

# Big Sky Clearwater



Volume XXXVIII, Issue 1 — Spring 2009

## Reflections in the Ripples

By Bill Bahr

This 2009 issue of the Big Sky Clearwater carries on a long tradition in Montana where state regulators of water and wastewater utilities, working in conjunction with researchers and educators at colleges and universities and with consulting engineers, reach out to managers and operators of public water and wastewater systems to improve public water supplies and wastewater treatment plant performance. Along with the efforts of technical assistance providers, such as the Montana Rural Water Systems and the Midwest Assistance Program staffs, Montana's certified operators have a wealth of support to continue the proud tradition in Montana of providing safe drinking water and protecting public health and Montana waters.

We know how important our jobs are; we know it's not just another job.

The Department of Environmental Quality has a responsibility to support the continued advance in improvements in our treatment plants. The job of protecting the public's health requires greater diligence and greater conviction by all of us to meet the needs of our future population. In this issue you will see some of the activities our DEQ programs are involved in; you will read about the passing of some of our friends that came before us; you will get advice about how to do a better job to meet current standards; and, you will recognize that we are not just regulatory personnel, but we are also your friends and neighbors who drink that safe water supplied and rely on the treatment plants that discharge clean waters back into our environment.

Please let us know if the Big Sky Clearwater is a useful tool in communicating with treatment plant operators. We are including a survey so you can give us feedback about this long-standing publication. There may be more effective ways for DEQ programs to connect with Montana operators and managers.

continued on  
page 3

### Inside This Issue

Reflections in the Ripples .....	1
Kalispell WWTP Featured in Treatment Plant Operator Publication .....	4
Every Day is Earth Day from DEQ .....	5
City of Laurel Stands Out in Supporting Education in the Water & Wastewater Operations Field .....	6
Water Conservation—OOPS, I Mean “Sustainability” .....	6
CEC Biennium and the CECs .....	7
Just a Friendly Reminder From the Operator Certification Corner .....	8
Expense Reimbursement Grant Extended ...	9
Operator Exams Passed June 22, 2007– December 31, 2007 .....	10
New Operators/New Certifications – January 2008–2009 .....	11
Self-Monitoring Under the MPDES Permit Program: Completing Accurate DMRs .....	15
Radionuclides Responsible for the Third Highest Water Quality Violations in Ground Water Supply Systems .....	16
Lead & Copper Rule – Short Term Revisions <i>Subtitle: Don't Panic!</i> .....	19
What is GWUDISW and Why Are You Asking for Special Samples? .....	21
New Requirements for Submitting Pumping Tests to DEQ .....	22
Dosage Equation for Liquid Chemical Feeders .....	23
Water Sector Security News & Resources ..	24
The Security Preparedness Contest .....	24
Chemical Security & the Water Sector .....	26
Utilities Helping Utilities .....	27
Free Septic & Well System Training Offered to Montana Residents .....	29
Source Water Protection—Getting There Through Training .....	30
It's Time for Your Well to Get a Check-up ..	32
Nearby State Offers Promotional Tools .....	34
New Magazine Targeting Smaller Acreage Landowners Available .....	34
Serving on County Boards, Districts, Commissions & Committees in MT .....	35
Household Hazardous Waste .....	35
Wellhead Security Cover in Development ..	36
Big Sky Clearwater Survey .....	37
Equipment—Offered FOR SALE by the City of Helena .....	39

# Big Sky Clearwater

Volume XXXVIII, Issue 1

Spring 2009

## The *Big Sky Clearwater*,

a publication of the Montana Department of Environmental Quality, is for water and wastewater operators and managers. The Department welcomes articles of interest and suggestions for articles related to water quality, water and wastewater treatment and the water environment. Articles may be about your treatment plant experiences, or those of others, technical papers or any information that may benefit other operators or managers.

Please submit articles 30 days before publication to:

EDITOR: Big Sky Clearwater  
Montana Department of Environmental Quality  
1520 East Sixth Ave. • Metcalf Building  
P. O. Box 200901  
Helena, MT 59620-0901

*Visit our website at:*

<http://www.deq.mt.gov>

to view “The Big Sky Clearwater” issues electronically

### *Big Sky Clearwater Editors:*

Shelley Nolan

(406) 444-4071 • E-mail: [snolan@mt.gov](mailto:snolan@mt.gov)

*and*

Bill Bahr

Phone: (406) 444-5337 or 444-6697 • E-mail: [bbahr@mt.gov](mailto:bbahr@mt.gov)

The *Big Sky Clearwater* is published by the  
Montana Department of Environmental Quality’s  
Planning, Prevention and Assistance and Permitting and Compliance Divisions

## Reflections in the Ripples - continued from page 1

Please join us in finding effective tools to serve advanced treatment plants with new information and new processes. Fill out the survey on page 37 and be a part of the movement toward a brighter future. Thanks.

### Things some friends taught me ...

**Martha Anne Dow** was a professor of microbiology at Montana State University – Northern who actively promoted and developed the Water Quality Technology degree program that was very useful in training many of the current water and wastewater operators and managers around the state. Martha also worked with DEQ to create the Montana Environmental Training Center in 1988. She served as Director of METC and with me on the steering committee for METC prior to leaving for Oregon in 1992. METC continues to provide continuing education opportunities for certified water and wastewater operators, well drillers, engineers, and has developed an on-going training program in certifying backflow prevention assembly testers.

Martha passed away in the fall of 2007. She left a lasting legacy here in Montana and was highly celebrated in Oregon for her amazing achievements in the field of science at the Oregon Institute of Technology. The campus named the newly constructed Center for Health Professions after Martha. I feel honored to have been her friend and was grateful to have her return to the Annual Fall Operators School in Bozeman in 1995 where I presented her with the Environmental Trainer of the Year Award. This year at the Joint Annual Conference of MWEA and MSAWWA in Missoula, METC established the Dow Award for Excellence in Environmental Education and Health to be presented to outstanding trainers.

She was a source of encouragement to pursue advancement in my knowledge of wastewater treatment concepts. We worked together to develop continuing education opportunities for operators in workshops and she helped me strive to become a classroom trainer for my peers in this profession. I joined national environmental trainer organizations and participated in national conferences because of information she provided and opportunities she sent my way. She was a major influence in helping me progress to where I am today in the world of environmental protection. Much of the work I continue to do today is the direct result of my association and friendship with Dr. Martha Anne Dow. She is also the reason that I strive to call those microorganisms, such as bacteria and protozoans, by the

scientific names and not ‘bugs,’ because they aren’t insects. Thanks, Martha.

**Kenneth Johnston** was an engineer for the Montana Department of Health long before I ever thought of becoming a wastewater operator. I probably, like many people, never gave a thought to what happened to water washed down sinks, tubs, toilets and drains. Ken Johnston showed me what a good trainer could do when presented with an opportunity to educate operators. I attended one of his chlorination workshops in Great Falls in the 1980s. I had a degree in chemistry from the University of Montana and I had studied chlorination disinfection from manuals, so I didn’t expect to learn much, but I needed CECs for my wastewater operator certification. Ken was able to present the material in such an interesting and useful manner that my approach to training and what could be done in a workshop or classroom has been forever transformed. I don’t think I could be as good a trainer as Kenny, but he showed me that training can be engaging and educational.

When I was appointed to the METC steering committee in 1990, while still working at the Great Falls WWTP, we contracted with Kenneth to write a Basic Lagoon Manual for small system operators to use as a good reference for what they need to do to successfully operate and troubleshoot their lagoon treatment plants. That manual, while edited slightly over the years, remains true to Ken’s writing in most chapters. The manual has been adopted by the EPA for the CD-Rom Small WW Operators training series. The manual has been updated with additional Montana environmental information and is used across the state as the training reference when preparing to take either of the two lagoon certification examinations.

Kenneth passed away in 2007, but I guess, in a way, whenever I can apply Ken’s approach in my training sessions and whenever people study the Basic Wastewater Treatment Training Manual for their certification exams, Kenneth Johnston is still training us and giving us lessons in how to do our jobs better. Thanks, Kenneth.

**Clifford Seymour** was the wastewater operator for the Park City treatment lagoons for many years. Cliff was always calling me about one thing or another that was going on in the ponds at Park City. He was the operator of the old lagoons that were overloaded and had many problems because the town had grown beyond the size the cells were designed for and he was the operator of the new aerated system constructed a few years ago.

*continued on page 4*

## Reflections in the Ripples - *continued from page 3*

He experienced the change from an aging inadequate treatment plant to a modern system. He wanted that new WWTP to work as well as it possibly could and we held a couple of on-site training sessions at Cliff's new facility. It was fun to check the dissolved oxygen levels through the time to drop to near zero and time to rise back to about 2 mg/l as we cycled the aeration off and on. Cliff still had a lot to talk about with the new plant too, as he would conjecture about what was happening in those ponds.

Cliff represents the type of operator that works to understand the treatment plant and the processes occurring in them that remove pollutants. He is an example of an operator dedicated to optimizing the treatment processes, though I suspect he would be embarrassed if he heard me saying any of this. Cliff passed away last year and I miss getting his phone calls, since his questions and discussions always reminded me that we need to keep looking at what's actually happening and trying to figure out what it means and how to make it all work a little better. Thanks for the lessons and the friendship, Cliff.

### What's Next?

The Water Pollution Control State Revolving Fund (SRF) program that I work in provides low-interest loans to construct

wastewater treatment plants. We have a companion program for drinking water systems, called the Drinking Water SRF program. I review plans for projects to see if operation and maintenance activities might be impacted or improved. I review operation and maintenance manuals, so operators will have references that help them achieve the best treatment under the safest conditions possible. I conduct inspections at WWTPs and provide training to operators.

The WPCSRF program has conducted inspections at WWTPs for many years and attempted to provide assistance to communities based on those inspections. Assistance might be in the form of training sessions at various workshops in Montana or hands-on work with operators at facilities. The WPCSRF program has added the **104g On-site Technical Assistance** program to our efforts over the past year. This is a tool that the EPA funds to help small systems achieve compliance with federal and state regulations and improve overall performance in the facilities.

I would like to invite wastewater treatment plant operators with questions or requests for assistance to contact me at DEQ at (406) 444-5337, or write to me at PO Box 200901, Helena, MT 59620-0901. For those with a computer and internet connections, you may also send questions or requests to [bbahr@mt.gov](mailto:bbahr@mt.gov). ■

## Kalispell WWTP Featured in Treatment Plant Operator Publication

**T**reatment Plant Operator (TPO) has featured the Kalispell WWTP in the April 2009 issue. The title of the article is 'The Right Chemistry.' There is a picture on the cover of Kalispell Water Resource Manager, Joni Emrick, with a couple of operators in the background. The basis for including the Kalispell plant is the exemplary performance of this Advanced WWTP since beginning operation in 1992. The staff, led by Joni, has applied smart operating principles and sound maintenance practices to achieve high levels of phosphorus removal in a cold-weather climate.

The facility has been featured at the national Water Environment Federation (WEF) annual conference and has received the EPA Clean Water Act award twice. The Montana Water Environment Association has awarded the facility its Excellence in Biosolids

Beneficial Use award. Curt Konecky, treatment plant manager, and the rest of the treatment plant staff are to be commended for their dedication and professionalism. The facility has recently expanded to treat the increasing level of wastewater produced by a growth in population in Kalispell.

TPO is a new publication 'Dedicated to Municipal Wastewater Professionals.' The May 2009 issue is the fifth edition published, having begun publication with the January 2009 issue. It looks like a highly professional magazine providing information to help treatment plant staff comply with permit conditions and achieve excellent plant performance, while aiding staff in pursuing professional advancement in their careers. You can contact the TPO magazine at [editor@tpomag.com](mailto:editor@tpomag.com) with questions, suggestions, or to receive the publication. ■

# Every Day is Earth Day from DEQ!



1. Register to get your name off junk mail lists. BECAUSE: Printing junk mail wastes 100 million trees a year. Canceling can reduce your intake by 35 pounds per year.
2. [DirectMail.com](http://DirectMail.com) - free, quick way to get your name off commercial mailing lists.
3. [OptOutPrescreen.com](http://OptOutPrescreen.com) - opt out of pre-approved credit card and insurance offers online or by phone: 1-888-5-OPTOUT.
4. [EcoLogical Mail Coalition](http://EcoLogical Mail Coalition) - helps businesses stop mail addressed to former employees.
5. [Native Forest Network's Guide](http://Native Forest Network's Guide) - easy steps to stop junk mail
  - a. Also: [www.proquo.com/](http://www.proquo.com/)  
[www.dmchoice.org/](http://www.dmchoice.org/)
6. Stash a pitcher of water in your fridge. BECAUSE: A faucet releases a gallon a minute. Letting the tap run while the water cools wastes a resource that's often in limited supply.
7. Submit your taxes electronically. BECAUSE: We would save 660 million sheets of paper – almost 80,000 trees – if every taxpayer filed electronically.
8. Serve a 1.5 liter magnum of wine when dining with a group instead of two 750-milileter bottles. BECAUSE: A magnum weighs less and requires less fuel to ship than to standard bottles. For an even greener gathering, let the wine flow from a three-liter box.
9. Put cloth napkins on the table. BECAUSE: Eliminating disposable napkins would keep 500,000 tons of paper-based trash out of landfills each year.
10. Donate your old cell phone to charity, or return it to the manufacturer for recycling. BECAUSE: Electronic trash amounts to 70% of America's toxic waste. Info on donating at: [sharetechnology.org](http://sharetechnology.org) and [recycling at mygreenelectronics.com](http://recycling at mygreenelectronics.com)
11. Plug in your devices into power strips and turn off the strips when you aren't using them. BECAUSE: Some plugged-in appliances and strips use electricity even when they're turned off. But one 6-outlet strip, when shut down, uses 87 percent less energy than devices left in 6 individual outlets.
12. Place a recycling bin next to the wastebasket in your home office to make conserving paper as easy as discarding it. BECAUSE: Producing one ton of paper from recycled pulp saves 7,000 gallons of water and 17 trees.
13. Read your water meter and wait an hour without using faucets or toilets. Then check it again after the hour. If the number rises during that time call a plumber. BECAUSE: A dripping tap wastes 5 gallons of water a day. Fixing a leak can save at least \$50 a year.
14. Purify your air. Place potted plants (like Boston ferns, peace lilies or English ivy) on windowsills and tables. BECAUSE: 15 plants can absorb most of the average home's airborne toxins within 24 hours.
15. Use your dishwasher's air-dry cycle or switch the machine off after the final rinse and crack open the door. BECAUSE: Skipping the heated-dry cycle can cut your per-wash energy use by 50%.
16. Stow a reusable bag in your car for errands. BECAUSE: If every American stuck with totes, we'd waste 380 billion fewer plastic bags this year.
17. Have your car's air filters cleaned and tires inflated. BECAUSE: A yearly tune-up can improve your car's efficiency by 15 % and keep more than one ton of carbon dioxide out of the air.
18. Replace traditional showerheads with high-efficiency 2.5-gallon-minute models. BECAUSE: Your shower will consume 30% fewer gallons of water every time you wash.
19. Wash laundry in cold water, or use warm-wash cold-rinse cycles. BECAUSE: Most detergents work equally well regardless of water temperature. Using cold washes in every US household would save the equivalent of 100,000 barrels of oil a day.
20. Switch your computer display to go to sleep mode after 5 minutes of inactivity. BECAUSE: Sleep mode consumes 90% less energy than an animated screen saver – which requires as much energy as normal use.
21. Consolidate your errands into fewer trips. BECAUSE: Economizing your tasks into just one or two runs each week can conserve as much as 55 gallons of gas over the course of a year.
22. Use a toaster oven for simple baking tasks. BECAUSE: The countertop appliances consume half as much energy as electric ovens (and keep the kitchen cooler.) ■

# The City of Laurel Stands Out in Supporting Education in the Water and Wastewater Operations Field

by Karl Carlson, MDEQ

When I began working in the water and wastewater field ten years ago I was lucky enough to meet up with fellow wastewater operators from the City of Laurel, Montana, Wastewater Treatment Plant. The operators were always willing to assist me and at the time I was operating a package wastewater treatment system held together with lots of hope, some wire and good intentions. The City of Laurel wastewater operators never forgot about me. I still remember the little plastic toy wrench they gave me when I pleaded with them for any of their old unused equipment to help diagnose and operate my activated sludge package plant. If I remember correctly, they could of gotten the wrench from the bar screen, but I do not remember. I was hoping for a centrifuge or maybe a sludge judge, but the laughter and the serious manner the little plastic wrench was offered I will never forget. Seriously though, they always were willing to share their knowledge with others.

