

Big Sky CLEARWATER



Vol. XXXII, Issue 2

Fall 2002

Reflections in the Ripples By Bill Bahr

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Time flies when you're having fun and it will be ten years in September since Scott Anderson talked me into coming to work for the Water Quality Bureau. My how the time has flown and, more importantly, I have had the good fortune to work with and meet many talented operators, consulting engineers, managers and other professionals in this span. The dedication of local, state and federal employees to protect environmental resources in Montana is a constant source of inspiration. It would be impossible to calculate the overall value to public health that these water and wastewater professionals have brought to the state.

The **faces and names** are changing, but the concern for our waters and our people carries on. **John Campbell**, my good friend from the City of Polson, is retiring from his position as public works director. He always told me he wanted to work until the wastewater system serving Polson was upgraded. That being accomplished in the last couple of years, John is now looking to do more fishing, I guess. John has just finished his term as Chair of the Montana Section of the American Water Works Association (MSAWWA). In my eyes, an even more significant undertaking by John was the tremendous work he has done with the Water for People program. This program assists water systems in Honduras and other Central American countries to bring safe drinking water to their citizens and to recover from hurricane damage. Thanks, John.

Shirley Quick has retired as the Water and Wastewater Operator Certification officer for Montana. Shirley was a significant positive force, not only in our certification program in Montana, but also in guiding development of national standards for certification programs. My words add little to the long list of congratulations she has received from her peers and friends around the state, the nation and Canada. She has received many honors, among them, awards from the national Association of Boards of Certification (ABC), Montana Rural Water Systems (MRWS) and the sincere thanks from all of us here at the Department of Environmental Quality (DEQ). Thanks, Shirley.

Henry Hathaway, Public Works Director for the City of Belgrade, is ending over 27 years of work as an operator this summer. I have always enjoyed working with Henry. He worked hard to improve the operation of the water and wastewater facilities in Belgrade. He helped us conduct valuable on-site training programs at the city facilities in Belgrade. Thanks, Henry.

Mixed with the joy at seeing some friends seek new adventures in life, is sadness at the untimely passing of two fine gentlemen this past year. **Mike Certalic** served the City of Bozeman for many years in their water department. He was a friend, a consummate professional and was always ready to lend a helping hand when we would come to town to put on the annual Fall Water school or other training programs. He welcomed the classes at the distribution center and proudly showed the work he and his staff were performing in order to illustrate effective ways to conduct public works programs.

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Big Sky Clearwater

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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 (August 1 and March 1).

Please contact DEQ at 406-444-6697 or 406-444-4400 or write to:

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Editors:
Eric Minetti (Spring Issue)
Bill Bahr (Fall Issue)

Mike Hagel worked in many capacities, both for the cities of Forsyth and Choteau and as the DEQ representative in the Polson office. As we say back home on the ranch, Mike was a good hand. He served the citizens of Montana well, and we will miss him. To the families of Mike Certalic and Mike Hagel, I offer my deepest condolences.

Some new folks that I have the opportunity to work with are **Susan Stanley**, wastewater treatment plant (WWTP) manager for the City of Billings, and **Tom Adams**, wastewater superintendent for the City of Bozeman. Montana is lucky to have such talented professionals in charge of these important public works facilities. We have already had the good fortune to have both Susan and Tom make presentations to other operators at our training programs and they will both be a part of the Fall School program this fall in Bozeman. Additionally, earlier this summer, I attended the Bozeman city council meeting to present the Water Environment Federation Burke safety award to Tom and his staff for their outstanding efforts to make the Bozeman WWTP a safer place to work.

Notes for operators: The **new wastewater operator certification exams** supplied by ABC have been in use for a complete one-year cycle. This Fall School will be the beginning of the second year. We have worked through a few problems and, no doubt, most people have had to do more preparation than with the old exams. The new exams test knowledge in more areas such as, collections systems and electricity, than the previous tests did. Also, the current exams have 100 questions worth a single point each, so, in that sense, are more difficult, since the earlier versions only had about 70 questions to answer. Members of the advisory council for the certification program have indicated they support moving eventually to using ABC exams for the water and distribution exams. There are many good reasons for changing, not the least of which is that the exams will be fairer and based on 'needs-to-know' criteria.

