Keeping Up
Shaun Fielder, Executive Director

During my association travels this summer, it's been good to see a number of transportation construction projects taking place across Vermont. While some consider a stop or delay while on the road as an inconvenience, my thoughts focus on the jobs filled and also on the improvements taking place on important infrastructure—both of these items are good for our economy.

In addition to transportation construction, it is good to know many water and wastewater systems are also continuing to make improvements to their infrastructure. Many are doing this via the stimulus funding. At this point the country still is facing a tenuous economic situation. For the short term, we all continue to do more with less and it will be another tight budget year for Vermonters and the country.

You having to do more with less means your responsibilities and task load are increasing, so it is imperative you work smarter. To work smarter, consider the following points:

1) Be proactive. It is harder and harder to stay ahead of the curve but you need to. Take a few minutes every day to prioritize your work. Some type of notebook (hard copy or computer version) with calendar and task lists is needed to keep track of all the information thrown at us these days.

2) Begin with the end in mind. If you don’t know where you are going, you are not likely to get there.

(Continued on page 9)

Cyanobacteria (Blue-Green Algae) in Lake Champlain  Liz Royer, Source Protection Specialist

While we welcome the warmer weather each summer in Vermont, there are several additional concerns for drinking water systems during these months. For Lake Champlain and a growing number of inland lakes, cyanobacteria (also called blue-green algae) blooms or shoreline scums can become a public health threat. Cyanobacteria itself is not always toxic, but several species may produce natural toxins. When these algae die and break down, toxins can be released into the water. Two of the most common cyanotoxins found in Lake Champlain are anatoxin-a (e.g., Anabaena species among others) and microcystin (e.g., Microcystis species among others).

After the death of several dogs in 1999 due to cyanotoxic poisoning, Vermont established a cyanobacteria monitoring program for Lake Champlain. This program includes lake water sampling done by the Vermont DEC Water Quality Division and University of Vermont (UVM) Rubenstein Lab and shoreline testing done by citizen volunteers coordinated by the Lake Champlain Committee.

After the samples are analyzed, the results are reported to the Vermont Department of Health. VDH provides a website with weekly updates from this monitoring program, including location of blooms, during the summer and fall each year. The online status for blue-green algae on Lake Champlain can be found at: http://healthvermont.gov/enviro/bg_algae/weekly_status.aspx

The Vermont DEC Water Supply Division has worked with the Water Quality Division, Vermont Department of Health, and UVM to develop cyanobacteria testing and response protocols for public water systems using Lake Champlain as a source. If a bloom is seen near an intake, the water operator is responsible for sending raw and finished water samples to the Vermont Department of Health Laboratory (VDHL) for analysis. These samples are then analyzed for anatoxin-a and microcystin. If either of these toxins are found, the protocol outlines the procedures for follow up testing and notification.

In addition to the lab testing, community (municipal) water systems in the northern portion of Lake Champlain were asked to participate in a pilot study this summer. Alburgh Fire District #1, Alburgh Village, Grand Isle Consolidated, Grand Isle Fire District #4, North Hero, South Hero Fire District #4, Saint Albans City and Swanton Village have all agreed to participate.

(Continued on page 9)
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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June 11, 2010

Dear Mr. Fielder:

I would like to take this opportunity to thank you and your staff for the services that you have provided to the Town of Royalton. Up until now the Royalton Wastewater Treatment Facility has not been a member of the Vermont Rural Water Association and we have still found that the VRWA has provided their services and guidance in a timely and professional manner. VRWA has been instrumental in addressing issues with our ageing sewer infrastructure.

The Town of Royalton is currently conducting a study to determine capital improvements for our nearly 30 year old treatment facility. The cost of the study has been greatly reduced due to the great resources that your organization provides. Without a resource such as VRWA the Town of Royalton and other municipalities in Vermont would have a difficult time addressing issues without over burdening tax payers.

Thank you for all that your organization does!

Sincerely,

Nathan P. Cleveland
Executive Director

News Leaks is the official publication of VRWA. It is published quarterly for distribution to operators, owners, managers and board members of water and wastewater systems in Vermont, as well as to association members, water and wastewater service providers, regulators, and other friends. Opinions expressed in the newsletter do not necessarily reflect the views and policies of VRWA.

