

In The Main

A Quarterly Newsletter for
Public Water Systems

Ground Water Rule Requirements Begin December 1

By Denise Springborg

Rule Basics

Triggered Source Water Monitoring

Beginning December 1, 2009, all public water systems (PWS) with wells that do not have treatment and/or disinfection capable of killing 99.99% (4-log) of viruses must conduct Ground Water Rule (GWR) “triggered source water monitoring” at their wells each time the PWS is notified of a total coliform positive sample collected under routine Total Coliform Rule (TCR) bacteria monitoring (*see the MassDEP*

website for new triggered monitoring flowchart). The source sample(s) must be tested for the appropriate fecal indicator and must be collected:

- within 24 hours of being notified of the TCR total coliform positive sample;
- prior to any treatment or chemical addition;
- at all groundwater sources active when the TCR total coliform-positive sample was collected.

PWSs *may not* shock-chlorinate any well prior to taking a GWR triggered source water sample; MassDEP approval is now required prior to shock chlorination.

If the source sample(s) is fecal indicator positive, a Tier 1 public notification (acute health concern) must be issued and an additional five source water samples collected within 24 hours at every

Please see “GWR” page 3

Update on Emergency Response Regulations

By Paul S. Niman

On May 2, 2008, MassDEP promulgated revisions to the Massachusetts Drinking Water Regulations, 310 CMR 22.00, regarding emergency response. The new regulations include specific requirements for emergency response plans (ERPs) and notification requirements for reporting emergencies to MassDEP and the local board of health. The MassDEP/Drinking Water Program also added Chapter

12 to the *Guidelines and Policies for Public Water Systems*, which includes additional emergency response planning requirements. Each public water system (PWS) is expected to comply with the revised regulations and guidance.

On July 1, 2009, the MassDEP mailed a notice that **all PWSs must demonstrate compliance with the new regulations by completing the ERP Compliance Checklist and submitting it to the appropriate MassDEP**

regional office by December 31, 2009. The ERP Compliance Checklist was included in the notification and is available on the MassDEP webpage at: <http://www.mass.gov/dep/water/approvals/dwsforms.htm#er>. Failure to submit the ERP Compliance Checklist by December 31, 2009 or to complete it thoroughly will result in MassDEP taking enforcement action. In addition, MassDEP may review the ERP Compliance Checklist and ERP during

Please see “Regulations” page 2

Regulations - Continued from page 1

sanitary surveys or other inspections, after an incident, or upon request. The ERP Compliance Checklist must be completed by all community (COM), transient non-community (TNC), and non-transient community (NTNC) PWSs. TNC and NTNC PWSs that plan on shutting down during an emergency are not required to complete Section C, Parts II and III. If you are a TNC or NTNC PWS and you are planning on shutting down during an emergency, you must check with your local board of health to make sure this is acceptable.

If you have questions regarding emergency preparedness, please contact your regional office or Paul Niman at 617-556-1166 or paul.niman@state.ma.us. ITM

Correction: The August issue credited Jennifer Wood as the author of the article, "Is SRF Financing for You?". There were two authors for that article: Jennifer Wood (Boston) and Stella Tamul (Central).

In The Main

Commonwealth of Massachusetts

Deval L. Patrick, Governor
Timothy P. Murray, Lt. Governor

Executive Office of Energy & Environmental Affairs

Ian A. Bowles, Secretary

Department of Environmental Protection

Laurie Burt, Commissioner

Division of Watershed Management

Glenn Haas, Acting Asst. Commissioner

Drinking Water Program

David Y. Terry, Program Director

Marie Tennant - Editor/Designer 617-292-5885
Marie.Tennant@state.ma.us

Department of Environmental Protection
1 Winter St. - Boston, MA 02108

www.mass.gov/dep

Staff Spotlight



Terry Dayian, formerly Terry Martin, joined the Southeast Regional Office of MassDEP in September of 1991 as an Environmental Analyst. Her primary duties include water quality data management, sanitary surveys, new source approvals and

coordination with the Bureau of Waste Site Cleanup for those hazardous waste sites affecting public water supplies.

Terry is on the Ground Water Rule Committee and Source Approval Committee, and is a member of the Mass Water Works Association (public relations and membership committee), Plymouth County Water Works Association (former Education Committee Chair) and Barnstable County Water Utilities Association. Terry is also on the committee that coordinates the Annual Southeastern Massachusetts Drinking Water Fair.

