



SUPPLY LINES WITH THE SOURCE



Newsletter of the NHDES Drinking Water & Groundwater Bureau
on the web at www.des.nh.gov

Spring 2013

USGS models predict widespread occurrence of low-level arsenic in New Hampshire's groundwater

Scientists from the U.S. Geological Survey have developed a new tool to help people better understand the risk of exposure to arsenic, a common drinking water contaminant in New Hampshire. The set of new statistical models predicts the probabilities of arsenic occurrence in groundwater from bedrock aquifers at concentrations of 1, 5, and 10 micrograms per liter ($\mu\text{g/L}$). The maximum contaminant level (MCL) is 10 $\mu\text{g/L}$. Not surprisingly, significant predictors of arsenic in groundwater from bedrock aquifers included geologic, geochemical, land use, hydrologic, topographic, and demographic factors. What was surprising was that the probability of having arsenic levels greater than 1 $\mu\text{g/L}$ was widespread in the state.

The models indicate that about 39 percent of New Hampshire bedrock groundwater has at least a 50 percent chance of containing an arsenic concentration greater than or equal to 1 $\mu\text{g/L}$. This compares to about 5 percent of the state for arsenic at or above the MCL. The southeastern counties of Merrimack, Strafford, Hillsborough, and Rockingham have the greatest potential for having arsenic concentrations above 5 and 10 $\mu\text{g/L}$ in bedrock groundwater.

The models were developed for use by the New Hampshire Environmental Public Health Tracking (NHEPHT) Program—a CDC funded program designed to help connect the dots between environmental hazards and health outcomes. The data will be posted to the NHEPHT web portal where they will be available to health researchers and others to support studies related to human health. Statewide maps generated from the probability models are not designed to predict the arsenic concentration in any single well, but they are expected to provide useful information in areas of the state that currently

contain little to no data on arsenic concentration. They also may aid in resource decision making, in determining potential risk for private wells, and in ecological-level analysis of disease outcomes. See <http://pubs.usgs.gov/sir/2012/5156/> for the complete report. •

Mutual aid membership offer expiring

DES, with funding from EPA, is sponsoring the cost of new membership in the 2013 and 2014 N.H. Public Works Mutual Aid Program for community water systems and municipalities that currently operate a public water system. Contact Johnna McKenna at (603) 271-7017 or at johnna.mckenna@des.nh.gov to take advantage of this offer before it expires in May. Information about the program, along with the mutual aid agreement, can be found at www.t2.unh.edu/ma. •

New rate information available

In 2012 the average annual water rate in New Hampshire was \$414.77 according to the most recent water rate survey conducted by DES. The major survey finding is that three-quarters of public water systems indicated they have raised rates over the last five years. The survey also provides the date when water rates were last changed, as well as information about other fees and available assistance programs. The full report is available online at <http://des.nh.gov/organization/divisions/water/dwgb/categories/hot.htm>. •



SPOTLIGHT ON HILLCREST MANOR

SRF helps a small system and can help you, too

Hillcrest Manor Apartments is a small community water system in Candia serving 26 homes that has recently made some major improvements. Constructed in the early 1970s, it consisted of an underground vault with buried storage tanks and a steep ladder with a substandard (confined space) entry way. The conditions were such that the pump house was declared a safety hazard during its last sanitary survey inspection, requiring the system owners to establish a plan to upgrade critical infrastructure.

DWGB worked closely with the owners, Dube Investment Properties LLC, and their primary operator, Pump Systems Inc., to apply for and secure a \$100,000 low-interest loan through the Drinking Water State Revolving Loan Fund for a new pump house and storage tanks. Jones & Beach Engineers finished the project design in the fall of 2011 and Smith Pump Inc. of Hooksett (the low bidder) completed the construction at the end of 2012, with DES assistance and oversight.

The new facilities include new

well lines, source meters, and sample taps for each of the three production wells; a new 6,000 gallon atmospheric storage tank; two submersible variable frequency drive (VFD) booster pumps (installed within the storage tank); and new motor control panel and dial-out alarms. Dedicated distribution meters are provided for each building to allow quick identification of even small leaks to reduce water waste.