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2010 Proposed Revisions to the Total Coliform Rule
The Environmental Protection Agency (EPA) is proposing revisions to the 1989 Total Coliform Rule (TCR), a national primary drinking water regulation (NPDWR). The purpose of the TCR is to protect public health by ensuring the integrity of the drinking water distribution system and monitoring for the presence of microbial contamination. EPA anticipates greater public health protection under the proposed revised requirements, which are based on recommendations by a federal advisory committee. The proposed revisions to the TCR will:

- require public water systems that are vulnerable to microbial contamination to identify and fix problems, and
- establish criteria for systems to qualify for and stay on reduced monitoring, thereby providing incentives for improved water system operation.

For additional information, please visit the following website - http://water.epa.gov/lawsregs/rulesregs/sdwa/tcr/regulation.cfm

Comments on this proposed rule change are due to EPA by October 13, 2010. Comments on the draft of the “Proposed RTCR Assessments and Corrective Actions Guidance Manual” are due November 30, 2010.

Accepting Public Comments on the 2010 Water Supply Rule Proposed Revisions
The Agency of Natural Resources is proposing to revise the Water Supply Rule. The major purpose of the rule revision is to adopt and incorporate by reference federal drinking water regulations promulgated after the last Water Supply Rule Revision dated April 25, 2005 and make minor revisions to the rule. The new federal rules requiring adoption include the: January 4, 2006 Stage 2 Disinfectants and Disinfection Byproducts Rule; January 5, 2006 Long Term 2 Enhanced Surface Water Treatment Rule; October 10, 2007 Lead and Copper Short-Term Regulatory Revisions and Clarifications; and the November 8, 2006 Federal Ground Water Rule. Language has also been included at the request of the Ground Water Coordinating Committee regarding standing column geothermal heating systems. (This rule revision does not incorporate the requirements of ACT 199 Relating to Large Groundwater Withdrawal. Separate rules are currently being written for ACT 199).

The Water Supply Division is accepting written comments on the rule revisions until September 17, 2010.

Written comments may be submitted to Jean Nicolai at jean.nicolai@state.vt.us or addressed to:

Water Supply Division
Old Pantry Building
103 South Main Street
Waterbury, VT 05671-0403.

For additional information please contact Jean Nicolai, Operations and Compliance Chief at jean.nicolai@state.vt.us or direct line at 802-241-3405.
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Otter Creek Engineering is a growing consulting engineering firm with a solid reputation as committed professionals. Founded in 1998, the firm has grown to a staff of sixteen in two Vermont offices. Our goal is controlled growth based on solid project backlog and financial stability. The firm’s focus has been on design and construction review of a broad spectrum of water, wastewater, site development, stormwater, roadway, hydrogeology, and environmental remediation projects. We provide full services including topographic surveys, engineering design, permitting and funding assistance and construction phase services.

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Two American companies and a small Alaska city are drawing closer to an export agreement that ships fresh water from North America to a bulk bottling plant in India in order to supply the thirsty Middle East, according to Terry Trapp, the chief executive of True Alaska Bottling, one of the companies in the partnership.

Trapp’s company holds the rights, at a penny a gallon, to export 2.9 billion gallons (10.9 billion liters) per year from the Blue Lake reservoir owned by the city of Sitka, Alaska. Meanwhile the company’s partner in the venture, San Antonio-based S2C Global Systems, is negotiating with developers in India to build facilities at a deepwater port south of Mumbai.

Sitka and Alaska Resource Management LLC, the partnership formed by the two companies, are seeking to be the first to introduce bulk supplies of freshwater, transported in huge tanker ships, as a new commodity in global trade. The concept is straightforward. Where local supplies cannot meet demand, a small group of wildcatter companies and water-rich countries are positioning themselves to provide large shipments of water via 80-million-gallon capacity tanker ships and floating polythene bags—bulk water, in the industry parlance.

“The concept we have with our partner is constructing a water depot in India or the Middle East where water is unloaded and stored with an adjacent bottling tank,” Trapp told Circle of Blue. “The water would then be distributed to countries in two-and-a-half liter or five liter containers.”

The consequences of bulk water exports are not nearly as clear cut. Proposals to export water supplies out of their natural basins have sparked fierce political resistance in some parts of the globe. The Great Lakes region of the U.S. Midwest established laws and regulations over the last decade that sought to ban the practice. Moreover, reliance on imports could perpetuate water-wasting practices in dry regions. And the capacity of wealthier regions to afford their water in five-liter containers could widen the economic and quality of life gulf between rich and poor countries.