As my career path continued the City of Laurel wastewater operators were always willing to help me welcome newcomers to the field of water, wastewater, and public health. Some of the

people they have helped visited their plant prior to taking the certification exams. The City of Laurel Wastewater Plant, as well as the City of Laurel Water Plant, has always been happy to host a visit. The tours clearly are of use to new professionals seeking experience and the visual representation of a well operated, maintained, clean, and organized public system. The operators always make time and I know they have worked twice as hard to have a little time to give a tour of the facility. The benefits are usually one-sided as I am the one who usually gets the thank you for the opportunity and the tour of the systems. It is time to give credit where it is long overdue. Let us remember to work together and support education in our field as the City of Laurel water and wastewater operators have always done. I have never left their water or wastewater plants without the utmost feeling of respect for the operators there and how well they do their job. The professionalism and dedication to the environment and education exhibited by all the City of Laurel wastewater and water employees deserves recognition.

Thanks again from a person downstream. ■

## Water Conservation – OOPS, I Mean “Sustainability”

By Gary Wiens, DWSRF Program

“Sustainability” is now the accepted term for what we used to know as “conservation.” The idea behind this change is to promote the concept that wiser use of natural resources can result in extending their availability to many competing users. In terms of the resource we deal with, water, the focus is shifting from “using less water” to “using water in ways that will ensure an adequate supply for all needs, now and in the future.”

Why should we be concerned with the sustainability of water supplies? Population in the southern and western U.S. is growing faster than the country as a whole, contributing to an increasing demand for water. Along with this unprecedented growth in water demands, we are also experiencing more variation in the amount of water available from year to year.

This variation is a direct consequence of a trend toward more extremes in our annual weather patterns. Precipitation falling as snow rather than rain, falling earlier or later than needed, coming down in sudden, large amounts, or not arriving at all – all of these conditions can interfere with the ability of a water utility to provide clean water to its customers when they need it.

The role of human activities in global climate change has been a controversial topic in recent years. Although scientists are now in general agreement about the overall effect of human activities on global warming, you don't have to take a side in this debate to understand the impact of these variations in weather on water supplies across the country. Many areas are experiencing more variability in rainfall, with extreme precipitation events, often

*continued on page 7*

## Water Conservation – OOPS, I Mean “Sustainability” – *continued from page 6*

causing flooding, followed by periods of low rainfall, diminished stream flows and dropping groundwater tables.

Both ends of the spectrum cause problems for the water supplier. Flooding can raise influent turbidity and treatment costs at water treatment plants, while drought can lead to water rationing and, consequently, lower revenues. Water suppliers are one of the few businesses that must at times ask their customers to use less of their product, and having a financial plan in place to deal with revenue shortfalls is a necessity.

So, what does this mean to a public water system? It means developing a better understanding of the impacts of extreme

weather events on water supplies. It means preparing for a wider range of weather conditions than in the past. It means having a plan in place with incentives for wise water use on a daily basis and, in addition, emergency plans for times when water supplies are critically stressed or demands are unusually high. Above all, it means communicating with customers on these issues, so that their input is considered when plans are developed. Customers are, after all, the end users of the water we supply, and their input and cooperation are essential to the success of any conservation program. Oops, I meant to say, “sustainability.” ■

## CEC Biennium and the Continuing Education Credits (CECs)

Understanding how Continuing Education Credits work is a bit confusing but very important for the certified operator to understand to insure that all required CECs are obtained by the May 31 ending date. Hopefully the following information will clarify some of your questions.

All fully certified operators must earn CECs during every two-year biennium commencing on June 1<sup>st</sup> of every even-numbered year and ending May 31<sup>st</sup> of the following even-numbered year. The current CEC period, which is coming to a close, began on June 1, 2006 and ends May 31, 2008 (all CEC forms for this period must be turned into the DEQ office by June 15, 2008). The next CEC period will begin on June 1, 2008 and end May 31, 2010. All CECs earned by a certified operator in the month of June of the new CEC period will count toward satisfying the operator’s requirements for the next CEC biennium.

A credit consists of ten contact hours (1.0 CECs) and one-half credit consists of five contact hours (0.5 CECs). A contact hour is defined as sixty-minutes of participation in an approved classroom program.

The CECs are awarded at 0.1 credit per one hour of contact time to the nearest quarter hour (15 minute intervals). For example, seven hours and 15 minutes of training equals 7.25 hours which equals 0.725 CECs. Training providers are

encouraged to schedule classes in one-hour increments with a total of 0.7 CECs for a full day of training and 0.4 CECs for a half-day of training.

### CEC Requirements for Certificate Classification:

Class 1	20 Hours (2.0)
Classes 2, 3, 4	10 Hours (1.0)
Class 5	4 Hours (0.4)

The subject matter of the educational offering must be relevant to the particular class(es) of certificates to which the credit is being applied. An operator will receive credit only for courses approved for the type of certificate held by that operator. In other words, a water operator will not receive credit for taking a wastewater course and vice-versa. Facility based training is eligible for credits only if the training meets all other requirements for CECs.

A certified operator who provides training will receive double CECs for the amount of time instructed. For example, one hour of teaching by a certified operator would equal 0.2 CECs. The provider must inform the DEQ WWOC that the trainer is a certified operator to obtain these additional CECs.

Safety courses emphasizing safety that relates directly to both water and wastewater, such as confined space entry, emergency

*continued on page 8*

## CEC Biennium and the Continuing Education Credits (CECs) – continued from page 7

response, bloodborne pathogens, trenching and shoring, and excavation will be given full credit.

The following topics, which may not be specific to water or wastewater treatment system operation, are generally applicable and are approved for half credit:

1. Coaching Experienced Driver
2. Defensive Driving
3. First Aid and Cardio-pulmonary Resuscitation (CPR) – for initial certification class only

4. Hazardous Waste or Hazardous Material (HAZMAT) training
5. Professional Growth – including, but not limited to, computer courses (not specific to water and wastewater), team development training, and supervisory/management courses.

Please call Reta Therriault at (406) 444-3434 with any questions regarding Continuing Education Credits. ■

## Just a Friendly Reminder From the Operator Certification Corner

**S**ection 17-38-225 (5), Administrative Rules of Montana (ARM), provides that: “Measurements for pH, temperature, turbidity, and residual disinfectant concentrations for community and nontransient noncommunity water supply systems must be conducted by a person certified under the provisions of Title 37, chapter 42, MCA, or by a person who has been properly trained to conduct these measurements by the operator in responsible charge or by the department. Bacteriological samples for community and nontransient noncommunity water supply systems must be collected by a person approved by the department or certified under the provisions of Title 37, chapter 42, MCA. Measurements for total

coliform bacteria, fecal coliform bacteria, and heterotrophic plate count must be conducted by an approved laboratory.” In other words, all bacteriological samples must be taken by a certified operator.

If samples are taken by someone other than the certified operator and are not taken properly this could result in the system being out of compliance. Operators collecting samples need to know correct sampling procedures, the proper locations, the proper conditions and the correct time frames required for each sample.

Contact the appropriate rules manager or your certified laboratory with questions regarding sampling.

Rules Managers:

Total Coliform Rule, Nitrates Rules (Community) Monitoring and Reporting	Laura Anderson	444-5314
TCR & Nitrate Rules Specialist - (Transient)	Sienna Paquin	444-3425
GWUDISW, Ground Water Rule, TCR	Betsy Hovda	444-2691
Disinfection By-Products and Ground Water Chlorination	John Jose	444-5312
GWUDISW	Jake Kandelin	444-4633
Surface Water Treatment	John Weikel	444-5313
Lead and Copper	Autumn Coleman	444-5360
Phase II & V, RAD, Chems, CCR	Ed Kiely	444-3967

*continued on page 9*



## Just a Friendly Reminder from the Operator Certification Corner – *continued from page 8*

Under no circumstances may a certified operator use another certified operator's license number when reporting samples. Under no circumstances may a non-certified person collect samples and use a certified operators license number to report samples. The person collecting the samples should use their first and last name on all sample forms.

### **17.38.234 TESTING AND SAMPLING RECORDS AND REPORTING REQUIREMENTS**

- (1) To ensure the safety of water delivered to the consumers, it is essential that there be a record of laboratory examinations of the water sufficient to show it is safe with respect to both bacteriological quality and other maximum contaminant levels. Suppliers of water shall maintain accurate and complete testing records at all water plants and for all water systems. Complete records must be made available to the department upon request.
- (2) A supplier shall keep a daily record of the samples and control tests required in ARM [17.38.225](#), [17.38.227](#), [17.38.230](#), and [17.38.234\(4\)](#) . The records must be kept on report forms approved by the department and must be prepared in duplicate. Unless indicated otherwise in these rules, the original records must be forwarded to the department by the tenth day of the month following testing.
- (3) Actual laboratory reports may be kept or data may be transferred to tabular summaries, provided the following information is included:
  - (a) the date, place, and time of sampling;
  - (b) the name of the person who collected the sample;
  - (c) identification of the sample as to whether it was a routine distribution system sample, check sample, raw or process water sample, or other special purpose sample;
  - (d) date of analysis;
  - (e) laboratory and person responsible for performing analysis;
  - (f) the analytical technique/method used, analysis number; and
  - (g) the results of the analysis.
- (4) A supplier of a public water supply system that has exceeded the microbiological contaminant MCLs specified in ARM [17.38.207](#) shall report the violation to the department by the end of the next business day after learning of the violation. ■

## Expense Reimbursement Grant Extended

Montana DEQ requested and was approved for an extension of the Expense Reimbursement Grant. The Program began on July 1, 2002 and has been extended to June 30, 2012.

The purpose of the Operator Reimbursement Program is to reimburse public water systems serving 3,300 people or fewer for certain expenses associated with required operator training. Congress included this new program in the 1996 amendments to the Safe Drinking Water Act to provide some compensation for small systems, which are often affected more significantly by new regulatory requirements than large systems.

For more information on this program, visit our website at [www.deq.mt.gov/wqinfo/opcert/Reimbursement.asp](http://www.deq.mt.gov/wqinfo/opcert/Reimbursement.asp) or contact Channah Wells at 444-3071 or Shelley Nolan at 444-4071. ■

## OPERATOR EXAMS PASSED JUNE 22, 2007 – DECEMBER 31, 2007

**CLASS I**

DORAN, PATRICK	BOZEMAN	1A	CO
ALLEN, BRAD	BOZEMAN	1A	OT
UNDERWOOD, ERNEST	FT. SMITH	1B	OT
SAGO, KENTUCKY	SIDNEY	1B	CO
OSTERMAN, JOHN	BUTTE	1C	CO
BRESHEARS, CLAYTON	BILLINGS	1C	CO
NEESE, JASEN	STEVENSVILLE	1C	CO
HAYDEN, RICKEY	BIGFORK	1C	CO
ANDRENE, WILLIAM	BUTTE	1C	OT
JONES, JESSE	KALISPELL	1C	OT
WISHER, JASON	KALISPELL	1C	OT
SMITH, KEITH	HAMILTON	1C	CO
CHURCH, TODD	BUTTE	1C	OT
MOODY, GARTH	HAVRE	1C	OT
STROH, GLENN	HAMILTON	1C	OT

**CLASS II**

SCHAAF, BRIAN	GLENDIVE	2A	CO
WALDAHL, CHARLES	KALISPELL	2A	CO
DONNELLY, PETE	BIGFORK	2A	OT
MURRAY, RICK	HAMILTON	2A	OT
SMITH, BRYAN	BELGRADE	2A3B	CO
MILLER, RANDALL	EUREKA	2B	OT
JONAS, DEANNE	FORSYTH	2C	CO
WRIGHT, STEPHEN	COLUMBIA FALLS	2C	CO
GALLAGHER, BILL	HELENA	2C	OT

**CLASS III**

MILLER, RANDALL	EUREKA	3A	CO
CHRISTOPHER, VERNON	PABLO	3A4B	OT
COOLEY, SETH	COLUMBIA FALLS	3A4B	CO
WALDAHL, CHARLES	KALISPELL	3B	OT
DONNELLY, PETE	BIGFORK	3B	CO
CURETON, JOHN	KALISPELL	3B	CO
MURRAY, RICK	HAMILTON	3B	CO
MILLER, RANDALL	EUREKA	3C	CO
RODGERS, TROY	ANACONDA	3C	OT
BYRNES, MICHAEL	SUPERIOR	3C	CO
ELSER, KELLY	ENNIS	3C	CO
HENRY, PATRICK	JEFFERSON CITY	3C	OT