Project costs were reduced by using the basement of the existing building as the new pump house/motor control room, avoiding costly construction of a new pump house. In addition, existing equipment in good working order was salvaged and relocated, including the well source flow meters, the chlorine feed tank, and chlorine pump. A new secure door with combination lock was installed to improve access and security. The new facilities are safer, more accessible, and en-



New dedicated source piping and distribution meters at Hillcrest Manor Apartments. (DES photo)

ergy efficient, and provide a vast improvement in system safety and reliability to serve the community for another 30 to 40 years. Last but not least, based on the community's low income status, the project is set to receive 30 to 35 percent principal forgiveness, which will allow water rates to remain affordable.

For more information, contact Cindy Klevens at (603) 271-3108 or cynthia.klevens@des.nh.gov.

Announcing the 2013 ASDWA President

Sarah Pillsbury, DWGB Administrator, has been elected to serve as the 2013 president of the Association of State Drinking Water Administrators (ASDWA). ASDWA is a respected voice for state programs with Congress, the U.S. Environmental Protection Agency, and other professional organizations. This year will be an active year for ASDWA with the introduction of the Revised Total Coliform Rule, revisions to the Lead & Copper Rule, the implementation of the Lead Free Act, a possible perchlorate standard, and ongoing efforts to more closely align federal and state surface water quality programs to protect the sources of drinking water. Tackling these issues, along with improving drinking water infrastructure and helping small systems, will be Sarah's priorities as ASDWA's President. Congratulations, Sarah! •

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The new Revised Total Coliform Rule is here

The EPA has revised the 1989 Total Coliform Rule with input from the regulated community, regulatory agencies, and professional associations. The final rule was published in the February 13, 2013, Federal Register, pages 10269-10365, and can be found at www.gpo.gov/fdsys/search/home.action; search for "2012-31205."

The new Revised Total Coliform Rule (RTCR) continues to focus on protecting public health by reducing the potential pathways of contamination into a public water distribution system and providing incentives for improved operation.

Key changes to the rules are:

1. Requires PWS to conduct a full assessment of their system if total coliform is present (or lack of sampling). The purpose of these assessments will be to evaluate the possible presence of sanitary defects, defects in distribution system, and monitoring practices to determine the likely reason that the samples were total coliform positive.
2. Eliminates the Maximum Contaminant Level (MCL) for total coliform. The RTCR includes an MCL for *E. coli*. This should minimize the number of MCL violations issued and subsequently reduce the public notice requirements. The RTCR updates sampling site

plans and monitoring requirements, including changes to the number of repeat and additional routine samples required.

3. Places a new focus on seasonal non-community water systems (those that don't operate year round and regularly shut-down). The RTCR specifies monthly monitoring and requires a state-approved start-up procedure with the system certifying that the procedure was followed each season.

DES will be seeking participation from various stakeholder groups including the N.H. Water Works Association and Granite State Rural Water Association to formulate the new state rules. Our goal is to have a draft rule ready for review by the end of 2013. We will keep systems informed as the rulemaking progresses. •

2013 source water protection conference

Attend DES's 2013 Drinking Water Source Protection Conference on Wednesday, May 1, from 8:30 a.m. to 4:00 p.m. at the Grappone Conference Center, Concord, N.H. Registration and a full agenda are available at the American Ground Water Trust's website at www.agwt.org (click on the "Events" tab). Continuing education credits (5 technical credit hours) are being offered through the N.H. Water Works Operator Program.

Bulk water delivery reminders

The bulk water rules (Env-Dw 304, Emergency Bulk Water for Public Water Systems) have been in effect for over three years now. The DWGB has received over 300 delivery notifications due to various reasons: pump failure, capacity issues, leaks, flushing, repairs, and dry weather. Hopefully your system will never need a bulk water delivery, but if you do, here are some reminders:

- The water must be from an approved community water system source in a truck suitable for potable water.
- A certified operator representing the system must be present during the water delivery and must test the free chlorine residual to ensure a concentration between 0.2 mg/L and 4.0 mg/L.
- **Bulk water should be delivered into a storage tank or pump house tap. Water delivered**

directly into a well is a violation of Env-Wq 404, Underground Injection Control rules.