**Bulk Water’s Past and Present**

Bulk water transfers are not new. Diversions out of river basins both within and between countries have occurred for decades: Singapore imports water from neighboring Malaysia; Lesotho sends water to South Africa via the Highlands Project; Southern California exists as we know it today because of water channeled from the Sierra Nevada hundreds of miles to the north. Historically, engineers have moved water through pipelines, canals or rivers under government control and oversight.

Water is also exported by bottling companies. But the volumes sold from a single source are much smaller than the volumes available in bulk. Danone, the world’s second largest bottled water producer, sold 18 billion liters (4.8 billion gallons) in 2009 from all its bottling plants combined, a sales volume that is roughly half of the water available from Sitka.

What is new is the idea of shipping water in tankers across oceans. It differs in scale and the notion that big commercial advantages exist when a scarce commodity is supplied to eager communities willing to pay the price. Accompanying the shift in supply also is a shift in perspective, said George Paterson, chief executive of Aquazeal, a New Zealand company with water rights for export.
“Long-term I see that municipalities will import pure water for human consumption and use desalinated water for lesser uses (e.g. irrigation),” Paterson wrote in an email. “I think what will happen is that there will be a recognition that all water is not the same and that pure water should be reserved for human consumption.”

The Export Plan

In its bid to pioneer the global bulk water trade Alaska Resource Management LLC is focused on sales to water-stressed areas of the Middle East, northern China, southern India and parts of Africa as potential export markets, several sources told Circle of Blue. Though Sitka has made public infrastructure investments to make it easier to load water tankers in Alaska, Alaska Resources Management, LLC has not yet found a place to unload. A potential deal to secure off-loading facilities in Fujairah, United Arab Emirates fell through earlier this year because the company could not get the real estate next to a bottling plant.

If ARM breaks through the impediments, it could set off a run on Sitka’s 6.2 billion gallons per year of unallocated water rights. Two companies in the last six months have sent letters of inquiry about the city’s water supply for export to the Sitka Economic Development Association – American Water Company and Aqueous International, a subsidiary of a Luxembourg-based company.

Although no significant volumes of bulk water have been sold, A phrase on Aqueous International’s station-ary perhaps captures best the prevailing mood in an industry that sees big profits in moving water by tanker. “Not a dream – inevitable!”

Sitka’s mayor, Scott McAdams, has similar sentiments. “I think the idea of selling bulk water to a thirsty planet has merit but its time has not yet arrived,” McAdams said. “Watersheds around the planet are under assault. The value of a commodity like water is only going to go up over time.”

Currently, S2C Global is discussing a site near Mumbai, according to Trapp. Those discussions will go on for several more weeks, Trapp told Circle of Blue. Representatives from S2C Global did not return phone calls or email messages for this article.

The site in India would be used as a regional hub to supply the Indian market and as a supply depot for the Middle East, Trapp said. Water could be offloaded to smaller vessels for the final leg to the Middle East, or it could be transported in bottles.

“What’s missing is infrastructure on the receiving side,” Trapp said.

Once negotiations in India are concluded, ARM plans to focus attention on loading facilities in Sitka and lease contracts for tanker ships, he added.
Rattle Snakes at the Water Plant

By Aaron Perez, Water Systems Specialist

I was born and raised in Central Vermont and had never heard of the Eastern Timber Rattler until a couple of years ago. I was on a site visit in a small town in southwestern Vermont when the operator casually mentioned that he had recently seen a four foot Eastern Timber Rattlesnake near the reservoir that we were inspecting at the time. I was surprised and a little dismayed, not being a huge fan of snake’s in general (which I admittedly know very little about). I found myself walking much slower and more carefully on the way back to the plant. But after seeing some great photos taken by the operator and doing some research on the State of Vermont Agency of Natural Resources web site the prospect of seeing one of the rare snakes seemed much less scary.

The Operator who we will call Tim, asked me not to mention the name of the town or his name because, despite the fact the Eastern Timber Rattler is protected by law as an endangered species in New York and Vermont, their have been instances of people hunting them for their rattles as well as killing them out of fear.

According to the State of Vermont Agency of Natural Resources, at the turn of the century the Eastern Timber Rattlesnakes could be commonly found in Southern Vermont and Northern New York state, both of which placed bounties on them until 1970. However by then the population had already been severely reduced and eventually they were listed as endangered species.