## LEGEND:

FC = Fully Certified      OT = Operator-in-Training

A = Water distribution Operator

B = Water Treatment Operator

C = Wastewater System Operator

D = Industrial Wastewater Operator

AB = Well Water Supply Operator

**CLASS IV**

GALLUP, BRIAN	E. GLACIER PARK	4A	CO
SAGO, KENTUCKY	SIDNEY	4A	CO
WALDNER, TED	ULM	4AB	CO
RIDGWAY, WILLIAM	CLANCY	4AB	OT
LOUSTAUNAN, P. KEVIN	BOZEMAN	4AB	CO
HUGGINS, MATTHEW	BOZEMAN	4AB	CO
PEARSON, JAMES	CLANCY	4AB	CO
HENSEL, BENJAMIN	BONNER	4AB	CO
REES, ROLAND	RAMSEY	4AB	CO
BROWNING, MIKE	DARBY	4AB	CO
CAMPBELL, LORRIE	BELGRADE	4AB	OT
ZEIER, DANIEL	ANACONDA	4AB	CO
UNDERWOOD, ERNEST	FT. SMITH	4AB	CO
RODGERS, TROY	ANACONDA	4AB	CO
CROISETIERE, MICHAEL	WILSALL	4AB	OT
CROSTON, JONATHAN	CLYDE PARK	4AB	CO
ZAHN, JAMES	RAPELJE	4AB	CO
JOHNSON, L. WAYNE	HINSDALE	4AB	CO
DURFEY, GARY	HOBSON	4AB	CO
FISHER, JAMES	SHEPHERD	4AB	OT
FISHER, RUSS	GREAT FALLS	4AB	CO
KUGLER, KELLY	HELENA 4AB	CO	
MACCRACKEN, ERNEST	CLYDE PARK	4AB	OT
MORLEY, SCOTT	DEER LODGE	4AB	OT
KAST, MICHAEL	DRUMMOND	4C	CO
WALDNER, TED	ULM	4C	CO
SHYNE, DANIEL	BOZEMAN	4C	OT
MOLLE, CODY	MILES CITY 4C	CO	
ELLIOTT, GARY	CUSTER	4C	CO
ZIMMER, CASSIDY	BROADUS	4C	OT
WHITMAN, TOM	ST. MARIE	4C	CO

**CLASS V**

HUFT, PEGGY	BUTTE	5AB	CO
STEHNHAGEN, JOSEPH	EAST HELENA	5AB	OT
HOERNING, JON	DILLON	5AB	OT
HOUSER, MARK	BOZEMAN	5AB	CO
EPLEY, ROSS	BOZEMAN	5AB	CO
DEPASO, ROBERT	PRAY	5AB	OT
MATHISON, THOMAS	THREE FORKS	5AB	CO
BAKER, DANIEL	HAVRE	5AB	CO
WELDER, STEVEN	KALISPELL 5AB	CO	
FETVEIT, GARY	KALISPELL 5AB	CO	
BERENDT, GERALD	BIGFORK	5AB	CO
FINKBEINER, THOMAS	MISSOULA	5AB	CO
IRWIN, NYNA	HAMILTON 5AB	CO	

**Congratulations Operators!!**

The examinations for certification require considerable time in study and preparation. It represents a lot of hard work and initiative on your part. In behalf of the department and your employers, we recognize this achievement and show appreciation for working hard to ensure that you are properly trained to protect the public health and safety of Montana.

*Lizbeth Geary, Operator Certification Tech*

## NEW OPERATORS/NEW CERTIFICATIONS – JANUARY 2008 – 2009

*A Hearty Congratulations!!*

All of these operators worked hard to achieve success! We recognize the time and effort that they devoted to becoming caretakers of Montana's water and wastewater systems. The public health and safety of Montana depends on people like them!

-Julie Allen, Operator Certification Technician

**CLASS 1**

BACHLER, JOSHUA	BILLINGS WWTP	1C	OT
BARNWELL, RICK	CITY OF HELENA	1A, 1B	OT
BAUGHMAN, DANA	CITY OF HAMILTON	1C	OT
BENBROOK, JESSE	CITY OF WHITEFISH	1B	CO
BOONE, BOB	BSB	1A	CO
BURNS, ERIC	BOZEMAN	1C	CO
CLARK, DONALD	CITY OF HELENA	1B	CO
COATES, SHAWN M	BUTTE	1A	OT
CONWAY, CHRISTOPHER	BUTTE-SILVER BOW WATER	1A	OT
COOK, MATTHEW	CITY OF BOZEMAN	1A	OT
DARBE, THOMAS	BILLINGS WWTP	1C	OT
DARKO, PATRICK	CITY GREAT FALLS WWTP	1C	OT
DAVIS, LANCE	CITY OF BOZEMAN	1A	OT
DAVIS, WAYNE	MT WATER COMPANY	1A	CO
DOWNNS, STEVEN K	LAUREL	1D	CO
EMETT, DAN	BUTTE SILVERBOW	1A	OT
FETH, JEFFREY	HELENA	1C	OT
HOLLAND, DANIEL	BUTTE SILVER BOW	1B	OT
HOLMLUND, KEITH	CITY OF MILES CITY	1C	OT
HYYPPIA, CRAIG L	HELENA	1B	CO
LAFROMBOISE, HEATH	HELENA	1A	CO
LANE, KEVIN	BSB	1A	OT
LANTZ, STEVE	TEN MILE & PLEASANT VALLEY WUA	1A	CO
LEUM, SHANE	BOZEMAN	1C	CO
LOSSMAN, FRED	CITY OF HAMILTON	1C	OT
MARTIN, JASON	MT WATER COMPANY	1A	OT
MARTS, STEVEN T	BILLINGS	1D	CO
NOWAK, NICHOLAS	CITY OF BOZEMAN	1A	OT
PURKISS, STEPHEN	CITY OF BOZEMAN	1A	OT
REES, ROLAND	RAMSEY	1C	CO
ROGSTAD, LYNORA	HELENA	1A, 1B	CO
RUST JR, JENE	CITY OF LEWISTOWN WWTP	1C	OT
SORENSEN, DEWEY	CITY OF BOZEMAN	1A	OT
STARK, VAUGHN	KILA, MT	1C	OT
STOCKS, MIKE	BOZEMAN	1B	OT
STREMCHA, DAN S	BILLINGS	1D	CO
WATSON, JOSHUA	CITY OF BOZEMAN	1A	OT
ZENT, PATRICK	CITY OF FORSYTH	1B	OT

**CLASS 2**

ADAMS, PETE	TREELINE SPRINGS - BIG SKY	2C	CO
BURNS, GEORGE	MALMSTROM AFB	2A	CO
CHRISTENSEN, CHAD	DILLON	2A3B	OT
CLEGG, BRIAN	MALMSTROM AFB	2A	CO
DUBUQUE, THEODORE G	LIVINGSTON	2C	OT
ESKESTRAND, LOUIS	KALISPELL WWTP	2A3B	OT
GALLUP, BRIAN	EAST GLACIER CO W&S	2B	OT
GLENN, ROBERT J	WEST YELLOWSTONE	2A3B	CO
GOLIE, WILLIAM	BIGFORK W&S	2A3B	OT
HADER, BRIAN	COLUMBIA FALLS	2A3B	OT
HOON, MICK	KALISPELL	2B	OT
KLOTZ, STEVE	CITY OF BELGRADE	2A3B	CO

continued on page 12

## NEW OPERATORS/NEW CERTIFICATIONS – JANUARY 2008 – 2009

LAROQUE, MIKE	CITY OF WHITEFISH	2A	CO
LAUMAN, PHILLIP	CITY OF KALISPELL	2A3B	CO
LOSSMAN, FRED	CITY OF HAMILTON	2A	CO
PRUTTIS, DARREN M	CONRAD	2B	OT
SCHAD, PHIL	CITY OF LIBBY	2A	CO
SMITH, KEITH	CITY OF HAMILTON	2A3B	CO
SPRADLEY, TROY	DRY PRAIRIE RURAL WATER	2A	CO
UNDERWOOD, ERNEST	BUREAU OF RECLAMATION - YELLOWTAIL DAM	2C	CO
VOLMER, ROBERT	CITY OF LAUREL	2A	OT
WAGGONER, DAVE E	LAUREL	2A	OT
WALKER, CHRISTOPHER	ST. MARY/GLACIER NAT'L PARK	2B	OT
WAMBACH, CHAD T	KALISPELL	2A3B	CO
WILLIAMS, DAVID	SPRING CREEK MINE	2A3B	OT, CO
WILLIAMS, KELLY	STAHLY ENGINEERING & ASSOCIATES	2C	OT
WOOD, JONATHAN	MALMSTROM AFB	2A	CO
ZEIER, DANIEL	ANACONDA CCC	2B	CO

**CLASS 3**

ADAMS, PETE	TREELINE SPRINGS - BIG SKY	3A4B	CO
BAIR, DONALD	TOWN OF SHERIDAN	3A4B	CO
COLLIFLOWER, LYMAN	ROCKY BOY	3A	OT
COURTNEY, ALAN	WOLFE WATER	3A4B, 3C	OT
CROSTON, JONATHAN	CRAZY MOUNTAIN RANCH	3C	CO
DAVIS, EARLE C.	CITY OF POLSON	3C	OT
DAVIS, WAYNE	MT WATER COMPANY	3B	CO
DYKSTERHOUSE, JEFF S	AMSTERDAM-CHURCHILL/MANHATTAN	3C	CO
EVANS, DAVID	CROW AGENCY	3C	OT
GABELT, RUSSELL	TOWN ALBERTON	3C	CO
GALLUP, BRIAN	EAST GLACIER S&W	3C	OT
GASS, JONATHAN	WILLIAMS ADDITION/MISSOULA	3A4B	OT
GLENN, ROBERT	TOWN OF WEST YELLOWSTONE	3C	OT
GOFF, B. RANDALL	WILDERNESS CLUB/EUREKA	3C	OT
HACKE, BRAD	SUN PRAIRIE VILLAGE CO W&S	3A4B, 3C	OT
HANSON, LONI	CITY OF RED LODGE	3A	CO
HARTMAN, LARRY	BASIN	3C	OT
HERRERA, BRANDON	CITY OF BOULDER	3A4B	CO
HOLDAWAY, SHAUN	INDIAN SPRINGS SUBDIVISION	3A4B	OT
KAMPEN, PETER	BAAB	3A	OT
KLOTZ, STEVE	BELGRADE	3C	CO
KNUTSON, JOHN	HUNGRY HORSE	3A4B	OT
KOPLAND, ROBERT	GARDINER-PARK COUNTY W&S	3C	CO
LEES, TRICE	PARK CITY W&S DIST (RSID #8)	3C	OT
LOVEC, MIKE	CITY OF BAKER	3A4B	CO
LYNCH, RANDALL	TOWN OF MANHATTAN	3A4B	CO
MARTIN, JASON	MT WATER COMPANY	3B	CO
MCCLURG, CATHY	ABSAROKEE	3C	CO
METZENBERG, MIKE	TOWN OF CIRCLE	3A4B	CO
MIKULECKY, DANIEL	RUDYARD	3A	CO
OAKLEY, ALAN	TOWN OF FAIRFIELD	3A4B	CO
OLSON, KEVIN	BILLINGS	3A4B	CO
OLVERA, JAIME	ASHLAND	3A4B	CO
PARKER, BRANDON	CITY OF POLSON	3C	CO
PAYNE, DAVID	VAUGHN/CASCADE	3C	CO
PRUTTIS, DARREN M	CONRAD	3C	OT
RODGERS, JAMES	ST. LABRE INDIAN SCHOOL	3A4B	OT
ROHLETTER, LEONARD	WHITE SULPHUR SPRINGS	3A	CO
SCOTT, LINDA	TOWN OF FAIRFIELD	3A4B	CO

continued on page 13

## NEW OPERATORS/NEW CERTIFICATIONS – JANUARY 2008 – 2009

SMITH, BRIAN	BELGRADE	3C	CO
SUNCHILD, DUSTIN	ROCKY BOY	3A	OT
THOMPSON, KYLE	WILLIAMS ADDITION/MISSOULA	3A4B	OT
THOMPSON, ROGER	GREAT FALLS	3A4B, 3C	CO
WILKINS, LLOYD	HOT SPRINGS	3A4B	OT
WILSON, DONALD	FROMBERG	3C	OT
WYRICK, LISA	GLACIER PARK INC	3A	CO
ZENT, PAT	CITY OF FORSYTH	3A	OT
ZIMMER, CASSIDY	TOWN OF BROADUS	3A4B	OT
 <b>CLASS 4</b>			
ANDERSON, RYAN	BUCKS T-4 - BIG SKY	4AB	OT
ANDRUS, DAVID	HELLCREEK SP	4AB	CO
BADKE, GLENN	EUREKA	4AB	CO
BARNETT, JESSE	GREENOUGH	4AB	CO
BOGDON, SHERRY	GSK BIOLOGICALS - HAMILTON	4AB	OT
BROWNING, MIKE	TRAPPER CREEK - DARBY	4C	CO
BUSH, THOMAS D	SIMMS	4C	CO
CHURCH, TODD	BUTTE	4AB	CO
COFFMAN, BARBARA	DUTTON	4A	CO
COMBS, DOUGLAS	GIANT SPRINGS	4AB	CO
CRESPO, CHRISTIAN	MALMSTROM AFB	4A	CO
DEISHER, CHARLES	TERRY PUBLIC SCHOOLS	4AB	OT
DEROCHE, DONALD	BLACKFEET TRIBE	4AB	OT
DORAN, JONNIE	REC SILICON	4AB	CO
EMMELKAMP, COURTNEY	MANHATTAN CHRISTIAN SCHOOL	4AB	OT
EVANS, JOHN	BLACKFEET BOARDING DORM	4AB	OT
GEISE, KURT R	AUGUSTA	4C	CO
HARTMAN, LARRY	BASIN	4AB	CO
HAYES, RICHARD	WESTERN ENERGY CO	4AB	CO
HEGGEN, KASEY	MALMSTROM AFB	4A	CO
HOFER, DAVID E.	HIDDEN LAKE COLONY	4AB	CO
HOOPER, DANIEL	MALMSTROM AFB	4A	CO
HOULD, JAMISON	HELL CREEK STATE PARK	4AB	OT
HUFFMAN, DANIEL	CHOTEAU CO CARTER WATER DIST.	4AB	OT
IRWIN, DAVID E	VICTOR	4AB	CO
JACOBS, BRIANT	PCI/MISSOULA	4AB	OT
JAKES, DUNCAN	PCI/MISSOULA	4AB	OT
JOHNSON, KELLY	CRAZY MOUNTAIN RANCH	4AB	CO
KELLY, JACK	PHILLIPS CO ZORTMAN W&S	4AB	CO
KIEFFER, MATTHEW	MALMSTROM AFB	4A	CO
KLEINSASSER, KEN E.	BIG SKY COLONY/CUT BANK	4AB	CO
KLEINSASSER, RUEBEN	RYEGATE	4AB	CO
LAHR, RICHARD	TOWN OF DENTON	4AB	CO
LIEN, MICHAEL	CLEARVIEW HGHTS/RONAN	4AB	CO
LINEHART, RICHARD	MONTANA STATE HOSPITAL	4C	CO
LORD, CURTIS	YELLOWSTONE BOYS/GIRLS RANCH	4AB, 4C	CO
LOTERBAUER, ORVIN L	BOZEMAN	4AB	OT
MALYEVAC, ROBERT	KOOTENAI NAT'L FOREST/LIBBY	4A	CO
MATTFIELD, MICHAEL	SHEPHERD SCHOOL	4AB	OT
MCLEOD, JOHN	NORTH VALLEY CO W&S DISTRICT	4A, 4C	OT
METZENBERG, MIKE	TOWN OF CIRCLE	4C	CO
MILLER, M. ALLAN	MOUNTAIN ACRES	4A	CO
MOORE SMAIL, MARY	MADISON ALDER CO W&S	4C	CO
MUSCHA, TRAVIS	HELL CREEK STATE PARK	4AB	CO
NELSEN, DAVID	SUN PRAIRIE COUNTY W&S	4AB	OT
NOTTINGHAM, MIKE	LOMA COUNTY W&S DISTRICT	4A	CO
OAKLEY, ALAN	FAIRFIELD	4C	OT