Prior to joining MassDEP, Terry worked in the private sector as a consultant on hazardous waste sites for Certified Engineering and Testing Co., Inc., and as a nuclear chemistry technician at Palisades Nuclear Power Plant in Michigan.

Her education background includes a B.S. in Geochemistry from Bridgewater State College and graduate course work in contaminant hydrology at Western Michigan University. When not working, Terry would prefer to be fishing. ITM

Need New Fluoride Equipment?

Look for fluoride program grants for equipment upgrades for your system coming this spring. For more information on this please contact Lynn Bethel of MA Department of Public Health at 617-624-6074 or at lynn.bethel@state.ma.us.

fecal indicator positive well. If any of the additional samples are positive, an investigation will be conducted and corrective action taken to address the source of the contamination. 4-log disinfection and/or treatment will only be required **if** the PWS has multiple fecal indicator positive samples in their well, **and** the source of contamination cannot be identified and eliminated **and/or** a problem at the PWS that might lead to contamination cannot be identified or fixed.

Triggered Source Water Monitoring and the Total Coliform Rule

GWR triggered source water monitoring **does not** replace routine and repeat bacteria sampling for TCR compliance. PWSs should continue to take all TCR samples – “business as usual.” GWR triggered source water samples are taken **in addition** to TCR samples.

Important Note: If a PWS collects a source water sample and tests it for total coliform because 1) the system is required to under the Total Coliform Rule **or** 2) the system is interested in their source water quality, **and** the sample result is total coliform positive, the sample must also be tested for *E. coli*. If the sample is *E. coli* positive, this sample serves as a GWR triggered source water sample and five additional samples must be collected at the source and tested for *E. coli* and

subsequent GWR requirements followed. Enterococci testing is not required under these circumstances. See the MassDEP website for flowchart detailing these requirements.

Compliance Monitoring

PWSs that provide treatment and/or concentration-time (CT) to achieve at least 99.99 percent (4-log) inactivation or removal of viruses, must demonstrate through compliance monitoring that the treatment consistently meets all GWR requirements. These systems must receive MassDEP certification of 4-log treatment by December 1, 2009 and begin compliance monitoring thereafter. See the MassDEP website for more information. Triggered source water monitoring is not required for these systems. These systems must receive MassDEP certification of 4-log treatment by December 1, 2009 and begin compliance monitoring thereafter. See the MassDEP website for

more information. Triggered source water monitoring is not required for these systems.

Prevent GWR requirements from affecting your water system:

- 1) Practice good bacteria sampling techniques!
Remember: a total coliform positive sample collected under your routine bacteria sampling (for the Total Coliform Rule), triggers GWR source water sampling, so no positive equals no GWR sampling.
- 2) Prevent potential contamination from entering your well. A properly maintained, constructed, and protected well should test negative and thus no additional GWR requirements will apply to your water system.

Deadlines and Information:

The GWR is effective December 1, 2009. All PWSs must have a raw water sample tap at their well, and all community and non-transient non-community systems must have a connection for applying emergency chlorination. For more information and regional contacts, go to <http://www.mass.gov/dep/water/drinking/systems.htm#gwr>. For one-on-one technical assistance, contact the Massachusetts Coalition for Small System Assistance at <http://www.masmallwatersystem.org>.



ITM

Boil Water Orders - Prevention and Response

By Yvette DePeiza

Boil Water Orders are issued by MassDEP's Drinking Water Program (DWP) to public water systems (PWS) for distribution to their consumers when MassDEP determines that the consumers of the particular PWS should take precautionary measures with their tap water. These Boil Water Orders or advisories result in public announcements advising the public that they should boil their tap water for drinking and other human consumption uses like cooking, hand washing, brushing teeth, etc. Boil Water Orders are preventative measures issued to protect public health from waterborne infectious agents that could be or are known to be present in drinking water.

MassDEP records indicate that less than 1% of the 1700+ PWS in Massachusetts experience Boil Water Orders each year. However, a few of the Boil Water Orders this year lasted longer than usual resulting in more widespread media coverage than normal.