An **improved lagoon study manual** will be available to operators preparing to take the test this fall. New sections have been added and some information has been updated to be sure that operators get a chance to study areas covered on the exams. Opera will use UV for disinfection of pathogens, replacing the chlorine system and eliminating it from the discharge. The **Big Sky Water & Sewer District** has gone through many changes as that community has struggled to deal with burgeoning growth over the past few years. The latest phase will include a sequencing batch reactor (SBR) activated sludge treatment plant and the Yellowstone Club will use the discharge for golf course irrigation. The **City of Belgrade** is upgrading a facultative lagoon system to an aerated lagoon system to deal with population growth. The upgrade will also expand the infiltration percolation (I/P) cells and add spray irrigation of the effluent to water the landscaped areas of the Belgrade regional airport. This was a win-win situation for both the city and the airport. The **City of Missoula** is building a BNR facility similar to the new Helena plant, but will also remove phosphorous to meet targets set in the Clark Fork River Voluntary Nutrient Removal Plan (VNRP). The new plant will also be converting a chlorination system to UV in this project.

The **Town of Nashua** is upgrading to a facultative lagoon system with three cells, which should improve treatment by providing the operator with more control options. The **City of Scobey** is upgrading their facultative lagoon system to eliminate leakage and will provide treated effluent for use on the community golf course. All in all, there are many new and improved systems in use or on the way, which bodes well for the future users of the waters of Montana.

An **improved lagoon study manual** will be available to operators preparing to take the test this fall. Operators preparing for the mechanical plant exams, 1C and 2C, should study the lagoon manual, too, since they will be tested on lagoon operations as well as both volumes of "Operation of Wastewater Treatment Plants" available from California State University, Sacramento. **Additional study sessions** are scheduled for the Fall School in Bozeman to review problems people are having with exam preparation. It is very important that people study these manuals well in advance of taking the exams. Much of the material covered can be complex and solving mathematical problems may require repetition. The good news is that the passing rate is consistent with those of the previous exams.

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Some closing thoughts: Ten years after. For the first time in nearly ten years I am not on or chairing the program committee for the joint annual conference of the Montana Water Environment Association (MWEA) and the Montana Section of the American Water Works Association (MSAWWA). It has been extremely rewarding for me to be involved with the technical programs for the conference. I have always felt that the program was the heart of the conference and all the talented people who served with me on the committee through the years shared that sentiment. I looked back after this year, and combining conference sessions with the emergency response planning sessions MWEA held in Missoula, Great Falls, Billings and Bozeman and the financial planning sessions MWEA co-sponsored with the finance agencies, we must have held over 300 sessions, with greater than that number of speakers. That is a tremendous accomplishment and I'd like to thank everyone involved. In particular, this past year, Amanda McInnis did a ton of work organizing and scheduling conference sessions. The committee is in good hands with Dave Aune and Karen Sanchez, so next year in Missoula ought to be great.

Deodorant? The **City of Polson** is using an **ozone odor control system** for the lift station located near the city park. According to the retiring John Campbell and his replacement, Tony Porrazzo, the system has eliminated the odor problem, which caused some problems during the summer when the park was in full use. It sounds similar to a system I saw in use in Glacier National Park a couple of years ago at the St. Mary's campground pumping station. **Bad, bad birds.** The operators at the **Anaconda lagoon system** wanted to prevent birds from leaving their calling cards on the aeration system header pipes. They strung wires along the tops of the pipes and the birds apparently don't like to roost there anymore, eliminating a messy clean up problem. **Logging project.** The **Opheim** lagoon system had a large tree in the corner of the evaporation cell. The operator, John Marvin, removed the tree to fix the cell, and shot before and after pictures (below) illustrating not only the fact that the tree is gone, but what a difference he made in the landscape. Way to go, John! That had to be a tough job. **Recreational area?** This diagram (below) from a 70's vintage facility plan shows proposed improvements to an **unnamed lagoon system**. Please note that the second cell is to be 'retained for recreation.' Ideas on what sorts of recreation would be most suitable for this system can be submitted to the editors.