continued on page 14

## NEW OPERATORS/NEW CERTIFICATIONS – JANUARY 2008 – 2009

OHLER, TIM	MORNING STAR/KALISPELL	4AB	CO
OLSON, HARRY	SUN PRAIRIE COUNTY W&S	4AB	CO
OPPER, JOE	CRAZY MOUNTAIN RANCH	4C	CO
PANKEY, ARTHUR	LIBBY	4AB	CO
PATTEN, TROY	DAILYS PREMIUM MEATS	4AB, 4C	CO
PETERSMA, TREVOR	MALMSTROM AFB	4A	CO
PETTENGILL, DAVID	CORAM	4AB	CO
RAMER, DONALD	PCI/MISSOULA	4AB	OT
REDENBAUGH, TOM	DECKER COAL MINE	4AB, 4C	CO, OT
REED, DEREK	MALMSTROM AFB	4A	CO
REQUENES-MONTEJANO, ROBERTO	MALMSTROM AFB	4A	CO
RIDER, WILLIAM	MANHATTAN	4C	CO
ROANE, JAMES	TOWN OF GRASS RANGE	4AB, 4C	CO
ROUSE, TYSON	LINCOLN SEWER DISTRICT	4C	CO
SAGO, KENTUCKY	MONTANA-DAKOTA UTILITIES - SIDNEY	4C	CO
SCALZONE, KEN	KELLER SUBDIVISION	4AB	OT
SCHARFE, KYLE	KALISPELL	4AB	OT
SELK, MURREY	QUALITY MEATS OF MT, LLC	4C	CO
SIEGES, ADAM	CHARLO	4AB	CO
SPANG, RICHARD	WESTERN ENERGY CO	4AB	OT
SPANG, WILBUR	LAME DEER SCHOOL	4AB	CO
SPRUNGER, E ALLEN	HARRISON	4C	OT
STALEY, ROGER	TOWN OF VIRGINIA CITY	4AB, 4C	OT, CO
SUMMERFIELD, DANIEL	ROCK CREEK CATTLE CO	4AB	CO
TOWNSEND JR., MICHAEL	BRADY COUNTY W&S DISTRICT	4C	OT
TUDOR, JENNIFER A	PLEVNA	4AB	CO
WARD, THOMAS	CRYSTAL LAKES UTILITIES	4AB	CO
WILLIAMSON, JIM C	KALISPELL	4AB	OT
WILSON, DONALD	FROMBERG	4AB	CO
YOUNG, DAVID	TRACY WATER USERS CORP	4AB	CO
<b>CLASS 5</b>			
BREWER, GRANT	CURB BOX SPECIALIST	5AB	OT
APPLEKAMP, EARL	PLEASANT VIEW H20	5AB	CO
BOON, FRED	SANDERS CO HARVEST FOODS/POLSON	5AB	CO
CADWELL, LORI	ROSEMARY'S ADDITION	5AB	CO
FITZPATRICK, BRIAN	HELENA	5AB	CO
GRAY, JERRY W	GREAT FALLS	5AB	CO
HELD, DON	CURB BOX SPECIALIST	5AB	OT
HOGSETT, JEREMY	CURB BOX SPECIALIST	5AB	OT
JIMISON, JIMMIE	KID CORRAL CHILDCARE	5AB	CO
KACK, STEVEN	ENNIS HOT SPRINGS BUSINESS PK	5AB	CO
KUCERA, BRADLEY	DIXON	5AB	CO
LOHR, VIRGIL	TOWNSEND	5AB	CO
MACRAE, DOUGLAS RON	RY TIMBER LIVINGSTON	5AB	CO
MASON, HEATH D	EAST HELENA	5AB	CO
MORAST, BRENDON	RYAN DAM WATER SYSTEM	5AB	CO
MOSTAD, LONNIE	TOWNSEND	5AB	CO
NEWMAN, HOWARD	INGOMAR	5AB	CO
PARRETT, RUSS	ELK PARK VILLAGE	5AB	CO
PEACOCK, RICHARD	ANTIGONE ACRES HOA	5AB	OT
PERNELL, JEFF	SOMERS MONTESSORI SCHOOL	5AB	CO
RIDER, WILLIAM	MANHATTAN	5AB	CO
SCHREINER, JEREMY	CURB BOX SPECIALIST	5AB	OT

FC = Fully Certified

OT = Operator-in-Training

A = Water Distribution Operator

B = Water Treatment Operator

C = Wastewater System Operator

D = Industrial Wastewater Operator

AB = Well Water Supply Operator

# Self-Monitoring Under the MPDES Permit Program: Completing Accurate DMRs

by Christopher Romankiewicz, WPB

Since the introduction of the 1972 Clean Water Act, there have been significant improvements to water quality in the United States. The improvements are a result of the National Pollutant Discharge Elimination System (NPDES) permit program. The NPDES permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. Through the NPDES program, states were authorized to administer permits. The Montana Department of Environmental Quality (Department) accepted this opportunity and created the Montana Pollutant Discharge Elimination System (MPDES) permit program.

The cornerstone of the MPDES permit program is the self-monitoring program. The self-monitoring program requires permittees to monitor discharges and receiving waters to ensure the beneficial uses defined in the Montana Water Quality Act are maintained. It is the responsibility of the permittee to ensure monitoring is completed as required by the MPDES permit. The self-monitoring program stems from the MPDES permit effluent limitations and monitoring requirements.

Self-monitoring conditions defined in MPDES permits require different monitoring frequencies. Dependent upon the type of facility, volume of discharge, and type of discharge, facilities may be required to perform daily, weekly, monthly, quarterly, semi-annual, and/or annual sampling and monitoring. The results of monitoring and sampling are reported to the department on Discharge Monitoring Reports (DMRs). Department staff review and enter the data submitted on DMRs by permittees into a national reporting database administered by the United States Environmental Protection Agency.

There are several main problems the department commonly experiences with the submittal of DMRs. These problems include meeting the required submittal timeframes for monitoring periods, monitoring for all the required parameters, completing all the required fields for monitoring parameters, using correct sampling methods, and acquiring the correct signature prior to submittal.

Forty-five percent of violations generated by the MPDES self-monitoring program are the result of DMRs not being submitted or DMRs being submitted past the due date. DMRs are required to be submitted to the department by the 28<sup>th</sup> day of the month following the monitoring period. In order to meet this deadline,

permittees must plan ahead. For instance, if sampling is required once a month for a required parameter, a permittee should not wait until the end of the month to conduct sampling. If sampling is required weekly to obtain a monthly average, permittees should make an effort to complete sampling early each week. Errors in sampling that result in exceedences can occur throughout the sampling and analytical process. By planning ahead, permittees can ensure compliance with effluent limitations by obtaining accurate sampling results and submitting DMRs within the required timeframe.

Sampling must be completed for all the identified monitoring parameters contained within the MPDES permit. Permittees that produce their own DMRs must ensure the created DMR contains all the required monitoring parameters identified in the MPDES permit prior to submittal. In addition, permittees should review DMRs issued by the department. Review the DMR before completing it to ensure the DMR is issued to the correct facility and contains all the required monitoring parameters. Permittees are required to complete all the monitoring and sampling contained in MPDES permits regardless if the monitoring parameter is not identified on the DMRs.

Monitoring must be conducted according to test procedures approved under Part 136, Title 40 of the Code of Federal Regulations unless other test procedures have been specified in the MPDES permit. Permittees are required to review 40 CFR 136 on a regular basis to make sure their sampling is completed under current guidelines.

Sampling and measurements must be representative of the volume and nature of the monitored discharge. There are several different types of samples permittees can be required to complete. These include instantaneous, grab, and composite samples. Each sample type fulfills different requirements for monitoring. Review the MPDES permit and DMR sample type column prior to taking samples for analysis.

MPDES permits often require the sampling analysis to incorporate calculations for quantity or loading values and/or quality or concentration values. Review of the MPDES permit prior to submitting the DMR can ensure the necessary calculations have been completed. At times, calculations are required to be completed using the combination of results from different monitoring parameters to fulfill the monitoring requirements of

*continued on page 16*

## Self-Monitoring Under the MPDES Permit Program: Completing Accurate DMRs –

*continued from page 15*

another parameter. In addition, a blank box in a column on a DMR requires a monitoring parameter to be filled in. Permittees should conduct an internal review to ensure completeness and accuracy of the reported monitoring parameters has been obtained and all the necessary columns are completed prior to submittal.

DMRs are to be signed by the principal executive, ranking elected official, or a duly authorized signatory prior to submittal. Permittees have the flexibility in identifying an individual or a specific position title to sign the DMR. A written authorization must be provided from the principal executive or ranking official that acknowledges the person or position responsible for reviewing and signing the DMR. This authorization must be sent to the department prior to submittal of the DMR. Permittees using laboratories or contractors to complete monitoring requirements and fill out DMRs should review the DMR prior to submittal.

The responsibility of the self-monitoring program is dependent upon the permittee. By complying with the conditions of issued MPDES permits, permittees are able to receive a 25% reduction in annual fees for a given calendar year. Failure to comply with the monitoring conditions of MPDES permits result in letters of violation being issued. Repeat violations can result in the department pursuing formal enforcement action. In order to achieve compliance with the MPDES permits, the department recommends permittees plan ahead, review conditions of MPDES permits, review DMRs prior to completing and submitting them to the department. If permittees have questions

regarding sampling, monitoring, DMR completion, signatory requirements, please contact the Compliance and Technical Support Section of the department at (406) 444-3080. ■



## Radionuclides Responsible for the Third Highest Water Quality Violations in Ground Water Supply Systems

*by Charles Job*

In 2008, radionuclides were responsible for the third highest number of violations, in comparison with all other contaminants regulated under the Safe Drinking Water Act. Table 1 shows that radionuclides ranked behind total coliform and arsenic and just ahead of nitrates in the number of

violations for ground water supply systems in 2008. For reference, violations from ground water supply systems constituted 95% of all radionuclides violations for all public water systems. Note that these data are from all PWSs across the nation, they are not Montana specific.

*continued on page 17*



## Radionuclides Responsible for the Third Highest Water Quality Violations in Ground Water Supply Systems – continued from page 16

**Table 1**  
Violations of Maximum Contaminant Levels for the Four Most Common Contaminant Types Recorded for Ground Water Supplied Public Water Systems in 2008

Contaminant Type	Contaminant Name	Violations in 2008
Total coliform	Coliform	8428
Arsenic	Arsenic	2122
Radionuclides	Combined radium (–226 & –228)	613
	Combined uranium	322
	Gross alpha, excluding radon and uranium	305
	Gross beta particle activity	5
	<b>Radionuclides Total</b>	<b>1245</b>
Nitrates	Nitrate	851
	Nitrate-nitrite	281
	Nitrite	18
<b>Nitrates total</b>	<b>1150</b>	

### Sources and Health Effects of Radionuclides

Violations of radionuclides MCLs are concentrated in certain public water system type and size categories. Ninety-nine percent of the radionuclides violations in 2008 were at community water systems, as shown in Table 3. Of these violations,

Table 4 indicates that 83% were at very small and small community water systems. Three-quarters of these violations occur in just 11 states in the Atlantic coast, Midwest, and Southwest regions.

**Table 3**  
Radionuclides Violations by Public Water System Type

Contaminant Types	Public Water System Type <sup>1</sup>	Contaminant Name	Violations in 2008
Radionuclides	CWS	Combined radium (–226 & –228)	609
		Combined uranium	316
		Gross alpha, excluding radon and uranium	305
		Gross beta particle activity	5
		<b>CWS Total</b>	<b>1235</b>
	NTNCWS	Combined uranium	5
	NTNCWS Total		5
TNCWS	TNCWS	Combined radium (–226 and –228)	4
		Combined uranium	1
	TNCWS Total		5
<b>Radionuclides Total</b>			<b>1245</b>

<sup>1</sup>Community Water System (CWS): A public water system that supplies water to the same population year-round. Non-Transient Non-Community Water System (NTNCWS): A public water system that regularly supplies water to at least 25 of the same people at least six months per year, but not year-round. Some examples are schools, factories, office buildings, and hospitals that have their own water systems. Transient Non-Community Water System (TNCWS): A public water system that provides water in a place such as a gas station or campground where people do not remain for long periods of time.