- The owner of the receiving system is responsible for keeping proper records and making sure that DWGB is notified within two business days after emergency bulk water is delivered to customers using the Bulk Water Delivery Notification Form. The form should be signed by the certified operator representing the system.
- All community systems must include bulk water deliveries in their annual consumer confidence reports.

Refer to Env-Dw 304 for the specific requirements. The bulk water fact sheet, notification form, and brochure can be found online at http://des.nh.gov/organization/divisions/water/dwgb/wseps/bulk_water.htm. •

EPA web-based tool for disaster funding

When a disaster occurs, it is not always easy to find the right federal disaster assistance program. However, a new web-based tool now makes it a lot easier. EPA's Fed FUNDS (Federal Funding for Utilities—Water/Wastewater—in National DisasterS) improves access to federal disaster funding. Fed FUNDS provides information tailored to the water/wastewater sector as well as tips and application forms for a number of federal disaster funding programs, including:

- Federal Emergency Management Agency (FEMA) public assistance and hazard mitigation grant programs.
- U.S. Department of Agriculture (USDA) rural development emergency community water assistance grants.
- EPA drinking water and clean water state revolving funds.
- Housing and Urban Development (HUD) community development block grant program.
- Small Business Administration (SBA) loan programs.

To match your situation with the proper funding, the tool's website includes a "Which Funding is



Source: U.S. Environmental Protection Agency, Office of Water

Right for You?" button. The "Currently in a Disaster?" button provides quick access to document the disaster related damage/repairs for later reimbursement. Fed FUNDS provides information on the application process, examples of successfully funded utility projects, and utility funding mentors. This webpage addresses national and regional disasters, but also applies to local disasters that result in service interruptions and significant damage to critical water infrastructure.

As part the effort to introduce Fed FUNDS, EPA will be launching a series of workshops and webinars. To access Fed FUNDS, go to www.epa.gov and search for "fed funds." For more information on federal disaster funding/recovery, contact your regional EPA representative or, at DES, Johnna McKenna at (603) 271-7017 or johnna.mckenna@des.nh.gov. •

Location-based notification tools for emergencies

Government agencies, police departments, schools, and other organizations are using location-based notification services that provide instant alerts via text message and email. Water systems could potentially use these services to contact customers during drinking water-related emergencies.

For example, private notification services such as Nixle®, SWIFT911™, and CodeRED® connect public safety agencies, utilities, or schools to their residents via phone, text, web, and email so residents can receive important notifications. Messages are created and assigned a priority level, ensuring important information reaches users in a timely manner. Messages can be targeted to specific geographic regions affected by an incident. Services provide an "opt-in" for citizens to receive emergency alerts to separate locations.

Several police and fire departments in New Hampshire are using these services. If your municipality is using one of these notification services, con-

sider asking them to also send out messages during drinking water emergencies or for other notifications such as water use restrictions or service interruptions. This service should not be used as the sole means of notification, since residents need to sign up to receive the alerts.

While this service is invaluable in an emergency, for any drinking water notices you must still follow the instructions on the DES public notice form, which can be found at www.des.nh.gov; go to the A to Z list and click on "Public Notice (for Public Water Systems)." The applicable public notice templates are listed on the page. •

Mention of the companies above does not constitute an endorsement of business products or services by DES nor is the list exhaustive. DES is mentioning the companies in an effort to enhance public awareness of vendors as possible contacts for more information and possible purchase of different types of notification systems or services.

Protecting water quality through safe medicine disposal

Trace amounts of pharmaceuticals and personal care products (PPCPs) have been detected in groundwater and surface water as part of several research projects in New England. PPCPs can be released to the environment through pathways associated with human and animal use of these substances, the manufacturing process, and disposal of unused portions of these products.