Water Conservation Pilot Project at DEQ

The Montana Department of Environmental Quality is spearheading a water conservation project that uses flushless urinals in men's public restrooms. This new technology will help relieve costs associated with water usage and maintenance of flush-type urinals for the State.

Flushless urinals are gaining acceptance with federal government agencies, the U.S. Postal Service, U.S. military services, ski resorts, federal parks services, schools and other entities. In a collaborative effort, DEQ's Planning Division programs in the Technical and Financial Assistance Bureau including the programs Montana Rebuild, Water Pollution Control State Revolving Fund and Energy Efficiency are working with the Montana General Services Division Facilities Management Bureau of the Department of Administration to establish baseline usage in a single location in the Metcalf Building at the State Capital complex in Helena, MT.

Preliminary analysis by DEQ indicated at current usage rates, the model should be paid for in water, energy and maintenance savings in the range of 2.5 to 4.5 years. Assuming the flushless urinal works as well as promoted by product literature and other reports, saving an average of 42,178 gallons per urinal annually, replacing each urinal on the state complex could save substantial costs in water and energy. To put the potential water savings in perspective for the Capitol complex in Helena, assuming one urinal per building, the proposed annual water savings would be equal to the annual water consumption for 12 homes.

Following monitoring to establish a usage baseline, a flushless urinal will be purchased and installed during the fall of 2002. Monitoring will continue for a period of approximately one year to determine durability under routine maintenance, water savings, related energy savings and other aspects. Survey information from staff and contracted maintenance services will be included in the analysis.

The flushless urinal model selected costs about \$600, including a year's worth of supplies. The Facilities Management Bureau will provide the staff to remove the current flushing model and install the flushless model. DEQ's Montana Rebuild program will provide the funds for the project. Toby Benson, Dave Bausch and Bill Bahr will coordinate monitoring, maintenance and acceptability of the urinal in combination with Clay White and Bill Covey of the Facilities Management Bureau.

For more information, contact Dave Bausch, P.E., Ph (406) 444-6812.

New Sanitation in Subdivision Regulations

This is a notice to inform the public that new Sanitation in Subdivision regulations became effective on May 17, 2002. For information regarding these regulations, you should contact the Water Protection Bureau, Subdivision Review Section, at (406)444-3080 or obtain a copy via the DEQ website at <http://www.deq.state.mt.us/wqinfo/Sub/Index.asp>

The Subdivision Review Section has also opened a Missoula field office at 2681 Palmer St, Suite I, Missoula MT 59808, phone (406) 329-1482.

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How Does DEQ Use the Public Water Supply Service Connection Fees?

by **Jim Melstad**

As you probably know, public water suppliers pay an annual service connection fee to DEQ. *On behalf of the Public Water Supply Section and DEQ, I would like to thank you for payment of these fees every year.* These fees allow DEQ to administer the Safe Drinking Water Act (SDWA) in Montana on behalf of EPA. Without this support, there would be no state program to help you comply with complex federal regulations.

We receive about \$540,000 in service connection fees each year. An additional \$40,000 in plan review fees is received annually. We try to use as much of these fees as possible for direct assistance to public water suppliers. Approximately \$240,000 is used to match the EPA grant that we receive each year to administer the SDWA. Most of the balance is used for contracted activities as shown below. The summary shows how the fees were budgeted in state fiscal year 2002 (July 1, 2001 through June 30, 2002).

If you should need any assistance, please do not hesitate to contact us. We will try our best to provide assistance directly or through one of our contractors.