## Radionuclides Responsible for the Third Highest Water Quality Violations in Ground Water Supply Systems – continued from page 17

**Table 4**  
**Radionuclide Violations by Community Water System Size**

Contaminant Types	Public Water System Size Category (Population Range Served)	Contaminant Name	Violations in 2008
Radionuclides	Very small (25–500)	Combined radium (–226 & –228)	336
		Combined uranium	196
		Gross alpha, excl. radon & uranium	162
		Gross beta particle activity	3
	<b>Very Small Total</b>		<b>697</b>
	Small (501–3300)	Combined radium (–226 & –228)	142
		Combined uranium	91
		Gross alpha, excl. radon & uranium <sup>91</sup>	
		Gross beta particle activity	1
	<b>Small Total</b>		<b>325</b>
	Medium (3301–10,000)	Combined radium (–226 & –228)	35
		Combined uranium	19
		Gross alpha, excl. radon & uranium	24
		Gross beta particle activity	1
	<b>Medium Total</b>		<b>79</b>
	Large (10,001–100,000)	Combined radium (–226 & –228)	89
Combined uranium		10	
Gross Alpha, Excl. Radon & U		28	
<b>Large Total</b>		<b>127</b>	
Very large total (>100,000)	Combined radium (–226 & –228)	77	
<b>Radionuclides Total</b>		<b>1235</b>	

These and other data related to public water systems can be found on the Environmental Protection Agency website at [www.epa.gov/ogwdw000/databases/pivottables.html](http://www.epa.gov/ogwdw000/databases/pivottables.html).

*This article was prepared by Charles Job, Office of Ground Water and Drinking Water, US Environmental Protection Agency, Washington, DC 20460; it represents information summarized from EPA's website and is not a statement of EPA policy. ■*

# Lead and Copper Rule – Short Term Revisions

## *Subtitle: Don't Panic!*

by Autumn Coleman, Lead and Copper Rule Manager, Public Water Supply Section, DEQ

The Federal Government has made changes to the Lead and Copper Rule. The Lead and Copper Rule Short Term Revisions (LCRSTR) were published in the Federal Register on October 10, 2007 and became law on December 10, 2007. In Montana, the LCRSTR became effective on December 25, 2008.

The purpose of the LCRSTR was to enhance the implementation of the LCR in the areas of monitoring, treatment, customer awareness, lead service line replacement and improve compliance with the lead public education requirements. The key elements of the LCR, including optimal corrosion control treatment and source water treatment were not affected by the LCRSTR. The LCRSTR were born out of an EPA national review committee that was tasked to look at changes that could be made to existing regulations to address implementation issues with the LCR. The LCRSTR were developed out of that committee's recommendations. According to the EPA, long term revisions to the LCR will likely start soon.

All community and non-transient non-community water systems will be affected by the LCRSTR. Transient water systems are not regulated under the LCR. Below is a brief explanation of the new regulations that will affect Montana public water supplies, additional guidance can be found online at [www.deq.mt.gov/wqinfo/pws/leadcopper.asp](http://www.deq.mt.gov/wqinfo/pws/leadcopper.asp).

### Minimum Number of Samples Required

The revision clarifies language and changes the minimum number of samples required for small systems serving less than 100 people and having less than 5 drinking water taps. With written permission from the state, these certain small systems may reduce the number of samples required to one sample per tap used for human consumption where there are fewer than 5 taps in a system. This will affect the 90<sup>th</sup> percentile calculation for determining compliance. If a system collects less than 5 samples, the highest lead or copper level will be compared against the action level.

### Definitions for Compliance and Monitoring Periods

The revisions clarify the "compliance period" as a three-year or year calendar period and the "monitoring period" as the specific period in which a water system must conduct required monitoring, or the seasonal requirement of sampling between June and September. In addition, the revisions provide a number of

clarifications throughout the rule to explain when compliance and monitoring periods begin and end. These clarifications help define the timing of actions following a lead or copper action level exceedance; timing of monitoring activities related to reduced monitoring schedules; and reporting requirements.

The LCRSTR clarified that a system has exceeded an action level as of the date on which the monitoring period has ended (e.g., on September 30). The clarification is also intended to ensure that the system and the state begin actions to reduce exposure as soon as possible.

The LCRSTR clarified the timing of monitoring activities for systems that qualify for reduced lead and copper monitoring. **The revisions specify that triennial samples must be collected no later than every third calendar year.** That means that systems will no longer be allowed to sample any time within a three year monitoring period, their samples cannot exceed three years from the previous samples.

The LCRSTR also clarified the due date for Water Quality Parameter (WQP) monitoring following a lead or copper action level exceedance. The revision requires that the start of the six month WQP monitoring period to coincide with the start of the four month monitoring period during which the exceedance occurred. This will allow systems two months following the end of the monitoring period (September 30<sup>th</sup>) to collect WQP samples (due November 30<sup>th</sup>). All lead and copper and WQP results are due by the 10<sup>th</sup> day following the monitoring period.

### Consumer Notice of Lead Tap Water Monitoring Results

This is a new requirement added under the LCRSTR. The public education requirements have been amended and added a new notification requirement that requires all public water supplies to provide consumers who occupy homes or buildings that are part of the utility's monitoring program with results when their drinking water is tested for lead. This notification is due within 30 days of when the system learns of the results. The notification must contain specific information on the health effects of lead, steps to reduce lead exposure in drinking water, water utility contact information, and the action level for lead. A copy of the notice and certification of the consumer notice is due to the state within three months following the end of the monitoring period.

*continued on page 20*

## Lead and Copper Rule – Short Term Revisions – *Subtitle: Don't Panic!* – continued from page 19

The DEQ has provided water systems with sample consumer notices and certifications that systems may use and contain the mandatory language about lead as required by the LCRSTR. Additional copies may be obtained online at [www.deq.mt.gov/wqinfo/pws/leadcopper.asp](http://www.deq.mt.gov/wqinfo/pws/leadcopper.asp), or by contacting Autumn Coleman at 406-444-5360.

### Advance Notification/Approval of Long-Term Treatment and Source Water Changes

The revisions require systems to notify the state of any long-term treatment or source water changes, and require water systems to receive approval from the state before making any long-term treatment changes or adding a new source. When a water system changes its treatment processes or adds a new source, it can unintentionally affect the system's optimal corrosion control or water quality which could lead to high levels of lead and/or copper in drinking water. Currently in Montana, under ARM 17.38.101, a person may not commence construction, alteration, extension or operation, or a public water supply system until the applicant has submitted a design report along with the necessary plans and specifications for the system to the DEQ for its review and approval. At this time, the notification and approval required under ARM 17.38.101 will meet the new requirements of the LCRSTR.

### Public Education Requirements

Water systems are still required to deliver public education materials after a lead action level exceedance. However, changes have been made to the content of the written public education materials and there are additional delivery requirements now required. Updated language for lead public education is available on-line at [www.epa.gov/safewater/lcrmr/compliancehelp\\_draftguidance.html](http://www.epa.gov/safewater/lcrmr/compliancehelp_draftguidance.html). The lead and copper rule manager will work with all systems with a lead action level exceedance to ensure that the appropriate public education language is used. If systems want to modify the lead public education language, state approval is required.

Water systems are also required to complete additional delivery requirements to ensure that customers receive the information they need to limit their exposure to lead in drinking water. The expanded delivery requirements include delivery to organizations serving at-risk populations (childcare facilities, obstetricians, midwives and preschools), local health agencies, billing customers, press releases, and web site posting. Non-transient non-community systems do not face any changes to delivery requirements under the LCRSTR.

*Remember, lead public education is only required if a system exceeds the lead action level.*

### Consumer Confidence Reports (CCR) Requirements

Under the LCRSTR, all community water systems are required to provide information in their CCRs about lead in drinking water regardless of whether the system has detected lead in any of its samples. The statement must include the following language, and can only be modified upon approval by the state.

“If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. [NAME OF UTILITY] is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).”

### Reevaluation of Lead Service Lines

The LCRSTR require water systems to reconsider any lines previously determined not to require replacement (tested out lines) if they exceed the action level again in the future and resume a lead service line replacement program. Water systems must update their inventory of lead service lines to include those that were reclassified as “replaced through testing.” The previously tested out lines must then become part of the new lead service line replacement program.

Please check out the Lead and Copper Rule online at [www.deq.mt.gov/wqinfo/pws/leadcopper.asp](http://www.deq.mt.gov/wqinfo/pws/leadcopper.asp).

Questions can be addressed to Autumn Coleman at (406) 444-5360. ■

# What is GWUDISW and Why Are You Asking for Special Samples?

by Jake Kandelin, GWUDISW Rule Manager, PWS

**G**WUDISW stands for Ground Water under the Direct Influence of Surface Water. My area of responsibility is evaluating ground water sources for this influence. Keeping our ground water clean is important because of the harmful microorganisms such as Giardia and Cryptosporidium that may be present in surface water. The GWUDISW determination process is described in Water Quality Circular PWS-5, available on the DEQ website at the following website: [deq.mt.gov/wqinfo/Circulars/PWS5revised.pdf](http://deq.mt.gov/wqinfo/Circulars/PWS5revised.pdf). The first part of GWUDISW assessment is the Preliminary Assessment (PA) usually done by field personnel during a sanitary survey. The field person scores the source in the area of historical contamination, distance to surface water, and details about the source.

If a source fails the PA, DEQ may require that Microscopic Particulate Analysis (MPA) sampling be conducted as close to the source as possible and prior to any treatment. MPA sampling is a low-flow filter sample requiring long-duration pumping and is also described in PWS-5. The filter sample is carefully handled to prevent contamination and shipped to a lab for analysis. At the lab the filter is taken apart and the numbers of different types of organisms known to exist in surface waters are counted. Types of organisms include Giardia cysts, Cryptosporidium, algae, diatoms, insects and larvae, and plant debris. A large number results the lab assigning a “High Risk” score to the sample. DEQ will then either require that the source be repaired or declare the source to be GWUDISW. If the source is no longer classified as groundwater then the system is required to treat the source water to surface water standards. The consequences of accidentally contaminating the filter during sampling could be very costly to the system in terms of time and money. Care should be taken to ensure the cleanliness of all sampling equipment. Permanent sampling equipment such as pumps, tubes, and hoses need to be kept clean and free of organic material between uses.

## How do I prepare for MPA sampling?

You will need to contact a certified lab to arrange for the testing. Only a few labs in the country are certified; please call me at (406) 444-4463 or email me at [jkandelin@mt.gov](mailto:jkandelin@mt.gov) for the list. I can also send you detailed step-by-step instructions on how to conduct MPA sampling.

## Where MPA sampling should be done?

MPA sampling requires a threaded tap, installed in the line as close to the source as practical and generally before treatment. Installation of a sampling tap should be done by a licensed plumber. The sampling tap should be protected from the weather and kept clean and free of any organic material.

## Specific sampling issues for wells, hand pumps, springs, and infiltration galleries

### Wells

Wells should be pumped and purged before sampling especially if the pump is used intermittently. The purging time should be sufficient to evacuate the well of all stagnant water before a sample is collected. Usually this is the time necessary to purge several well casing volumes. The volume of water in the well should be known before purging. In order to calculate the volume, well details such as well diameter, well depth, and an accurate static water level need to be known.

### Hand pumps

Hand pumps also need to be purged before sampling for the same reasons as wells. Well details and a static water level are again useful to know. Pumping for MPA samples should be done with a low-flow pump such as a peristaltic pump. A small diameter tube will need to be introduced into the drop pipe to the static water level. Because of the low flow rates, plan for an extended period of time (e.g. 24 hours) to do MPA sampling.

### Springs and Infiltration Galleries

A sampling tap should be installed after the spring box or collection well in the pipe leading to the distribution system. If this is not practical, samples need to be taken in the spring box or collection well. Spring boxes should be cleaned first by scrubbing the walls and removing all visible debris; then the spring box should be flushed. If there is sufficient flow, a MPA sample can be collected without a pump. If not, low-low pumping may be required, possibly using a peristaltic pump.

### Now that I have the sample what do I do with it?

MPA samples must be shipped at temperatures above freezing but below room temperatures. You need to place the filter in a freezer bag with water from the cartridge holding the filter avoiding contamination of the filter. Time is crucial, typically no

*continued on page 22*

## What is GWUDISW and Why Are You Asking for Special Samples? - continued from page 21

more than 30 hours should pass between the end of the sampling and the start of analysis. Each lab will have specific instructions about how samples should be handled. Please plan ahead so the lab gets the filter before the end of the work week.

### Still have questions?

Don't panic! The GWUDISW determination process is complicated. Please contact me at (406) 444-4633 or email me at [jkandelin@mt.gov](mailto:jkandelin@mt.gov). I will be happy to help you. ■

## New Requirements for Submitting Pumping Tests to DEQ

by Eric Regensburger

Montana Department of Environmental Quality

During the 2007 Montana legislative session, Senate Bill (SB) 324 was passed. SB 324 requires aquifer tests (also referred to as pumping tests) that are required by a state agency to be submitted to the Montana Bureau of Mines and Geology (MBMG).

To comply with this new statute, all aquifer test results required by the DEQs Public Water and Subdivisions Bureau (PWSB) and submitted after March 15, 2008 must be submitted on a standardized form. The form shall be submitted in both hard copy and in electronic format for each aquifer test conducted. Please do not forward test results to the MBMG yourself, the PWSB will be responsible for that transfer.

To provide consistency across state agencies, the PWSB will use the same form as is required by the Montana Department of Natural Resources and Conservation (DNRC). That form (currently referred to as form 633) can be found at the following web-site: [dnrc.mt.gov/wrd/water\\_rts/wr\\_general\\_info/wrforms/wr\\_forms.asp](http://dnrc.mt.gov/wrd/water_rts/wr_general_info/wrforms/wr_forms.asp). This form may be modified in the future to be more compatible with MBMGs database system, so keep checking the website every time you submit a new aquifer test to make sure you're using the most current form.

This requirement only applies to pumping tests required by DEQ, it does not apply to the shorter development tests that are conducted as part of the well drilling process. Those tests are included in the well construction log and are already forwarded to the MBMG by the drilling contractor.

The MBMG will put the results of the aquifer tests it receives into the Ground Water Information Center (GWIC) database.

That database is available to the public at the following web address: [mbmgwic.mtech.edu/](http://mbmgwic.mtech.edu/). This is the same database that contains well logs from across the state.

The PWSB will also be working on new technical requirements for conducting pumping tests that will coordinate with the new form. Those technical requirements are planned to be similar to the current aquifer test procedures required by DNRC. Our goal is to make it easy for applicants to conduct aquifer tests that will meet the technical requirements for both the DNRC and the DEQ when such a test is required by both agencies for the same project. We will solicit comments from all interested parties on those new rules before finalizing them.