High concentrations of certain PPCPs have been shown in national studies to adversely impact the health of aquatic life. Studies are ongoing by the EPA and the Food and Drug Administration to assess whether exposure to PPCPs in low concentrations impacts human health.

In 2008, DES developed household medicine disposal guidelines by working with drug abuse prevention and poison prevention stakeholders (nh.gov/medsafety). DES also worked with the Department of Justice, Board of Pharmacy, and Department of Safety to support legislation to allow law enforcement agencies to establish household medicine collection boxes in their offices and conduct single-day collection events. Developing the statute and regulations was challenging due to various concerns and state and federal legal requirements associated with prescription medicine, controlled medicine, and hazardous waste collection and disposal.

At this time, at least 13 municipal law enforcement agencies have established collection boxes, including Franklin, Keene, Laconia, Lee, Newington, North Hampton, Pelham, Pittsfield, Salem, Sandown, Seabrook, Windham, and Wolfeboro. Based on existing federal and state regulations for controlled substances, only law enforcement agencies can now establish household medicine collection boxes. However, a new federal law was passed in 2010 that broadens the U.S. Drug Enforcement Administration's (USDEA) authority to allow for additional collection options (see www.gpo.gov/fdsys/pkg/BILLS-111s3397enr/pdf/BILLS-111s3397enr.pdf). In December 2012, USDEA published draft regulations for the collection and disposal of controlled drugs from households (see www.gpo.gov/fdsys/pkg/FR-2012-12-21/pdf/2012-30699.pdf). If finalized, the draft regulations would enable retail pharmacies and long-term health care facilities to establish medicine collection boxes under certain conditions.

In the meantime, USDEA has scheduled the sixth



National Take Back Day for Saturday, April 27. USDEA's first five National Take Back Days resulted in removing more than 2 million pounds of prescription drugs from circulation.

The proper disposal of medicine addresses one aspect of source water protection. Additional federal efforts are underway to promote green chemistry for formulation and manufacturing these products and to better characterize the toxicity to the environment and human health when low concentrations of pharmaceutical mixtures are released. DES continues to track the progress of these efforts and seeks funding to sample and analyze water resources in New Hampshire to assess to what extent PPCPs and other emerging contaminants may be present in our waters. •

Announcing the asset management and financial planning grant awards

DES recently developed a grant program for public water system asset management and financial planning. The program assists community water systems that serve 500 or more people. Water systems can apply for up to \$15,000 per grant. The funds can be used to hire a consultant to conduct asset management initiatives. A 50 percent match is required. Twenty water systems applied for the grants in 2012 and 12 systems will be awarded funding.

The goals of the program are to assist systems in developing an asset inventory with condition assessment, to review current water rates to determine whether the existing structure supports future investment needs, and to communicate these planning efforts to customers. The program will be funded from the Drinking Water State Revolving Fund (DWSRF) loan program set-aside. Future applicants for DWSRF funding may receive priority ranking points for having prepared and implemented an asset management plan.

The next round will occur in summer 2013. Contact Adam Torrey at (603) 271-2950 or adam.torrey@des.nh.gov. Information about the grant program can be found at <http://des.nh.gov/organization/divisions/water/dwgb/categories/grants.htm>. •

Significant deficiencies in sanitary surveys must be corrected

Every three years, DWGB performs a comprehensive sanitary survey inspection for each of the approximately 1,200 non-transient public water systems in the state. The 1,300 transient systems are inspected every five years. As part of these visits, our surveyors identify issues that may affect water quality or quantity, directly and indirectly, and can be considered “**significant deficiencies.**” All significant deficiencies must be corrected as soon as possible and **no later than 30 days**, unless a shorter or longer timeframe is established in writing.

Longer timeframes can be justified and accepted for more complex and costly repairs, as long as there is no immediate risk to public health. In these cases, a corrective action plan must be submitted and approved by DES in writing (letter, email, or fax), to avoid incurring violations in accordance with Env-Dw 717 Groundwater Rule, and Env-Dw 720 Inspec-

tions; Significant Deficiencies.