- **Contracts**

Contracted plan review by local governments of proposed water & sewer improvements	\$ 3,750
Contracted water supply training position at Montana Environmental Training Center	44,300
Contracted assistance for rural water system development	3,500
Contracted assistance for groundwater investigations	24,100
Database development	50,000
Contracted compliance inspections of public water supplies	102,000
Development of standard construction specifications for small public water systems	10,000
Contracted compliance assistance for public water systems	65,000
Temporary office support services	<u>38,000</u>
TOTAL contracts	\$ 340,650
• Match funding for EPA grant to state (25% requirement)	\$ 239,300
• Misc. expenses (minor equipment, office supplies etc.)	\$ <u>6,000</u>
TOTAL annual fee expenses (state fiscal year 2002)	\$ 585,950

CEC Naggings

CONGRATULATIONS to all operators who got re-certified by getting their CEC's (continuing education credits) and renewals fees in by June 30, 2002.

Now its time to start over again and why not earn your credits early so you don't have to rush at the end. There are lots of fun and exciting ways to get your credits. These include attending any approved courses (the METC 2002 calendar lists courses from the current training providers, so check out the ones from July through December). You can complete an approved correspondence course (these are also listed in the METC calendar), or find your own class and apply to have it approved for credit. There are also some new ways to earn credits: Internet and CD-Rom courses. Remember that operators-in-training are not required to earn CEC's.

If there are any problems on your CEC status or you need information on any of the training options, simply contact Ashley Finnegan, Water/Wastewater Operator Certification Office clerk at (406) 444-4584. Hope to see your credit forms across my desk soon!

Operator Expenses Reimbursement Grant Approved

The DEQ Water and Wastewater Operator Certification program is happy to announce that on March 1, 2002 we received written notification from the USEPA that our application for the \$1.6 million Operator Expense Reimbursement Grant has been approved. Our workplan for this grant funding is to actually reimburse the training, examination, and renewal expenses for operators of community and nontransient, noncommunity water systems serving 3,300 or fewer people.

The reimbursed expenses may include: training costs, training travel & per diem costs, exam & application fees and renewal fees. We have also received permission from the USEPA to contract with a trainer to: supply free personalized pre-exam training; teach pre-exam basic track training as requested; and/or work with PWS field services program to develop standardized basic track training materials

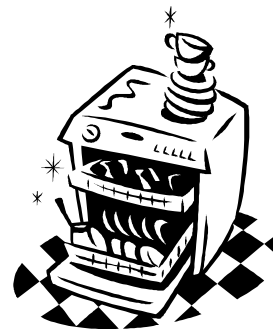
Even more good news! On April 22, 2002, **Ruby Miller** started work as the Operator Certification Program Accountant. Ruby's main responsibility will be to setup and administer the Operator Expense Reimbursement Grant process. Ruby was previously employed in the DEQ Public Water Supply Section and the DEQ Remediation Division. We are happy to welcome Ruby to the operator certification program and we are sure that you will enjoy working with her as much as we do.

So, what happens next? Ruby is in the process of developing application forms and instructions, setting up the reimbursement tracking system, and working with the DEQ fiscal staff to develop the reimbursement system. Watch your mail for more detailed information from Ruby on how to apply for this reimbursement funding within the next few months. We hope to make the reimbursements retroactive to July 1, 2002 so start saving your receipts from training fees and travel costs starting this July.

Any questions? Contact Ruby Miller at 406-444-2954.

Dishwasher Detergent Contributes to Phosphorus Load

Detergents used in automatic dishwashers have a high phosphorus content, and are a major source of phosphorus for municipal wastewater treatment plants, including those in small towns, according to a study by the Tri-State Water Quality Council, a collaborative group working on nutrient and algae issues in the Clark Fork-Pend Oreille basin of Montana, Idaho, and Washington. A pilot study done for the council in Lolo, Montana, in 2001 reported that 15-17% of the total phosphorus load to that plant originated in automatic dishwasher detergents. The council believes that this situation may be typical of small and large municipality wastewater plants in Montana and surrounding states.



All Montana municipalities with wastewater treatment facilities will need to grow more familiar with nutrient issues soon, because the State Department of Environmental Quality, acting on a nationwide EPA mandate, is now in the process of developing numeric nutrient and algae standards for Montana's rivers and streams. Numeric standards will make nutrient management a more high profile issue, and municipalities and sewer districts will need to respond.