If you wish to be included in any meetings or mailings regarding those proposed rules, please contact Eric Regensburger of the PWSB at 444-0916 or [eregensburger@mt.gov](mailto:eregensburger@mt.gov). ■

# Dosage Equation for Liquid Chemical Feeders

*By Jerry Burns, DEQ, Billings*

$$\text{Dosage (ppm)} = [(S) (F) (R) (C) (SG+W)] \div [(Q) (1+W)^2]$$

- S = Stroke (expressed as a decimal)
- F = Frequency or Speed (expressed as a decimal)
- R = Solution Feed Pump Maximum Capacity (GPD)
- C = Concentration of Raw Chemical (expressed as a decimal)
- SG = Specific Gravity of the Raw Chemical
- W = Gallons of Dilution Water per Gallon of Raw Chemical
- Q = Pumping Rate (MGD) Note: MGD = GPM x 0.00144

**EXAMPLE PROBLEM:** Determine the chlorine dosage for a public water supply served by a well pump operating at 100 gpm ( $Q = 100 \times 0.00144 = 0.144$  MGD), metering pump capacity of 2 gal/hour ( $R = 2 \text{ gal/hr} \times 24 \text{ hrs/day} = 48$  GPD), stroke set at 40% ( $S = 0.4$ ), frequency/speed set at 70% ( $F = 0.7$ ), raw chlorine concentration is 12.5% ( $C = 0.125$ ), specific gravity of the liquid chlorine is 1.13 ( $SG = 1.13$ ), and 2 gallons of dilution water per gallon of liquid chlorine are added ( $W = 2$ ).

$$\begin{aligned} \text{Dosage (ppm)} &= [(0.4) (0.7) (48) (0.125) (1.13+2)] \div [(0.144) (1+2)^2] \\ &= 4.06 \text{ ppm} \end{aligned}$$

When  $SG = 1$ , the equation reduces to:

$$\text{Dosage (ppm)} = [(S) (F) (R) (C)] \div [(Q) (1+ W)]$$

Note: It is assumed that the stroke and frequency adjustments of the liquid chemical feeder are linear. If not, determine the chemical feed rate in GPD and substitute for  $(S \times F \times R)$ .

# Water Sector Security News and Resources

by Dusti Lowndes

Security & Emergency Preparedness Coordinator

DEQ PWS Kalispell Office

406-755-8985 ext.106 • [dlowndes@mt.gov](mailto:dlowndes@mt.gov)

The information, programs, and encouraged partnerships keep expanding and improving within the security and preparedness arena. DEQ continues to provide training on many of these subjects (NIMS, mutual aid, response exercises, contamination testing technology, emergency response and critical infrastructure plans and partnerships) at the water schools and in this journal. Voicing your training and resource needs is highly encouraged so that we can continue to assist you in accomplishing your goals of preparedness and security. A couple of things to note:

1. Several communities and organizations are providing Incident Command System/National Incident Management System training and are conducting table top/functional exercises. Please make contact with your local office of emergency services or disaster emergency services and let them know you are interested in being invited to trainings. Participating in a variety of exercises expands partnerships

and addresses issues that are best not discovered during an emergency or security threat.

2. WARN (Water/Wastewater Agency Response Network) is a mutual aid program for water utilities. Montana has organized our own MT WARN with the help of an aggressive leadership and steering committee. Please see brochure in this journal and prepare for your systems emergency by signing up today.
3. The state also has a Water and Wastewater Critical Infrastructure Committee (WWCIC) which is 30+ members strong and meets quarterly to discuss security and preparedness items. We will be having our annual in person meeting on June 9<sup>th</sup> in Helena. If your organization is interested in being a member please contact me.

Have a great summer! Dusti

## NOW the Security Preparedness Contest for this journal issue is –

1. What organization has the mission to **support** civil authorities at a domestic chemical, biological, radiological, nuclear, and explosive (CBRNE) incident site by **identifying** CBR agents/substances, **assessing** current and projected consequences, **advising** on response measures and **assisting** with appropriate requests for state support?"
2. And how are they activated to support?



Email me [dlowndes@mt.gov](mailto:dlowndes@mt.gov) with your answer – the winner with the correct answer will be drawn from a hat one month after the journal is issued.

continued on page 25



## Water Sector Security News and Resources - continued from page 24

### Water Security and Preparedness Resources:



## WaterISAC Water Security Network

WaterISAC Basic is a free information and alert service designed to benefit drinking water and wastewater utilities. Any water utility member can register for free at [www.WaterISAC.org](http://www.WaterISAC.org) to become a WaterISAC Basic subscriber. All subscribers receive important alerts as well as our monthly e-newsletter. WaterISAC Basic is a service of the Water Information Sharing and Analysis Center (WaterISAC), which electronically disseminates bulletins and advisories issued by the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Homeland Security (DHS).

[www.WaterISAC.org](http://www.WaterISAC.org)

Phone: Toll Free 1-866-H20-ISAC (426-4722)

E-mail: [Info@WaterISAC.org](mailto:Info@WaterISAC.org)

### More on WaterISAC and its Establishment of Two-Tiered Service To Support Public Safety

WaterISAC has launched a new website with new service levels. The WaterISAC subscription service becomes WaterISAC Pro while the WaterSC (Security Channel) will be known as WaterISAC Basic.

WaterISAC Pro is the only national security information resource serving the water sector and gives its subscribers access to “sensitive” and “For Official Use Only” information and threat warnings. “Our mission at the WaterISAC is to provide American utilities invaluable resources, information and 24/7 access to our trained security analysts,” says John P. Sullivan, Jr., WaterISAC’s chairman of the board and the chief engineer of the Boston Water and Sewer Commission.

The WaterISAC Pro service is intended for water and wastewater utility CEOs, directors, managers, security, and IT personnel,” says WaterISAC Executive Director Diane VanDe Hei. WaterISAC Pro subscribers have special access privileges to an online secure portal that provides time-sensitive information on threats to the nation’s water systems

WaterISAC also provides a free and valuable service called WaterISAC Basic. The Basic subscriber receives important

information from the federal government, which fosters greater awareness of security issues.

Drinking water and wastewater utilities are encouraged to learn more about WaterISAC and its Basic and Pro services, which can be found at [www.WaterISAC.org](http://www.WaterISAC.org). WaterISAC offers water sector professionals a complimentary demonstration of the Pro service and the online secure portal.

### Guide To Water Security \$ Funding Available:

A new report, *Security Funding Opportunities: Lessons & Observations from Successful Water & Wastewater Utilities*, has been issued by the American Water Works Association. The report looks at the current state of security funding at both a federal and state level and identifies the best opportunities for water and wastewater utilities to obtain funding. It also includes key lessons learned from a wide variety of utilities from across the country that have successfully obtained state or federal funding to support implementation of a variety of security and preparedness programs. Find the report on WaterISAC Basic [www.WaterISAC.org](http://www.WaterISAC.org) in the [Posted Files](#).

\*NOTE: Your county DES Coordinator has access to grants and would be able to point your system to possible funding sources. Also, DEQ’s State Revolving Fund program eligibility criteria allows for specific security upgrades in a project’s submittal – see [www.deq.state.mt.us/wqinfo/srf/DWSRF/index.asp](http://www.deq.state.mt.us/wqinfo/srf/DWSRF/index.asp) for more details.

### NIMS Model Under Development For Small Systems:

The country’s small community water and wastewater utilities may soon have a new resource for implementing the National Incident Management System (NIMS) to help protect their critical water infrastructure. The Federal Emergency Management Agency, Texas Rural Water Association and SEMS Technologies, LLC produced a NIMS guidance and are now working to fully develop a model that can be adopted by every community. The model relies on modification of the Security and Environmental Management System (SEMS) software to incorporate all of the NIMS requirements into a community’s emergency response plan. This will enable water and wastewater utilities to become NIMS certified with the appropriate Incident Command System (ICS) training directly related to each community’s unique circumstances and appropriate individuals. The National Rural Water Association is currently evaluating the model for use nationwide. ■

# Chemical Security and the Water Sector

by Jim Harksen

A toxic chemical leak at a water system could endanger citizens living nearby. To protect the millions of Americans who live close to water systems, congressional leaders and the new Obama administration may no longer exempt water systems from the Chemical Facility Anti-terrorism Standards (CFATS).

When Congress created the CFATS Program in 2006, they did not create permanent regulations and they specifically excluded the water sector. The Department of Homeland Security Appropriations Act of 2007 makes the Department of Homeland Security (DHS) responsible for the security of high-risk chemical facilities. That means DHS oversees any facility that manufactures uses, stores, or distributes certain chemicals at or above a specified quantity.

## New Presidential Priorities

The Obama administration favors making the temporary chemical facility security standards permanent. Obama's new Cabinet decided that the Administration should support an amendment to the Department of Homeland Security's chemical security program to bring water and wastewater utilities into the CFATS program for the first time.

Chemical security and water sector improvements are not new issues for Barack Obama. In 2006, then Senator Obama helped sponsor legislation requiring chemical facilities to use safer and more secure alternatives to their hazardous chemicals. Obama also introduced legislation to provide \$37.5 million to upgrade the monitoring and security efforts of drinking water systems.

## Inherently Safer Technologies

The CFATS regulation emphasizes physical security enhancements. Many facilities could remove themselves from the purview of the CFATS program by choosing safer alternatives to the identified hazardous chemicals. For example, water systems could use liquid bleach, ozone, or ultraviolet light in their treatment processes instead of chlorine gas.

Water systems concerned about switching from chlorine gas to another disinfectant process can opt to generate chlorine gas on-site. That would reduce risk from on-site storage and the risk inherent in transporting millions of tons of chlorine gas on the nation's highways and railroad networks.



## Chemicals of Interest

The CFATS regulation contains a list of nearly 300 “chemicals of interest” (COI). The regulation will not consider a water system a high-risk chemical facility unless it has a minimum amount of the listed hazardous chemicals. Water systems are most likely to have three chemicals of interest on site. DHS identified the threats associated with each of these chemicals as theft and release:

	Theft Hazard	Release Hazard
Propane	Not Published	60,000 pounds
Anhydrous Ammonia	Not Published	10,000 pounds
Chlorine Gas	500 pounds	2,500 pounds
Sulfur Dioxide	500 pounds	5,000 pounds

DHS will require water systems that possess at least the minimum amounts of these hazardous chemicals to complete an online survey, called the “Top Screen” questionnaire, to assess their overall risk. This survey is part of the Chemical Security Assessment Tool (CSAT).

If the survey determines a facility is high-risk, DHS will require it to prepare and submit a Security Vulnerability Assessment (SVA). In addition, the facility must prepare, submit, and implement a Site Security Plan (SSP).

The CFATS regulation makes it illegal for a water system considered a “high-risk chemical facility” to operate without an approved Security Vulnerability Assessment and Site Security

*continued on page 27*

## Chemical Security and the Water Sector — continued from page 26

Plan. This is similar to the Bio-terrorism Act of 2002, which required water systems to assess their vulnerabilities and implement emergency response plans to address those risks.

### Employee Training

The Department of Homeland Security offers free online security training for employees at high-risk chemical facilities. The training will help employees be more aware of their surroundings and the signs that may indicate a threat to security. Portions of the training are scenario based and emphasize what to do in the event of a security breach. You can access the training at [chemicalecuritytraining.com/](http://chemicalecuritytraining.com/).

### More Information:

For more information about the CFATS regulations, visit the Department of Homeland Security online at [www.dhs.gov/xprevprot/laws/gc\\_1166796969417.shtm](http://www.dhs.gov/xprevprot/laws/gc_1166796969417.shtm).

The Center for American Progress published a report on the concept of minimizing risk by switching to safer alternatives. *Chemical Security 101: What you don't have can't leak, or be blown up by terrorists* is online at [www.americanprogress.org/issues/2008/11/chemical\\_security.html](http://www.americanprogress.org/issues/2008/11/chemical_security.html).

*Article by Jim Harksen*

*Chemical Security Inspector*

*DHS-Chemical Facility Anti-Terrorism Standards (CFATS)*

*(formerly WA's Water Security Coordinator)* ■

## Utilities Helping Utilities

**A** Water and Wastewater Agency Response Network (WARN) is a network of utilities helping other utilities to respond to and recover from emergencies.

The purpose of a MT WARN is to provide a method whereby water/wastewater utilities that have sustained or anticipate damages from natural or human-caused incidents can provide and receive emergency aid and assistance in the form of personnel, equipment, materials, and other associated services as necessary from other water/wastewater utilities.

**The MT WARN Framework provides Montana's Water and Wastewater Utilities a forum for establishing and maintaining emergency contacts**

The objective of this network is to provide rapid, short-term deployment of emergency services to restore the critical operations of the affected water/wastewater utility. The back-



bone of the WARN concept is the Mutual Aid and Assistance Agreement. It is in the Mutual Aid and Assistance Agreement where provisions for network activation, reimbursement, liability and other issues are mutually agreed upon by participating utilities.

*continued on page 28*

## Utilities Helping Utilities – continued from page 27

### Participation is voluntary; there is no obligation to respond, and there is no direct cost to become a member of the network.

Events such as 9/11, the 1994 Northridge earthquake, the 1997 Red River flood, and more recently Hurricanes Katrina and Rita have helped identify a need for water and wastewater utilities to create more intrastate mutual aid and assistance programs because:

- utilities require specialized resources to sustain operations;
- government response agencies and other critical infrastructure rely on water supplies;
- utilities must provide their own support in the immediate aftermath of an incident as state and federal resources will not likely be available or deployed for up to 72 hours;
- large events impact regional areas, making response from adjacent utilities impractical;
- disasters impact utility employees and their families creating greater need for relief;
- agreements must be established and in place for federal reimbursement eligibility; and
- engagement in mutual aid/assistance supports Department of Homeland Security requirements for compliance with the National Incident Management System (NIMS).

### How do I join MT WARN?

- Step 1: Go to the MT WARN website:  
[www.MTWARN.org](http://www.MTWARN.org) (available mid-summer 09), or skip Step 2 and contact MT WARN directly.
- Step 2: Click on the Join MT WARN button and complete the requested information.
- Step 3: Print the MT WARN mutual aid agreement and membership resolution. Take them to your management, governing board or council so they can authorize your organization's participation.
- Step 4: Return the signed agreement and contact information to MT WARN.
- Step 5: After receiving your log-in information, log-in to the MT WARN website. Fill out the member's login information page, emergency contact and equipment database information.

OR CALL for a packet of information.

### Is my community required to join MT WARN?

NO – MT WARN is a voluntary program. You join to help your community and help other communities.

### What if my community cannot respond during a disaster?

Signing the mutual aid agreement does not obligate your organization to provide emergency assistance to any organization during any emergency. Each request for assistance is separate and independent from all others.