Some of the reasons that may lead MassDEP to require a PWS to issue a Boil Water Orders include:

- + Precautionary measure when there is concern that contamination may occur; for example, local emergency repairs in the distribution system
- + Confirmed fecal and/or *E. coli* bacteria present in the distribution system
- + Unacceptable levels of disease-causing bacteria (e.g., fecal indicator), viruses, or parasites in the water system anywhere from the source to the tap
- + Unacceptable levels in the cloudiness (turbidity) in the water
- + Failures in the treatment process
- + Systems with negative pressure zones

- + None or inadequate disinfection on a system that is required to disinfect
- + Dead animals (mice, rats, birds, etc.) found in an unchlorinated groundwater source
- + In lieu of routine bacteria sampling where chronic contamination has occurred or is suspected
- + Equipment failure resulting in inadequate disinfection and/or filtration of a surface water or groundwater under the influence of surface water supply, when the equipment is not immediately repairable

Because the reasons for issuing a Boil Water Order vary, it is very important for PWSs to be ever-vigilant in monitoring and maintaining their systems and keeping their emergency response plan up-to-date and handy. PWSs must be prepared to respond quickly to a Boil Water Order. All PWSs should have a written procedure to follow when MassDEP requires a Boil Water Order. Preparing advance information (FAQs) that can answer the most basic consumer questions are helpful (see next page).

PWSs should always work closely with their MassDEP contacts in the regional offices. Contacting MassDEP whenever you have a concern or question will help you to "do the right thing" if your system has a situation that the public should be aware of. ^{ITM}



Typical Boil Water Order FAQs

By Yvette DePeiza

Is it necessary to boil all water in the home during an advisory or order?

During Boil Water Advisories or Boil Water Orders, you should boil all water used for drinking, preparing food, beverages, ice cubes, washing fruits and vegetables, or brushing teeth. Severely immunocompromised individuals should always boil their tap water for the purposes noted above. In the event that boiling is not practical, the PWS may recommend an alternative supply known to be safe (e.g., bottled water) or may direct you to disinfect the water using household bleach.

It is not necessary to boil tap water used for other household purposes, such as showering, laundry, bathing, or washing dishes. Adults, teens, and older children can wash, bathe, or shower; however, they should avoid swallowing the water. Toddlers and infants should be sponge-bathed to avoid swallowing.

How should tap water be boiled properly?

Water should be placed in a heat-resistant container or in an electric kettle without an automatic shut-off and brought to a rolling boil for 1 minute to kill all disease-causing organisms.

Water can also be boiled in a microwave oven using a microwave-safe container, but it is advisable to include a glass rod or wooden or plastic stir-stick in the container to prevent the formation of superheated water (water heated above its boiling point, without the formation of steam). The water should then be cooled and poured into a clean container or refrigerated until you are ready to use it.

I have a water treatment device; do I still need to boil my drinking water?

If the device is designed to improve the taste, odor, or chemical quality of the water, such as activated carbon filters, it is still necessary to boil the water. Devices designed to disinfect the water, such as UV light units, may be used as an alternative to boiling. If the water is cloudy, filtration may be required

before disinfection. Check with the manufacturer if you are not certain.

Are extra precautions necessary during a waterborne outbreak?

If the Massachusetts Department of Public Health (DPH), working with MassDEP, determines that there is a waterborne disease outbreak, MassDEP and MassDPH will advise the PWS and consumers of any other precautions that are necessary.

When is a Boil Water Advisory or Order lifted?

Boil Water Advisories or Boil Water Orders are lifted by MassDEP when the water is considered safe and no longer poses a threat to public health.

What should I do when the Boil Water Advisory or Order has been lifted?

MassDEP and the PWS will provide specific instructions. Consumers should flush water pipes within the home. When flushing it is important to carefully follow the instructions provided. Water heaters may need to be disinfected and flushed to remove any contaminated water. Some types of water treatment devices may need to be disinfected or replaced before being used. Check with the manufacturer for details.

Is additional information on Boil Water Advisories available?

For additional information on Boil Water Orders, Visit the MassDEP website at <http://www.mass.gov/dep/water/drinking/systems.htm#emerresp>.

ITM

CCCP: 2008 Audit Report

By Anita Wolovick

MassDEP Drinking Water Program (DWP) recently conducted a full review of all 2008 Annual Statistical Reports (ASR) on community public water systems (PWS) that are required to implement the Cross Connection Control Program (CCCP). This full-scale desktop audit was in part a result of last year's CCCP desktop audit that was conducted on 5 random systems, resulting in MassDEP determining that a full review was needed to evaluate PWS compliance with Massachusetts Cross-connection Control Regulation 310 CMR 22.22.

