or increased commercial or industrial groundwater withdrawal over 57,600 GPD would require a groundwater withdrawal permit. This updated threshold for permitting groundwater withdrawals translates to 40 gallons per minute (GPM).

Most farms would be exempt from reporting; however, any permitted large farm operation that withdraws more than 50,000 GPD averaged over any consecutive 30-day period would be required to provide annual reports of estimated water use to the Agency of Agriculture.

The more controversial portion of Senate Bill 304 is the proposal that groundwater be held in “public trust.” Public trust is a designation that was created for the promotion of public welfare and not for the benefit of one or more individuals. A public trust gives control to the state and must be managed for the good of everyone in the state. If this bill is enacted, groundwater withdrawals would not be allowed to have an adverse impact on water quality, water quantity, or other users.

At least fifteen states nationwide, including New Hampshire and Maine, have given groundwater the public trust designation. Vermont recognizes surface water as being in the public trust, but it currently regulates groundwater according to a doctrine of correlative rights, which gives control to the landowner. Correlative rights limit groundwater withdrawal to the quantity of available water in the aquifer and one’s need for its use.

While debate continues on these issues in the Vermont House and Fish, Wildlife, and Water Resources Committee, if you have an opinion regarding groundwater withdrawal or the public trust designation, please contact your local Representative (names and contact information can be found at http://www.leg.state.vt.us/). Please note that the language contained in Senate Bill 304 is continuously evolving and a vote is currently scheduled for late April. Daily updates are available at http://www.leg.state.vt.us/.

**BILL UPDATE**

As of our print date, this bill has been passed by the Vermont House (House and Senate Agreement on 04/28/2008) and is now awaiting Governor’s action. It is expected that the Governor will sign the bill.

To check on the current status of the bill, visit http://www.leg.state.vt.us/database/status/STATUS.CFM and type “S.304” into the search box.

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**Useful Websites for Soil Information**

Looking for information on soils in your source protection area? Here are some websites that may come in handy.

**National Resources Conservation Service, Vermont Soil Attribute Data**

A variety of information on the Vermont Soil Resource program & useful links to other soil related sites.

**Web Soil Survey**
http://websoilsurvey.nrcs.usda.gov/app/
Make interactive maps. No GIS software required!

**Soil Datamart**
Download soil data layers & attributes (full set of 60 tables). Also has report generation. Data is for users with their own GIS software.

**Vermont Center for Geographic Information**
http://www.vcgi.org/
Download soil data layers & attributes (easy-to-use “Top Twenty Table” has streamlined version of soils data). Interactive maps for imagery & base layers. Data is for users with their own GIS software.

**Soil Data Viewer**
http://soildataviewer.nrcs.usda.gov/
Download an extension to ArcMap that allows a user to create soil-based thematic maps. ESRI GIS software is required.

**Official Series Descriptions**
http://soils.usda.gov/technical/classification/osd/index.html
In-depth descriptions of soil series. Map the extent of various soil series.

**National Soil Survey Laboratory - Characterization Data**
http://ssladata.nrcs.usda.gov/
This application allows users to generate, print and download reports containing soil characterization data.
Advocate for Your Industry
by Shaun Fielder, VRWA

In a previous article in News Leaks (“Are You Selling the Value of Your System?”, Winter 2007), I asked if you were promoting the value of your system. A better way to say this might be: “Are we all promoting the value of the services provided by the water and wastewater industry?”

Obviously water and wastewater service is the foundation of a given community’s survival. The end product of all our good work is to provide for public health protection as well as protection of our environment. This being said, the financial pressures created by this economic downturn (recession if you prefer) at the national, state, and local level continue. I know this isn’t news, but our customers are facing tougher decisions in regards to their spending habits. Competition for funding and revenue base is more and more challenging for all, including systems, regulatory agencies, and VRWA.

Let’s all continue to promote our industry, that’s both water and wastewater, as the foundation of our state’s economy. You may have done a double take at this last statement, thinking that tourism or agriculture were the big money makers for Vermont. They are, but many of those tourism and agricultural-based businesses need safe potable water and adequate wastewater services to survive.

We are in times where some very tough economic decisions will need to be made. Let’s be sure those decisions don’t short change our industry. It’s important that we all understand the history leading to this point, but it is more important that we take positive steps to keep the water and wastewater industry moving forward.

You can be involved in this process by advocating at the local, state and national level. Be involved in your community for any pertinent discussions tied to water and wastewater service. In addition, be sure to relay your opinions to your state and national representatives on given issues. VRWA has contact information for the elected officials on our website under the “legislative watch” heading. Let’s all be sure we continue to promote the value of our water and wastewater work, for it is critical to the survival of our communities.
As the reporting required by the state increases, computers can also be a valuable time-saving device. Almost all state forms can be found and filled out online. Many of these forms can also be electronically submitted. However, there are a lot of small systems that do not have access to computers. For these systems, handwritten records can be just as effective. Keeping track of infrastructure changes by drawing on existing mapping and keeping up-to-date curb stop location books can be of immeasurable use to an operator that is unfamiliar with a system. Clearly marking not only valve locations but also their condition on the map can save operators a lot of time and frustration (especially in the middle of the night).

Keeping an operator’s log book is also a great way to ensure that information is passed down from one operator to another. By giving a short narrative of your daily activities, you can really give a replacement operator a sense of what day-to-day operational quirks may exist in a system.

Operation and maintenance manuals are often great references, but they don’t always tell the whole story of how a system operates as well as an operator who has done the job. So for the next generation’s sake, write it down!
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