**MTWARN contacts:**

MT WARN  
 c/o Nancy Bruner of MSAWWA  
 885 Berland Loop • Conrad, MT 59425

Phone: (406) 627-2478 • Cell: (406) 450-9878  
 Fax: (406) 271-2331

[www.mtwarn.org](http://www.mtwarn.org) (available mid-summer 2009)



MT WARN can provide rapid, short-term deployment of emergency services and equipment to assist water/wastewater utilities in recovering from:

### Natural Disasters

Tornados, high winds, floods, snow and ice storms, wildfire, lightning and thunderstorms, regional electrical outages, pandemics, etc.

*continued on page 29*

## Utilities Helping Utilities – continued from page 28

### Manmade Disasters

Significant accidents, vandalism, hazardous materials release, riots, or terrorist attacks.



### Benefits of a Statewide WARN Program

- Creates one uniform statewide mutual aid program for all Water and Wastewater utilities.
- Facilitates coordinated regional emergency responses.
- Effectively utilizes resources (manpower and equipment).
- Provides access to statewide and regional experts from a variety of local organizations.

- Expedites responses because mutual aid agreements are signed in advance of a disaster.
- Facilitates federal reimbursements if disaster funds become available (mutual aid agreements are required to receive federal funds).
- Reassures your public through the continuity of vital service during emergencies.

### *Special Thanks to our Leadership Group:*

City of Great Falls  
 City of Bozeman  
 City of Billings  
 City of Havre  
 City of Kalispell  
 Hill County Water District  
 Wolfe Water Management Inc.  
 Mountain Water Company  
 MT Dept. Environmental Quality  
 MT Rural Water Systems  
 MT Section American Water Works Association  
 MT Water Environment Association  
 MT Association of Water & Sewer Systems  
 Midwest Assistance  
 HDR Engineering, Inc.  
 MT Water & Wastewater Critical Infrastructure Committee  
 MT Disaster and Emergency Services  
 US Environmental Protection Agency ■

## Free Septic and Well System Training Offered to Montana Residents

The Montana Department of Environmental Quality (DEQ) and several Montana counties recently held a series of workshops to help landowners learn how to properly manage their private septic and water well systems.

During the training, homeowners and resource professionals talked about how septic systems and wells work and how they should be maintained. They also discussed land-use activities associated with individual pollutants, drinking water standards, and testing private wells.

Around 450 folks attended the workshops over the past year held at several locations across the state. Approximately half those in attendance took advantage of the offer for a free water analysis for nitrate, and all went home with educational materials describing the proper operation and maintenance of septic systems and wells.

If you would like to host a workshop in your area, contact Joe Meek at (406) 444-4806, or [jmeek@mt.gov](mailto:jmeek@mt.gov).

A PWS can host a workshop or ask that the county health department host a workshop on your behalf. It can be a real benefit to public water system operators where PWS wells and septic systems are in close proximity since the workshops educate homeowners on how to maintain septic system treatment capability. The workshops are easy to host and costs to the workshop host is minimal. ■

# Source Water Protection – Getting There Through Training

by Jeffrey Herrick DEQ

The Source Water Protection Program at DEQ is tasked with several aspects of protecting public drinking water supplies from potential contaminant sources. To that end, we provide technical assistance and training for water system owners and operators. The folks that attended past training events said that they were both interesting and provided practical information. Our hope is that what we provided to the operators would help them manage their water systems to promote safe drinking water for the long-term. To host these workshops we have been teaming up with DEQ Public Water Supply, DEQ Septic Tank Pumper Program, MSU Extension, various county health departments, conservation districts, and Montana Rural Water Systems, Inc. We have developed training covering a wide variety of topics and are approved to provide continuing education credits (CECs) for water system operators, licensed well drillers, and Realtors®. As a result, interest in attending the training events has been growing.

Recently MRWS's Training Specialist Kevin Durocher invited Eric Regensburger (with DEQ PWS Subdivision Review) and me to teach some classes in Butte. Our audience was a mix of water well contractors and water system operators. Although parking was difficult to find and I did get a parking ticket, the training went quite well. Eric presented some of the finer points of the regulations regarding well drilling and pump testing for public water supply wells, and I presented a class on small well systems and another class on land and water resource information available on the internet.

Participants seemed to like all of our classes, but the resource information on the internet class seemed to catch their interest and imagination. That class began in a typical way with a few slides and me up front talking about what we were all looking at. Then we shifted gears and I linked up to the internet and parked a volunteer in front of the laptop to have them do the "driving." The laptop was still hooked up to the projector so the rest of the class was able to see how the "student driver" navigated to and moved about on each of the websites we discussed. I wish it had been a computer lab where all of the students could be on computers (maybe next time).

The websites we visited are all hosted by various Montana state agencies to support state agencies and private citizens in their search for information. The old saying goes, "knowledge is

power," and I agree with it. I'm always surprised by the amount of information that can be found on the internet and how useful it can be to all of us. We visited websites designed to help us:

- make decisions about where to drill a well;
- find information from all the wells in an area;
- find well logs using on-line interactive mapping programs;
- find well logs through searches on MBMG's GWIC;
- find and examine current and historic aerial photos for everywhere within the state using an online interactive mapping program;
- find topographic maps for everywhere within the state also using an online interactive mapping program;
- determine where property lines are; and
- determine who property owners are and find relatively in-depth information about any given property. These last two items used a couple of different state agency's interactive mapping programs.

The "student driver" was able to navigate to his own rural property and pull up information that he did not realize was out there.

If you are interested in learning some of what we covered in the class I just described, you are probably not alone. If you can gather enough friends or colleagues who want to attend this training or any of the other classes we present, let us know. We are happy to teach almost anywhere in the state (if there are enough students to justify the time and travel costs). The training we offer does not duplicate material that water system operators receive at their Water Schools.

*continued on page 31*

## Source Water Protection – Getting There Through Training – *continued from page 30*

What types of training do we have? Following is a short list of some of the topics we present. However, with a little lead-time,

we can probably adapt or develop a workshop to suit your local needs.

CLASS / SUBJECT	LENGTH OF CLASS
<b>Land &amp; Water Resource Information Found on the Internet through the Natural Resources Information Center (NRIS)</b> (and other Montana State websites) – This class describes how you can find detailed and revealing information about any location or property.	<b>2 hours</b>
<b>Land &amp; Water Resource Information Found on the Internet through the Montana Bureau of Mines &amp; Geology (MBMG) – Ground Water Information Center (GWIC)</b> – This class enables the students to find and interpret well logs and information on local groundwater or surface water.	<b>1 hour</b>
<b>Groundwater in Montana</b> – This is a non-technical presentation of hydrogeology and groundwater resources of particular areas, the region, and the state.	<b>1.5 hours</b>
<b>Hydrogeology – Groundwater</b> This is a more focused discussion of groundwater characteristics and groundwater issues relevant to the locality of the class and statewide. It is more technical than the Groundwater in Montana class, but is still designed for the public (i.e., non-scientists).	<b>1.5 hours</b>
<b>Drinking Water Source Protection Planning</b> – This is a discussion of practical ways to reduce the vulnerability of a drinking water well to contaminants in the area.	<b>1.5 hours</b>
<b>Septic Systems: Construction, Operation, and Maintenance</b> – This is a thorough explanation of how private and small public septic systems work; types of septic systems; what septic treatment goals are; and what their limitations are. Also covered are discussions of operation and maintenance, as well as state and local regulations. This material is often presented by a local sanitarian and DEQ staff to ensure the message is tailored to local issues. Free nitrate screening is often available for all water well samples brought into the class. <u>Note</u> : This class is best taught in conjunction with the Well Systems class.	<b>1.5 hours</b>
<b>Well Systems: Construction, Operation, and Maintenance</b> – This is a thorough explanation of how private and small public well systems work; types of domestic water systems; water treatment devices; and treatment methodologies. Also covered are discussions of drilling and construction of wells, and the operation and maintenance of water systems. A DEQ hydrogeologist usually presents this material. Free nitrate screening is often available for all water well samples brought into the class. <u>Note</u> : This class is best taught in conjunction with the Septic Systems class.	<b>1.5 hours</b>

If anyone is interested in hosting some of the above training, give us a call. Our numbers are as follows:

Joe Meek (406) 444-4806

Jeffrey Herrick (406) 444-1595 ■

# It's Time for Your Well to Get a Check-up

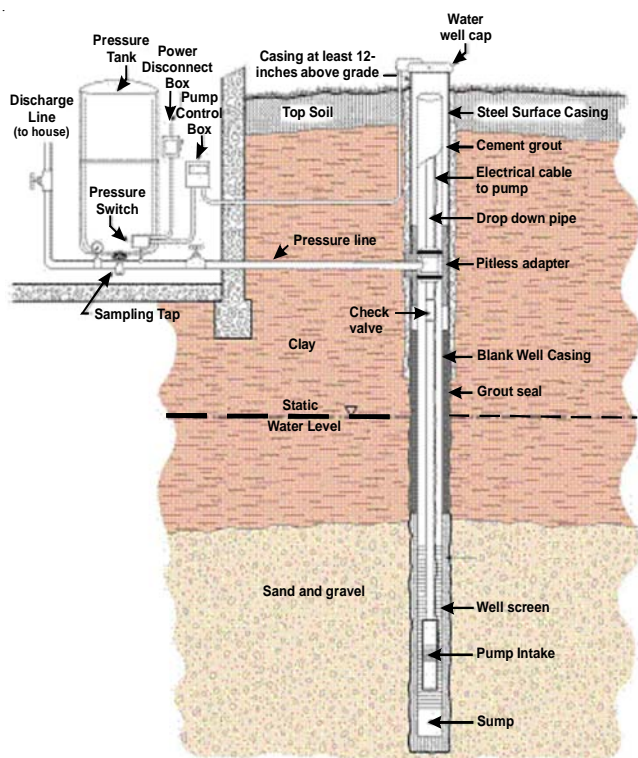
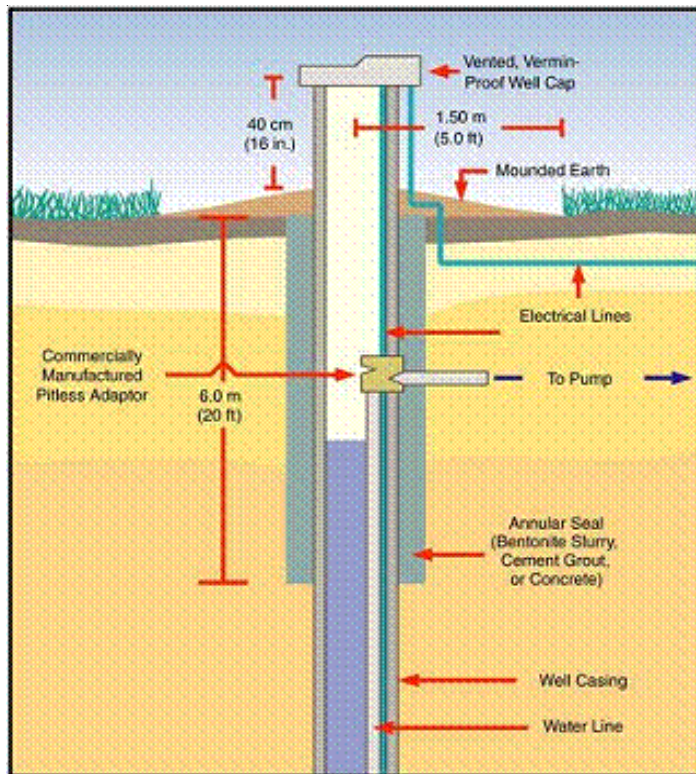
by Jeffrey Herrick DEQ

## Stay Well by Checking Your Well!

The Montana Department of Environmental Quality and the Montana Watershed Coordination Council encourage all well owners to conduct an annual water well “check-up” that includes a wellhead and pressure tank inspection. Ground water is the primary source of drinking water for most Montanans. If you’re not on a public water supply or utility, in practical terms you’re the manager of your own small water system.

Private water wells require homeowners to take more control of their water quality. Well owners have a responsibility to themselves, their family, and their neighbors to protect their ground water from contamination and ensure that their water system is providing good quality drinking water. Conducting an annual well check-up of your water system is an important step you can take to ensure the proper operation of your well. Through a check-up you can prolong your system’s years of service and you can monitor water quality.

Some of the following suggestions were assembled by the Gallatin Local Water Quality District, Montana DEQ, and the National Groundwater Association.



## An annual well check-up should include:

- As a minimum, test your water for coliform bacteria and nitrates. You can also test for any additional contaminants that may be specific for your area. You should also have your water tested if there is a change in your water’s taste, odor, or appearance; after the well system is serviced; or after a flooding event. Information about how to collect samples and where to send them can be provided by your closest water quality district, your local county sanitarian, or by the DEQ. You should file and keep all test results for future reference.
- Inspect your well parts to ensure they are in good repair. Look for problems such as cracked, corroded or damaged well casing or settling and cracking of the ground surface around the well casing. If any of these problems are present, your well can become a conduit for contamination of the ground water.

*continued on page 33*



**It's Time for Your Well to Get a Check-up** – *continued on page 32*

- Check to make sure your well cap is not broken or missing. If it is, replace it with a new one. If your well does not have a sanitary cap (a two-part cap with a rubber seal), it is recommended that you replace it with a sanitary well cap.
- Inspect your pressure tank and associated plumbing by looking for things like leaks or corrosion, which could lead to future problems.
- Survey the area around your well to make sure there are no hazardous materials (paint, motor oil, household chemicals, etc.) nearby which could spill and contaminate your well water.

**For Good Housekeeping:**

**NEVER** dump hazardous materials on your property and **NEVER** pour them down the drain. If you're on a private well, you're probably also on a private septic system. These systems do recharge groundwater and may not remove some chemicals before the water is discharged to septic drainfields.

Dispose of old or unwanted prescription drugs and over the counter medications by removing them from their original containers, mixing them with an undesirable substance (e.g. coffee grounds, kitty litter), recontainerizing them, and throwing them into your daily trash. Another method is to render illegible any personal information on medication containers, add water and other undesirable substances to the container, then seal the container thoroughly with duct tape before placing into the trash. These are the best disposal methods we have now, but they are not ideal. You can also check with your local pharmacy to see if they have an unwanted drug take-back program.

**Informational Links:**

There are several sources of information on proper well maintenance, water testing, and other local ground water issues.