Simple, right? Except, if you don’t follow the protocol or fail to respond to DWGB letters, it can quickly escalate to a federal “treatment technique violation,” which now requires public notice in addition to fixing the issue.

Therefore, please be sure to address the significant deficiencies listed on your Survey Inspection Report tear sheet (generally issued at the conclusion of the inspection) and/or follow-up survey letter. In addition to correcting the deficiency, you must notify DWGB in writing before the 30 days are up. If we do not hear from you in writing, DES will issue a state violation at 60 days and a federal violation/public notice at 120 days. Since our mission is to have safe, reliable drinking water every day at every public water system, we appreciate your prompt attention to avoid such violations altogether. •

Fixing septic systems near Lake Waukewan

by Patricia Tarpey, Executive Director, Lake Winnepesaukee Watershed Association

Improperly functioning septic systems can present a public health risk and degrade a lake’s water quality, particularly when these systems are located near the shoreline. Poorly functioning septic systems can release excessive amounts of nutrients and pathogenic organisms into a water body. At the same time, it can be difficult to identify problem systems and enforce rules on the local level to repair, upgrade, or replace those systems, largely because of the cost to property owners.

Despite these challenges, the town of Meredith and the Lake Winnepesaukee Watershed Association (LWWA) are moving ahead with programs to identify and help homeowners fix failing septic systems near Lake Waukewan, which is Meredith’s public water system source and a regional recreational resource. Protecting the lake’s water quality is a top priority.

In 2005, the Waukewan Watershed Advisory Committee’s management plan identified septic systems as the highest priority objective to address pollution sources affecting the lake. Meredith conducted a detailed survey of septic systems near the lake in 2009, identifying 31 as very high risk and 17 as high risk. In 2012, Meredith adopted a health regulation that requires evaluation of all septic systems within 250

feet of the lake.

DES awarded LWWA two grants that will help protect the lake. A source water grant will reimburse property owners for one-half the cost of professional evaluations of their septic systems, up to \$250. The cost-sharing program will be offered to the owners of property located within 250 feet of Lake Waukewan, including properties in New Hampton, Center Harbor, and Meredith.

A watershed assistance grant will pay one-third of the cost of repairing, upgrading, or replacing approximately ten septic systems, up to \$4,000. Although all properties located within the Lake Waukewan watershed will be eligible, priority will be given to septic systems identified as high risk located within 250 feet of Lake Waukewan and Lake Winona, which empties into Lake Waukewan.

LWWA expects to be able to offer financial assistance from the two grants beginning in April or May 2013. For more information, contact LWWA at (603) 581-6632. •



Source: Lake Winnepesaukee Watershed Association

Drinking Water and Groundwater enforcement activity in 2012

The DWGB offers assistance to public water systems to maintain compliance with federal and state drinking water and groundwater regulations. Despite this assistance, violations sometimes require DWGB to initiate enforcement actions.

In a letter of deficiency (LOD), DWGB identifies violations and requests that the owner bring the system into compliance by taking certain actions within specified time periods. During 2012, DWGB issued 212 LODs for reasons including bacteria-related violations, failure to provide public notice to consumers, sanitary survey violations, consumer confidence report violations, and failure to pay permit-to-operate fees.

Administrative orders (AO) are issued in response to particularly serious violations or when a system continues to accrue violations after receiving an LOD. DWGB issued 23 AOs in 2012. The water systems that received an AO all accrued multiple violations, including failures to sample, correct significant deficiencies, complete a consumer confidence report, or pay permit-to-operate fees.

Administrative fines (AF) impose a monetary penalty for violations. In 2012, DWGB issued five AFs, with proposed fine amounts ranging from \$8,000 to \$16,000. Four of the AFs cited repeated violations due to failure to sample for acute contaminants and failure to provide public notice of these violations. One AF was issued for repeated failure to complete and distribute a consumer confidence report to the system's consumers.