Background

On a yearly basis, MassDEP sends each system an ASR that contains questions relative to the many regulatory programs. Each of the CCCP questions relates to the PWS responsibilities as specified in 310 CMR 22.22. The ASR instructions specifically state that by completing and returning the ASR to MassDEP by the specified date, the PWS will have fulfilled the annual

reporting requirements as a registered public water system, and that prompt and accurate submittals also assist MassDEP in planning and implementing its drinking water programs.

If a PWS fails to complete and return the ASR forms by the specified date, or fails to provide the required information, the PWS will be subject to enforcement action. It is important to note that MassDEP made PWSs aware of its planned audit program and changes to the 2008 ASR through the 2008 Annual Cross Connection Control Program training and previous *In the Main* articles. (<http://www.mass.gov/dep/public/watline.htm>.) A PWS that received a notice of noncompliance (NON) as a result of this audit is not required to report this enforcement action in the annual Consumer Confidence Report or in a public notification.

Lesson Learned from the Audit

As a result of the 2008 ASR CCCP audit of 232 systems, 74 PWS were found to be in noncompliance with the reporting requirements of the ASR and received an NON that required the PWS to provide missing information. Of those 74 systems, 36 (almost 50%) utilized the services of a third party consultant for running various aspects of their CCCP.

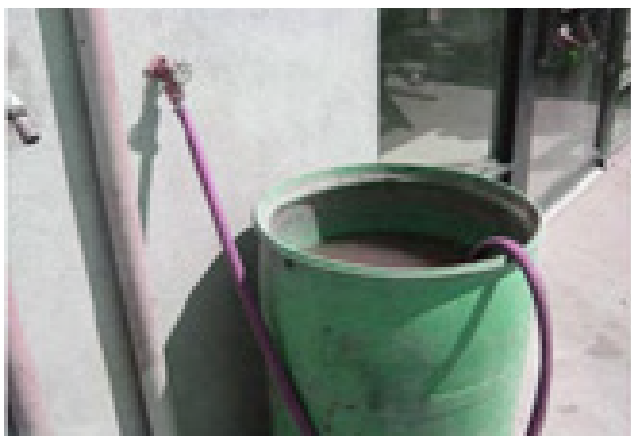


There were two areas on the 2008 ASR that consistently lacked the required information: Tables C1 and C2. The

first, Table C1 - Summary of Facilities Surveyed did not, in many instances, report the total number of facilities that are served by the system. **MassDEP considers this information to be a critical component of a system's CCCP in order to identify the types of hazards that exist in their system.** In the event of a cross connection incident the PWS will know what potential contamination is present at a facility and how to respond accordingly.

The second area that lacked information was Table C2 – Summary of Installed Devices and Assemblies. In prior years the PWS was required to submit a list of all reduced pressure backflow preventers and double check valve assemblies installed on their system. In lieu of a list of these devices, the 2008 ASR required the PWS to provide a summary of these devices. In most instances this information was not provided in its entirety. **This change in the reporting requirement directly correlates to MassDEP's efforts to reduce the volume of paper that a PWS had submitted in the past, yet affords the PWS the ability to remain in compliance.**

Other areas of deficiencies in the audit findings that warrant noting are:



- * A third party consultant was listed as the CCCP coordinator.

310 CMR 22.22(3)(b)3 states that a public water system may be a contractor, subcontractor, or consultant to assist in the program implementation; however, every public water system shall continue to be responsible for compliance with 310 CMR 22.22. Therefore, the CCCP coordinator must be a PWS staff member.

- * PWS with Containment Policies

A PWS that has a locally mandated containment policy is reminded that devices required under this policy should not be reported to MassDEP. The only devices that must be reported are those required by 310 CMR 22.22.

The 2008 ASR state-wide audit provides MassDEP with valuable

information that will help drive the direction of the CCCP.

MassDEP is continuously striving to make improvements in how we disseminate information, in how we utilize collected data, and in how we aid in PWS compliance. Several ways in which MassDEP will be moving forward include:

- * Meeting with a small group of PWSs to gather input into the ever changing requirements and goals of the CCCP;
- * Continuing to improve ways in which a PWS provides information through the electronic reporting system that will allow for the paperless submittal of the ASR (See page 12);
- * Amendments to Chapter 9 of the MassDEP Guidelines that address real world cross connection issues;
- * Updating the cross connection program plan to ensure that it is an integral part of the system's emergency response plan, and include system procedures for

evaluating cross connection concerns during a microbial or chemical incident.