Will McDowell of the Tri-State Water Quality Council's Voluntary Nutrient Reduction Program, says, "We did this study to look for economical options for smaller communities and sewer districts to reduce phosphorus discharge to streams and rivers in western Montana, Idaho, and Washington. We believe that source reduction through education of consumers and wastewater management personnel is an important tool in controlling nutrient problems in our surface waters. Biological nutrient removal may be a good treatment option for larger systems, but it may be too expensive for many smaller communities."

In the 1980's it was recognized that a large proportion of phosphorus loads arriving at municipal wastewater treatment plants originated from laundry detergent phosphates and various local campaigns gradually banned phosphate in laundry detergents. The results were dramatic; for example, Missoula's wastewater treatment plant noticed more than a 30% decline in inflow phosphorus content within one year of the local ban in 1989. But dishwasher detergents were not covered by the original bans, perhaps because low phosphorus alternatives were not available at that time.

Bans applying to laundry detergent phosphorus generally do not apply to automatic dishwasher detergents so many of the common brands have up to eight percent (8%) phosphorus, or about the content of Miracle-Gro fertilizer. The Council and University of Montana surveyed detergents at grocery stores, then conducted a telephone survey of Lolo residents to determine the number who use automatic dishwashers and the frequency of use. From this data they estimated that the average household in Lolo (70% have automatic dishwashers) produced 11 grams/day of phosphorus from automatic dishwasher detergent alone. This translates into over 15% of the 11.5 lbs/day of phosphorus estimated in Lolo's plant inflow, a 200,000 gallon per day facility.

The study's shelf surveys in Missoula, Montana determined that a number of low-phosphorus and zero-phosphorus dishwasher detergents are now available. Most are manufactured by smaller, specialty firms like Bio-Kleen, Earth Friendly Products, Ecover, and Seventh Generation, but Proctor & Gamble produces an economical gel product with only 1.6% phosphorus.

For more information or a look at the entire study, see the Tri-State Water Quality Council's website; www.tristatecouncil.org or call Will McDowell, 406-327-8443.

MSAWWA Emerging Treatment Technologies Teleconference Scheduled for November

MSAWWA is hosting a 3-½ hour teleconference that will cover emerging treatment technologies from the operations perspective. A panel of experts will provide a detailed overview of UV, Ozone, Membrane, and other emerging technologies. Areas of discussion will include: how to determine which treatment technology is the right one for your system; how the various technologies compare; cost, operability and environmental considerations; administrative difficulties; and what treatment is most effective with certain pathogens. As always, the program will include panel discussions, question and answer sessions and a video case study presentation.

- Intro: 100 years of Water Treatment
- Overview: Where We are Today and Emerging Issues and Challenges
- Toolbox Approach
- UV
- Ozone
- Membranes
- Other: Activated Alumina, Ion Exchange
- Decision Science: Introduce structure for choosing a treatment technique
- Implementation Challenges: what to select, how they compare, cost, operability, administrative difficulty, environmental considerations, what treatment to use with what pathogen
- Case study: How to use new technologies with a conventional system.

Contact: Carolyn Chaussee, TYGR Management, 505 S. Roberts, Helena 59601, or call at: 406-443-5388, for information on registration, time and location.

Goodbye from Shirley Quick

As you may already know, June 14, 2002 was my last day as the Water and Wastewater Operator Certification program manager. I started working in 1984 for what was then called the Department of Health and Environmental Sciences in the Air Quality Bureau. In November 1993 I started working for the Water Quality Bureau as the certification officer. Shortly thereafter we were reorganized into the Department of Environmental Quality with the certification program being part of the newly formed Community Services Bureau.

I have had the pleasure of meeting and working with many wonderful people during the almost nine years that I have been the certification officer. These include all of Montana's water and wastewater operators, system owners and supervisors, training providers, and members of Montana Rural Water Systems, Midwest Assistance Program, Montana Association of Water and Sewer Systems, Montana Section of American Water Works Association, Montana Water Environment Association, Montana Water Resource Center, and Montana Environmental Training Center.