In addition, seven AFs were issued to licensed and unlicensed water well drillers and pump installers, with proposed fine amounts ranging from \$300 to \$11,200. Five of the AFs cited repeated failures to file well completion reports in a timely fashion, while two AFs were issued for failure to have a valid pump installer or well driller license before completing work on wells in New Hampshire.

Occasionally, a violation is considered by DWGB to be so serious and/or intentional that the case is referred directly to the Attorney General's office (AGO). Although DWGB did not refer any cases to the AGO in 2012, there are a few ongoing cases for which the AGO continues to collect penalties. In mid-2012, a water system owner signed a settlement agreement to pay \$15,600 for multiple sampling and public notice violations. In addition, the AGO is pursuing a \$20,000 civil penalty from a water system

owner with multiple significant deficiencies through Strafford County Superior Court.

DWGB also has the authority to require public water systems to issue boil water orders for a variety of reasons. In 2012, 28 boil water orders were issued. In 2012, two "do not drink" orders were issued in cases where nitrate levels in a water sample exceeded the drinking water standard.

For more information on enforcement issues, contact Leah McKenna at (603) 271-2854 or leah.mckenna@des.nh.gov. LODs, AOs, and AFs issued by DES programs can be viewed online at www2.des.state.nh.us/Legal/ for a minimum of five years after compliance is achieved. •

2013 SWP grants selected

Ten of the 16 Local Source Water Protection Grant applications submitted for 2013 will receive funding for security and source protection projects. Applications for the 2014 grant round will be available in late spring and due November 1, 2013. More information can be found at www.des.nh.gov; search for "lswp grants." •

Raw water chemistry project

Over the past four years, DWGB has uploaded historic data from public water systems into DES's Environmental Monitoring Database (EMD). Water quality data from 2,714 wells have been uploaded from samples dating from the early 1970s to the present. Much of this data did not previously exist in digital tabular format.

The project names in the EMD for the historic data are "Old Raw Water Chemistry Project" — which includes historic water sample results collected for routine chemical monitoring — and "Pump Test Raw Water Data" — which includes raw water quality samples that were collected during a new source pumping test.

Data from this project can be accessed through the DES OneStop EMD query tool at <http://des.nh.gov/onestop/index.htm>. On this page, select "Environmental Monitoring Database." On the EMD main page, select "grab samples." On the EMD query parameters page, set the project name field to "Old Raw Water Chemistry Project" or "Pumping Test Raw Water Data." •

Electronic delivery option for Consumer Confidence Reports

Your community water system's 2013 Consumer Confidence Report (CCR) is due by July 1.

New Electronic Delivery Methods

Over the past few years, a number of community water systems have asked whether the CCR rule allows electronic delivery of the CCR to customers. EPA evaluated several electronic delivery methods to determine which forms meet the CCR rule. These new methods will improve transparency, maintain or increase readership, and reduce financial burden.

If you are considering using electronic delivery methods for your CCR, contact DWGB to discuss which methods may work best for you.

Instructions

To help you produce an acceptable report, CCR and contaminant chart templates were created. If you use the templates, you must fill out and print both the tri-fold and contaminant chart templates with information about your water system. Refer to the document "Guidance for Preparing a CCR" for help completing the report and filling out the templates. This document and the templates are avail-

able at <http://des.nh.gov/organization/divisions/water/dwgb/capacity/consumer.htm>.

After you complete this year's CCR and distribute it to your customers, send the report to DWGB with the CCR certification form. Be sure to keep copies of both documents on file for at least three years. It is the responsibility of the owner to assure that both the CCR and CCR certification form reach our office by the required date; otherwise violations may be issued to the water system. The DWGB randomly selects and reviews for content 10 percent of the approximately 700 CCRs received each year.

Questions

If you have general questions about your CCR, contact Deb McDonnell at (603) 271-6703 or debra.mcdonnell@des.nh.gov. For technical or rule-related CCR questions, including questions about electronic delivery methods, contact Adam Torrey at (603) 271-2950 or adam.torrey@des.nh.gov.

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