Cross connection events do occur and a well run cross connection control program is the first line of defense in preventing the contamination of a PWS, which is the ultimate goal of MassDEP's CCCP. MassDEP will continue to perform field and desk audits and annual training to support PWS cross connection programs and maximize public health protection.

For more information visit the website at <http://www.mass.gov/dep/water/drinking/systems.htm#crosscon>. If you have any questions on cross connection control you may contact your regional office. In Boston please contact Otavio Paula-Santos at 617-556-1085, Otavio.Paula-Santos@state.ma.us or Anita Wolovick at 617- 292-5920, Anita.Wolovick@state.ma.us.

ITM

Influenza Fact Sheet

Reprinted from ASDWA Weekly Update - 9/4/ 2009
<http://www.asdwa.org>

EPA has published a "Pandemic Influenza Fact Sheet for the Water Sector." Pandemic flu could affect the capability of water system operators to operate their systems adequately due to increased absenteeism at their systems and at other interdependent sectors that provide essential materials and supplies. This fact sheet provides information to assist the water sector in integrating pandemic planning into existing business continuity and emergency response plans and reducing the risk to public health that would be caused by disruption in operation of water systems.

In addition to background information on pandemics, potential impacts, and possible interventions, the fact sheet provides references guidance materials offered by EPA and other organizations. The fact sheet is available at: <http://cfpub.epa.gov/safewater/watersecurity/pandemicflu.cfm>.

ITM

Visit the CDC website <http://www.cdc.gov/h1n1flu/> for clinical and more technical information options and to find out about some of the social media tools. You can also go directly to www.flu.gov to find information with a broader public appeal.

Practicing Chemical Safety

By Frederick Barker

Whether you are an operator or regulator, think *safety* next time you walk into a room utilizing chemical feed equipment, as accidents do happen. Most of the time they occur when you least expect it. This article will focus on accidents involving personal safety, and not chemical overfeed.

MassDEP has a list of over 35 different chemicals that may be approved for treating your water supply and are present as a gas, solid, or liquid. Each chemical presents a different challenge to observe and you must practice to protect yourself from personal injury, or a trip to the hospital emergency room can be the result.

When a consultant designs your water chemical treatment system, they will specify the personal operator safety equipment you will need as well as the system equipment to be installed. Depending on the chemical used, personal operator safety equipment will consist of several of the following items:

- Full face shield
- Splash goggles and safety glasses
- Rubber apron or other protective clothing
- Rubber or chemical resistant gloves
- Rubber or chemical resistant boots
- Self contained breathing apparatus air tank
- Respirator
- Hard hat
- Earmuff

These personal operator safety items may be used or shared

by any of the operators, or may be used by only one operator depending on the circumstances.

Other operator safety equipment will usually consist of many of these following installed items:

- Viewing room panel
- Deluge safety water shower
- Safety water eyewash
- Ventilation exhaust fan
- Ventilation air inlet louvers
- Gas detector/sniffer (chlorine gas)
- Spill absorbent
- Alarms (audio and/or visual) connected to sniffer, eyewash, or shower
- Containment or berms around chemical storage container
- Pressure relief valve on chemical metering pump with discharge back to supply tank
- Guardrails & non skid floors
- Signage, NFPA hazardous material signage, and labeling
- Separate room for particular chemical
- Ladder with/without safety cage
- Smoke and fire alarms
- Fire extinguishers
- Ground fault type electrical receptors
- Safety chain on chemical injection nozzle assembly
- Clear splash guards around chemical metering pump
- Small bottle of ammonium hydroxide, 56% ammonia solution, for chlorine leak detection
- Panic type door hardware
- Pipet fillers (lab use)
- Chlorine leak repair kits (A or B type)
- First aid kit
- Various lockout equipment and signs
- Other safety equipment as

recommended by the equipment/chemical manufacturer

To be on the safe side, MassDEP strongly recommends that each operator reads and reviews the Material Safety Data Sheet (MSDS) and Standard Operating Procedure (SOP) that is required for each chemical used at their water treatment plant or well, as well as the Right to Know compliance documents. Operators should also practice safety procedures and attend one or more of the various chemical workshops, training sessions, or seminars offered by MassDEP, Massachusetts Water Works Association (MWWA), New England Water Works Association (NEWWA), etc. Operators should also research and review any OSHA requirements for their facility or work place. In addition, if a safety incident occurs that results in an operator going to the emergency room, MassDEP should be notified. When MassDEP is notified of such an incident it will investigate and provide technical assistance and guidance to the system to prevent future occurrences.