Gallatin Local Water Quality District ..... (406) 582-3148

Missoula Valley Water Quality District ... (406) 258-4890

Lewis & Clark Water Quality  
Protection District ..... (406) 457-8584

Montana Department of  
Environmental Quality  
Source Water Protection Program ..... (406) 444-6697

Montana Department of Environmental Quality

Montana State University Extension – This addresses household water use, including water sampling.

National Ground Water Association. ■



## Nearby State Offers Promotional Tools

The Washington Department of Health provides utilities and others with [free, downloadable tools, artwork and ideas](#) to help promote tap water. Go to [www.doh.wa.gov/ehp/dw/tapwater.htm](http://www.doh.wa.gov/ehp/dw/tapwater.htm) to see what they offer.

Using the theme “Tap into Goodness,” this Tool Kit provides a way for Washington utilities to go beyond their Consumer Confidence Reports and market the benefits of tap water to their consumers. Bill stuffers and labels for those refillable plastic water bottles everyone seems to be carrying around these days are just a couple of items they offer to help PWSs promote their products. The graphics are shown in a pdf version for viewing and in a graphic software format for actual use.

Any Montana utility could adapt and use these materials since there are no copyright restrictions; by the design, you may use these tools as you wish. They ask that you send them an email to [leslie.gates@doh.wa.gov](mailto:leslie.gates@doh.wa.gov) to let them know you are using their materials.

### Why promote your drinking water?

How do your customers feel about the water you provide? Do

they buy bottled water to drink because they believe it’s “purer” or “fresher” or “just tastes better?” Do they use expensive home filtration systems to catch contaminants that don’t exist, or exist only in trace quantities that are not harmful?

### Many people trust bottled water more than tap

In a 2007 telephone survey of 1,606 Washington residents, more than half said they trust bottled water more than tap. For young people (under age 35), fully 61 percent said they trust bottled water more.

Yet tap water is arguably more highly regulated and controlled than bottled water. And, in blind taste tests, municipal tap water often meets or even beats bottled water.

### Why this lack of trust is a problem for utilities

The lack of trust in tap water creates a downward spiral. When ratepayers don’t trust tap water, chances are they will be less inclined to pay for infrastructure improvements and necessary rate increases. This affects a utility’s bottom line and, ultimately, its ability to provide safe and reliable drinking water over time. ■

## New Magazine Targeting Smaller Acreage Landowners Available

by Joe Meek, MT DEQ and Robert Moler, NRCS Public Affairs

The spring 2009 edition of *Big Sky Small Acres*, a new magazine created by the Montana Small Acres Team, is being distributed across the state through local conservation districts, weed districts, county planners, extension agents, and others. This magazine is a part of the team’s campaign to connect landowners, owning 1 to 100 acres, with educational, technical, and other resources to promote sustainable management of their lands.

The Montana Small Acres Team is a collaborative, multi-agency group representing Montana Conservation Districts, Montana Department of Environmental Quality, Montana Department of Natural Resources and Conservation (DNRC), Montana State University (MSU) Extension Service, Montana Weed Districts, and Natural Resource Conservation Service (USDA-NRCS).

The first few issues of *Big Sky Small Acres* magazine is part of a pilot distribution phase meant to build interest in what will be a quarterly publication. While the articles may be of interest to just about anyone in rural Montana, the effort to educate land owners on resource protection including Montana’s drinking water should be noted by water system operators.

Additional information can be found on-line at [www.msuextension.org/ruralliving/Magazine.html](http://www.msuextension.org/ruralliving/Magazine.html). ■



## Serving on County Boards, Districts, Commissions & Committees in Montana: A Handbook for Members, Local Government Officials & Citizens

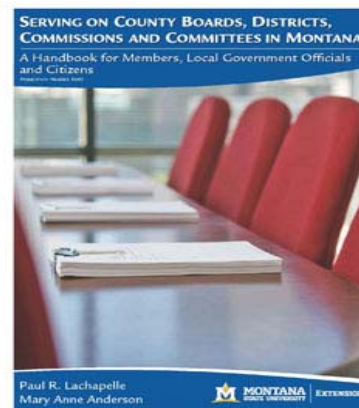
A 45-page resource for people supervising, serving on or interested in public boards across the state. Among the topics covered in the handbook are Montana's open meetings law, code of ethics, board liability, information on wrongful discharge, discrimination, and use of Robert's Rules of Order and motions.

The handbook also provides details on the creation, purpose, membership requirements, authorizing language and funding information for 43 distinct boards, committees, commissions and districts in Montana. It refers to the Montana Code Annotated so that readers can obtain more detailed information about legislative statutes or Justice Department opinions.

The publication is available for **\$8.00** and includes a downloadable file through a password-protected web address

provided in the document. The downloadable version alone is available for **\$4.00**. It contains links to quickly access additional information on statutes, organizations, and government agencies.

The printed copy and digital file can both be ordered from the MSU Extension Distribution Center, either by calling (406) 994-3273 or by emailing [orderpubs@montana.edu](mailto:orderpubs@montana.edu). ■



## Household Hazardous Waste

Household Hazardous Waste (HHW) can be legally put into landfills by citizens and small businesses that generate less than 220 pounds per month. *But should it be?*

Two Montana communities have permanent, ongoing household hazardous waste (HHW) collection programs, and other communities have annual or occasional HHW collection events or paint exchanges. These communities understand that they can better protect water, air and land resources by collecting HHW and offering citizens an alternative to disposing of them in the trash. In addition, certain types of HHW have the potential to cause physical injury to sanitation workers and contaminate septic tanks or wastewater treatment systems if poured down drains or toilets.

The Flathead Valley Solid Waste District has a permanent HHW collection program that residents can utilize throughout the year. The City of Bozeman just recently began a permanent HHW collection program that is accessible all year. For the past 15 years, the Missoula Water Quality District has hosted an annual free HHW collection event for county residents. Businesses and out-of-county residents may also participate, but are charged fees for the items dropped off.

Nationally, HHW handling costs range from \$0.21 to \$2.02 per pound. Michelle Hutchins of the Missoula Water Quality District stated that those costs closely resemble costs in Montana. She estimates their costs range from \$0.56 to \$1.88 per pound.

The Department of Environmental Quality recently added information about HHW to the department's webpages. Information about hosting collection events, existing collection programs, proper handling and disposal guidelines, alternative products and product safety data is available.

For some communities, HHW events may seem cost prohibitive. In this case, education about source reduction of HHW may be a better focus and educational resources can also be found on the DEQ website.

For more information contact Sandra Boggs, Recycling and Market Development Specialist, [sboggs@mt.gov](mailto:sboggs@mt.gov), 841-5217  
Website address: [deq.mt.gov/Recycle/HouseholdHW.asp](http://deq.mt.gov/Recycle/HouseholdHW.asp).

*Did you know Americans generate 1.6 million tons of HHW per year. The average home can accumulate as much as 100 pounds of HHW in the basement and garage and in storage closets.* ■

## Wellhead Security Cover in Development

The Ranch County Water and Sewer District is a small rural water district in NW Montana that was facing the issue of wellhead security. The community wells were developed many years ago long before there was a water district and long before many of us were thinking much about security. Our changing times have elevated their security concerns especially since both wellheads are adjacent to a road and are in plain sight. And due to the layout, fencing wasn't a realistic security option.

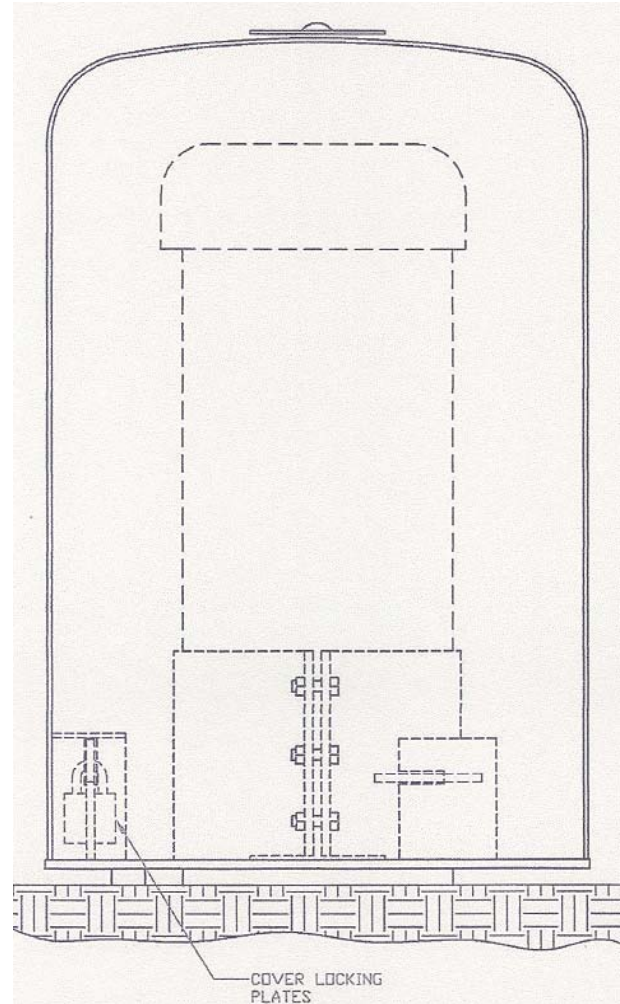
As the district looked at how the wellheads could and should be protected, a couple of key vulnerabilities became apparent:

- Possible severing the electrical connections to the pump;
- Physical impact to the casing and electrical connections;
- Unprotected sanitary seal on wellhead allowing possible injection of toxins via the vent (whether via pranksters or bio-terrorists).

The district looked for commercial solutions to protect the wellheads. The only items found were camouflage using an "out-of-sight, out-of-mind" approach, such as fiberglass faux rocks, or very expensive, very heavy enclosures requiring a concrete base. So, out of necessity, a local inventor created a wellhead security cover, named the Shaggy Mane, after the mushroom of similar shape.

With encouragement from the Department of Environmental Quality, Department of Natural Resources, Homeland Security, engineers, and other public works etc., a small start-up company is beginning to produce the Shaggy Mane Wellhead Security Cover. This product is intended to offer improved security for public and private wellheads at a small fraction of the cost of big, heavy, difficult to install and difficult to handle units.

On the right is a diagram of the Shaggy Mane Wellhead Security Cover. A clamp attaches the base to the wellhead, the cover is lowered onto the base and secured by twisting, and then the cover is locked in place. The design is vented and allows the unit to fit over the typical PWS wellhead, even those with the large Monitor caps. They would appreciate your



thoughts on the Shaggy Mane Wellhead Security Cover. They can be sent to:

Mahlon Randall, President  
 M & K Consulting, Inc.  
 Mfg Rep: Shaggy Mane Wellhead Security Covers  
 Bigfork, MT  
 email: [m-k-consulting@hotmail.com](mailto:m-k-consulting@hotmail.com)  
 Phone (406) 837-3117 ■

PLEASE NOTE: *This information is provided in this publication as a service by DEQ and does not indicate active promotion or endorsement of this product by the state of Montana or DEQ.*

## Big Sky Clearwater Survey

**W**e have been publishing the Big Sky Clearwater now for over 15 years. Our goal has always been to provide you with information that is useful and interesting. To ensure that we are still doing our job we would appreciate it if you would take a few minutes to let us know how we're doing. We have a very short survey that you can take one of two ways: you can take the survey online at [www.surveymonkey.com/s.aspx?sm=YGunrAYFFRHQTZTrt0fhLw\\_3d\\_3d](http://www.surveymonkey.com/s.aspx?sm=YGunrAYFFRHQTZTrt0fhLw_3d_3d) or you can complete the pages below and mail them to us at the following address. Either way, we appreciate your input!

Bill Bahr  
 Montana Department of Environmental Quality  
 P. O. Box 200901  
 1520 East Sixth Ave.  
 Helena, MT 59620-0901 – or call Bill Bahr at (406) 444-5337.

- 
1. How often do you read the Big Sky Clearwater?
    - Each Issue
    - Some Issues
    - Few Issues
    - Don't Read
    - Do not receive the Big Sky Clearwater
  
  2. How much of the Big Sky Clearwater do you read?
    - All of it
    - Most of it
    - Less than half of it
    - A few articles
    - None of it
    - I don't receive the Big Sky Clearwater
  
  3. How useful do you find the information in the Big Sky Clearwater?
    - Very Useful
    - Somewhat Useful
    - Neutral
    - Not too Useful
    - Not Useful at all
  
  4. How satisfied are you with the quality of the writing?
    - Very Satisfied
    - Somewhat Satisfied
    - Neutral
    - Not Too Satisfied
    - Unsatisfied

cut along dotted line

*continued on page 38*

**SURVEY** – continued from page 38

5. How satisfied are you with the timeliness of the information?

- Very Satisfied
- Somewhat Satisfied
- Neutral
- Not Too Satisfied
- Unsatisfied

6. Which sections do you find useful or interesting?

- Reflections in the Ripples
- Operator Exams Passed
- Rule Updates
- Future Exam Dates and Information
- Compliance Assistance Articles
- Staff or Operator Profiles
- EPA Updates
- Other

7. Please choose your preference from the following options: *(you can choose more than one answer)*

- I like the Clearwater just the way it is
- I prefer a shorter Clearwater sent quarterly
- I would prefer to get the Clearwater electronically by email
- I would prefer to read the Clearwater on the DEQ website
- Other (please specify)

8. We are interested in hearing any comments you have about the Big Sky Clearwater.

9. The information below is optional, however we will need your email address if you would like to receive the Clearwater electronically. We don't share your contact information with anyone.

Name: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

Address 2: \_\_\_\_\_

City/Town: \_\_\_\_\_ State: \_\_\_\_\_ ZIP/Postal Code: \_\_\_\_\_

Email Address: \_\_\_\_\_

Thank you for taking the time to help us make the Big Sky Clearwater better for you! ■

## Equipment – Offered FOR SALE by the City of Helena

### ■ Spencer Power Miser blower. Skid mounted package unit. Includes:

- ◆ Baldor Super E 200 HP, 3 phase motor, frame size 445 TS, (3560 RPM)
- ◆ Model # C53634 (6) stage turbine blower, ICFM 4,564, oil bath bearings and vibration sensors. Unit has 21,234 operating hours.
- ◆ Electric modulating inlet valve and control panel enclosure.
- ◆ Asking \$ 17,500 OBO

### ■ Electrical switch gear for electrical generator

- ◆ General Electric AKD - 8 switch gear. 800 Amp.

### ■ Dissolved Oxygen Meters (several)

To purchase or for questions about the equipment, prices for switch gear and DO meters and other pertinent information, please contact Mark at 447-1593 X 103.