When I asked Tim about how he felt about having the snakes around he said “They really don’t want anything to do with me, they just want to be on their own way.” He also was very much in favor of the laws that protect the rattlesnakes and was not at all concerned for his safety. Tim, who has been at this treatment plant for 24 years first saw a rattlesnake just down the road from the plant in 1988. The next sighting came in July, 2005 when he found two rattlesnakes living underneath the lawn tractor shed. In the fall of 2006, the assistant operator was at the reservoir when he was surprised by a rattlesnake coiled up in the path at what he called an “uncountable close distance.” The pictures that accompany this article were taken in 2009. Tim and his assistant found three different rattle snakes during the course of that year.

So it’s live and let live at the water plant when it comes to their slithering neighbors.
Can Your System Generate Power and Reduce your Operating Costs? by Phil Acebo, Training Specialist

Will energy cost in the future rise? I think we all know the answer to this question. Whether it’s fuel from hydrocarbons for our transportation or wood to heat our homes; energy will become more expensive. Then, if we add to this equation the uncertain fate of Vermont Yankee, Vermonter will probably be paying more for energy in the future.

We’ll always need to consume energy, but how we use it and how much we will need to change, and we’ll need to be smarter and more efficient users of this valuable resource. Along these lines of thinking, Ben Gordesky, DC Energy Innovations, will be presenting classes October 27th in Springfield and December 16th in Montpelier. Ben will explore the potential for the generation of wind, solar, and hydro power by water and wastewater systems to help offset operating cost.

Most of us have some rudimentary understanding of wind and solar potential, but using our existing water flow to generate hydro power may be a topic unfamiliar to some. Will it work for your system? We don’t know. But through analysis, maybe this potential exists for your system.

This class will provide an opportunity for operators to explore some of the new technology available to see if there are potential opportunities for them.

Since the topic is energy efficiency, let me mention the potential for possible savings you could recoup from an energy audit by Efficiency Vermont. As many know, Efficiency Vermont is funded by an assessment to all users. We recently had a class instructed by George Lawrence, Efficiency Vermont, on how to keep energy cost down for water and wastewater facilities. They offer a chance for you, at no cost, to look at your energy consumption to see if there are opportunities to use energy more efficiently. If you are interested in this service, you can contact George at glawrence@veic.org or toll free 1-888-921-5990 ext 1082. I look forward seeing you in class and exploring energy efficiency.
The VDHL is unable to offer routine cyanotoxin monitoring of water sources for public water suppliers, making a field test kit a cost-effective screening method for both the VDHL and the public water suppliers.

While there is not a perceived threat to drinking water intakes at this time, these kits are being evaluated to determine if they can provide a real-time, reliable indicator of cyanobacterial toxins’ potential to reach these intakes.

In case of a positive test result, raw and finished water samples will be sent to the VDHL to confirm the findings and the accuracy of the test strip.

These eight water systems are evaluating a rapid field test for cyanotoxin using strip test kits. Water system personnel were trained during June and will take monthly raw water samples during the first weeks of July, August, September, and October. The raw water will be analyzed for the presence of microcystin using the strip test kits provided by Vermont Rural Water.

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headed, it is going to be tricky to properly navigate and outline an effective approach to get there.

3) Put first, first. Often it is not the most important matter that needs to be done first, but the item that is most sensitive.

4) Strive for a win/win situation. Don’t take this to mean you should mediate everything, but understanding both sides of an issue can lead to a positive final outcome.

5) Understand and then be understood. Listening is an important skill.

6) Synergize. Even though politics impact all of us, keep to the objectives and don’t take things personal.

7) Sharpen the saw. Always strive to improve your knowledge base and skill set. This can be accomplished through many varied trainings and articles on different subjects. There is always a new trick or technique to pick up on to be more efficient.

The more I work in the water sector the more I recognize and see examples of a top notch workforce. In these tough economic times, let’s all continue on a path of high productivity—it is what is needed to continue to strengthen Vermont’s and our national economy.

Microcystin Test Kit Training for Alburgh Water Operators

“Two of the most common cyanotoxins found in Lake Champlain are anatoxin-a and microcystin.”

“Cyanobacteria (Blue-Green Algae) in Lake Champlain ” continued from cover

News Leaks, Fall 2010
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