The MassDEP Drinking Water Guidelines (Chapters 5, 6, and 7) list minimum safety equipment and requirements for certain chemicals and equipment used. These updated Guidelines are available at <http://www.mass.gov/dep/water/laws/policies.htm#dwguid>. If you need technical assistance on safety issues please contact your regional office. ITM



MWWA Meeting & Education Seminars

For more information on MWWA seminars call Michele Murch at 978-263-1388.



Managing Underground Safety Training and Dig Safe – Are YOU Safe? (This is a new course.)

Course ID # MWWA 09-011 3 TCHs

The seminar will provide operators with a practical knowledge of:

- MA Dig Safe Laws
- Proper procedures for a safe excavation
- Understanding utility underground marking practices
- Area surveys
- Proper locating procedures

Attleboro Water Treatment Facility
1296 West Street, Attleboro, MA
Thursday, December 10, 2009
8:30am – 12:15pm ITM

ERP Compliance Checklist Due Dec. 31, 2009

By Paul Niman

On July 1, 2009, MassDEP sent notice to all PWSs informing them of the need to comply with the new requirements for Emergency Response Plans (ERPs). Included in that letter was an ERP Compliance Checklist which must be completed and submitted to MassDEP regional office by December 31, 2009. Failure to submit the ERP Compliance Checklist by that date or to complete it thoroughly will result in MassDEP taking enforcement action. If you have any questions regarding the ERP Compliance Checklist, please contact your regional office. ITM

Pharmaceuticals in Wastewater Forum

By Nicholas D. Anastas, PhD.

On September 22, 2009, MassDEP held a forum on Pharmaceuticals and Personal Care Products (PPCP) and Endocrine Disrupting Chemicals (EDC) in Wastewater at the Federal Reserve Building in Boston, MA. Over ninety participants attended, representing federal and state regulatory agencies, wastewater and drinking water operators, environmental advocacy groups, and academia. This is the second national conference sponsored by MassDEP addressing the issues associated with environmental PPCP. The initial event was a PPCP Summit held at the Pilot House in Boston on June 5, 2008. The Commissioner of MassDEP, Laurie Burt, provided opening remarks at both conferences.

The primary focus of the forum was the challenges of and opportunities for treating PPCP/EDCs that have been detected at low concentration in wastewater. Some of the compounds include acetaminophen (*e.g.* Tylenol), caffeine, nicotine metabolites and estrogen. The technical portion of the seminar began with Dr. Nicholas Anastas of MassDEP's Drinking Water Program providing a description of the lifecycle of a pharmaceutical, from its discovery and development, to manufacture and distribution, through prescribing, and finally to disposal and treatment. Dr. James Crook, a private engineering consultant who designed the

Orange County, California, treatment system, described the current state of conventional wastewater treatment design and how they were not designed to remove highly water-soluble pharmaceuticals.

Professor Bruce Brownawell of Stonybrook University in Long Island, New York, gave a specific example of a chemical, commonly used in personal care products like soap and laundry detergents, which was detected in wastewater at concentrations that may be harmful to fish and other wildlife. George Heufelder of the Massachusetts Alternate Septic System Test Center located in Sandwich, MA, provided a comprehensive overview of the potential environmental effects of disposing pharmaceuticals and personal care products into septic systems and outlined opportunities to design septic systems to break down these chemicals more efficiently.

Preventing PPCP/EDCs from entering drinking water is a major challenge for regulators and for public water suppliers. Very low levels of an array of pharmaceuticals have been detected in finished drinking water in other parts of the country. MassDEP is working with the United States Geological Survey (USGS) to analyze raw water from the Merrimack River, which serves as a source of drinking water for approximately 300,000 Massachusetts people, for the presence of PPCPs/EDCs, as well as testing the finished

drinking water post-treatment. The preliminary results are encouraging. So far the drinking water from the Lowell treatment plant is free of pharmaceutical-related compounds. An independent analysis by MWRA also did not find any PPCPs in their source water.

The success of this conference provides a solid foundation upon which to develop and implement management practices that will reduce the environmental impact of PPCPs on the environment. Even though the most significant input source to the environment of pharmaceuticals is from natural elimination from humans and animals, everyone has a stewardship role to play in reducing potential risks from pharmaceuticals in the environment. The pharmaceutical industry can incorporate green chemistry as part of their discovery, development, and manufacturing processes; the medical community can adopt prudent prescribing practices; water and drinking water professionals can support research and development in efficient treatment; and private citizens can demand and practice proper medicine disposal. Maximizing each of these opportunities will improve both environmental quality and improve public health by mitigating the potential concentrations of PPCPs in wastewater and drinking water.

ITM

Water From Thin Air

<http://www.theengineer.co.uk/Articles/Article.aspx?liArticleID=311672>

Published: 08 June 2009

Source: *The Engineer Online*

Scientists at the Fraunhofer Institute for Interfacial Engineering and Biotechnology IGB have discovered a way of obtaining drinking water from air humidity. Working alongside German company Logos Innovationen, the scientists have developed a system that uses a saline solution to absorb moisture from the air. According to the team, this device could be useful in desert environments where there are significant quantities of water stored in the air.

Siegfried Egner, head of department at the IGB, explained: "The process we have developed is based exclusively on renewable energy sources such as thermal solar collectors and photovoltaic cells, which makes this method completely energy-autonomous. It will therefore function in regions where there is no electrical infrastructure."

The system works by running hygroscopic brine down a tower-shaped unit and absorbing water from the air. It is then sucked into a tank a few meters off the ground, in which a vacuum prevails. Energy from solar collectors heats up the brine, which is diluted by the water it has absorbed. Because of the vacuum, the boiling point of the liquid is lower than it would be under normal atmospheric pressure.

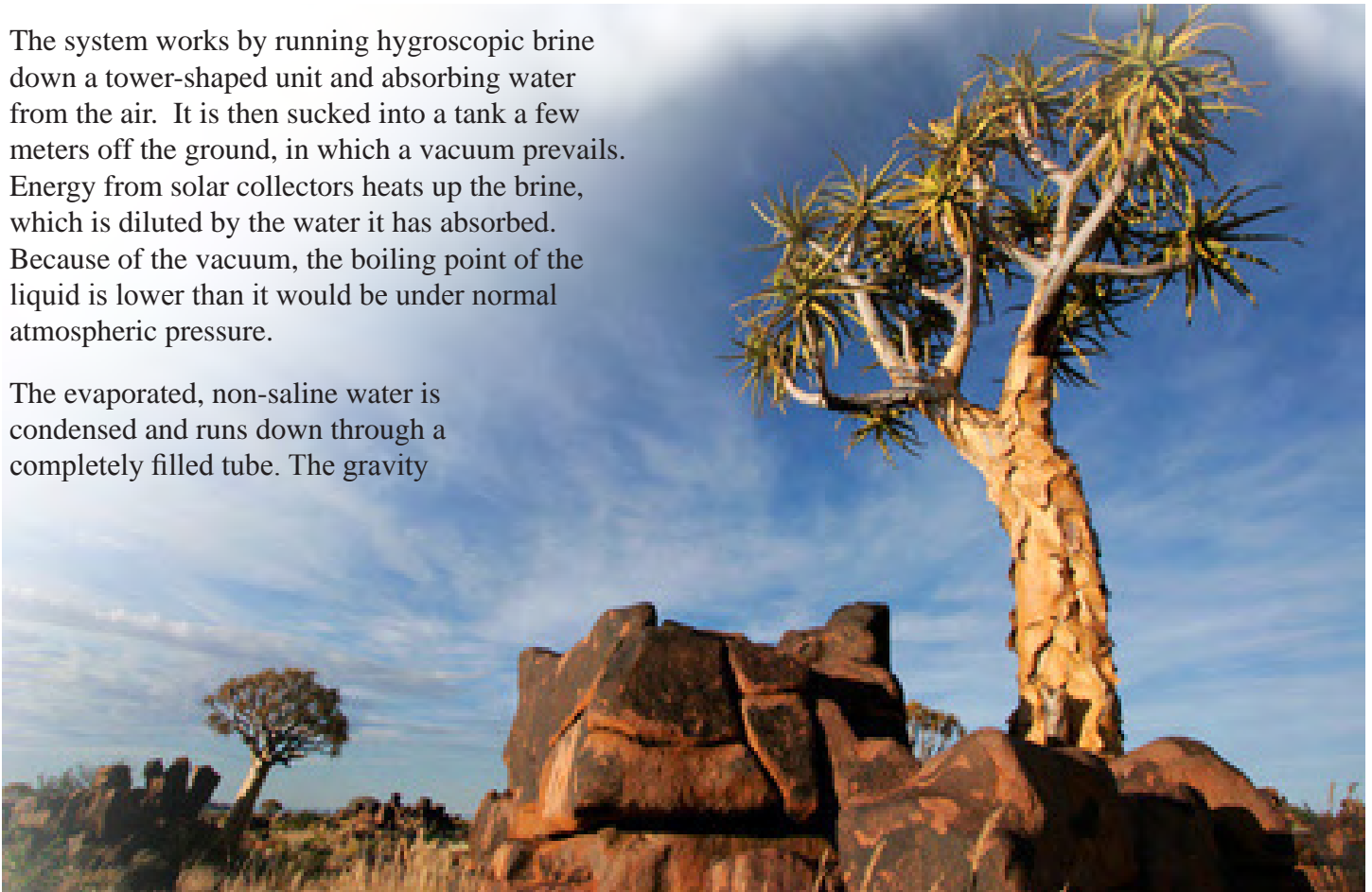
The evaporated, non-saline water is condensed and runs down through a completely filled tube. The gravity

of this water column continuously produces the vacuum and so a vacuum pump is not needed. The re-concentrated brine runs down the tower surface again to absorb moisture from the air.

"The concept is suitable for various sizes of installation. Single-person units and plants supplying water to entire hotels are conceivable," Egner added.

The scientists have already tested prototypes of the system in a laboratory environment and hope to develop a demonstration model in the near future.

ITM





By Joe Cerutti



In The Main
MassDEP
1 Winter Street - 5th floor
Boston, MA 02108

Printed by MassDEP Operations on recycled paper.



Electronic Annual Stats Reports

By Tsuyoshi Yano

MassDEP is excited to announce the upcoming launch of Electronic Annual Statistical Reporting (eASR), part of MassDEP's eDEP online filing system. Scheduled for release in late 2009, eASR will allow certified operators and owners of public water systems (PWS) to securely submit their annual statistical reports online. In following eDEP's mission of providing easy online submission and access to forms and applications, eASR will provide significant time and cost saving benefits to PWSs throughout Massachusetts. With eASR, MassDEP will now be able to provide PWSs with fully pre-populated forms. PWSs will no longer need to fill out an ASR in its entirety, but rather only those sections of the ASR with new or updated information. And with the ability to save and share transactions with other staff members, eASR offers the flexibility of traditional paper forms. In addition, eASR forms have built-in error checking, thereby reducing reporting and data-entry errors. End-users will have the ability to print hard copies of the ASR for their own record keeping purposes. And with official transmittal receipt and confirmation email PWSs will now have an official record of submittal.

In order to take advantage of all the benefits eASR has to offer, certified operators and owners of PWSs will need to set up an eDEP account and submit a proof of identity application form.

The proof of identity will allow you, as either a certified operator or legally responsible person, to file an eASR on behalf of the PWS you represent. In addition to the eASR benefits a PWS proofed account provides a user-friendly view of water quality data uploaded to eDEP by your participating certified laboratories. If you do not already have an eDEP account, you can create an account by going to <https://edep.dep.mass.gov/DEPLogin.aspx> and clicking on the "New User" button. You can access the proof of identity application by going to "Proof of Identity" under the "My Profile" menu item in eDEP. After filling out the online proof of identity you will need to print the form and mail a notarized copy of the proof to MassDEP. Once MassDEP receives your proof of identity form and verifies the information, you will be given the appropriate permissions in eDEP to access eASR.

Although the ASRs may still be submitted in the traditional paper format for the 2009 reporting year, MassDEP encourages all PWSs to submit their ASR electronically via eDEP as it will become the only method of submittal in the future.

MassDEP will be holding training sessions for certified operators, owners, and legally responsible persons of PWSs in late 2009/early 2010. Existing account holders with a PWS proof will receive electronic notification of training opportunities. *ITM*