The members of the Water and Wastewater Operators' Advisory Council (Council) provided excellent help and advice in every aspect of my job. Over the years I had the great pleasure of working with the following Council members: Mike Holzwarth, Curt Myran, Warren Jones, Dan Fraser, Scott Anderson, Bob Cottom, Steve Ruhd, Lee Leivo, Carol Reifschneider, Joni Emrick, Roger Thomas, and Jim Melstad. The operators in the state of Montana are lucky to have such dedicated people giving advice to the state on certification issues.

The Continuing Education Credit Review Committee (CECRC) was organized to give the certification office guidance on continuing education and training approval issues. The CECRC members that I worked with were: Barb Coffman, Rory Schmidt, Curt Myran, Judy Sass, Lee Wolfe, Gary Workman, Carol Reifschneider, Michelle Jackman, and Shelly Nolan.

As I start a new phase of my life, I am leaving the certification program in good hands since Reta Therriault, Ashley Finnegan, and Ruby Miller will still be here to give you the excellent service you have learned to expect from them over the years. You will also be hearing soon about the person that the DEQ has chosen to take over the certification program managerial responsibilities. Thanks to everyone who has supported the goal of the certification office over the years: to protect the public health and safety by certifying persons working in the water and wastewater treatment fields. Keep up the good work and I hope to run into you all again soon.

Hamilton Wastewater Treatment Plant Wins Recognition

Reprinted with the permission of Jenny Johnson of the Ravalli Republic. This article was originally published on August 6, 2002

It's a dirty job, but somebody's got to do it. It's usually a thankless job, too. But recent awards won by the city of Hamilton's wastewater treatment plant showered the facility with kudos.

Hamilton's wastewater treatment facility was judged as the No. 1 facility of its size in not only a six-state region but in a national competition. Hamilton Public Works Director Lorin Lowry was notified last week that Hamilton won top honors from the Region 8 Environmental Protection Agency and his application was forwarded to the national EPA office. Lowry said he almost fell out of his chair Monday morning when federal officials called to congratulate him on winning the national competition.

Hamilton won the Clean Water Act Recognition Awards for outstanding and innovative achievements through operations and maintenance. Basically, the facility maintains an efficient and progressive wastewater treatment facility and was judged best in its class at doing so, according to Anthony DeLoach of the EPA's Region 8 office in Denver. "Hamilton runs a top-notch facility," he said.

That's exactly what plant operations chief Brad Parke strives for. "We've got a top-notch crew," he said. "We have an older facility, but we keep it up well and make sure we're doing the best job we can." Hamilton's success at reducing energy costs, maximizing improvements made to the plant in 1998, implementation of a corrosion control program and other innovative practices stood out in Hamilton's application, DeLoach said. The application showed that Hamilton went above and beyond what federal regulations required and consistently improved the system, which treated about 1 million gallons per day last month.

Recognizing Hamilton's consistent success in operating the treatment facility, officials at the Montana Department of Environmental Quality suggested that Lowry apply for the regional award. First and foremost, the plant had to comply with environmental and operating standards, a condition not consistently met by many facilities, DeLoach said. Then the facility was judged on 18 criteria and ranked in order.

Hamilton came out on top and was entered into the more competitive national arena. Awards for winning the national Clean Water Act Recognition Awards will be presented in Chicago Sept. 30. Regional officials are expected to make it to Hamilton to award the city with the Region 8 award.

The city was judged on a number of items, including budgeting, capital improvements and hard data such as contaminant levels. Hamilton was slated against other public wastewater systems of similar size and type. Hamilton's facility uses the natural lagoon system and mechanical sludge process in the treatment of influent water. Bigger systems use faster processes with mechanical systems. Hamilton's plant is considered intermediate.

DeLoach said region officials were especially impressed with the fact that Hamilton's sewer rates cover the costs of running the plant. Hamilton also impressed judges with the unrequired practice of removing nutrients such as nitrates from the water.

"This is an affirmation of all the work we've been doing there," Lowry said. "These guys truly do a wonderful job. This town has done a good job of supporting the wastewater facility." Three men run the waste water plant, a job Lowry says is the most interesting in the public works department. Invisible processes take place at every level of the operation - from the aeration ditch and clarifying tanks where solids are separated to the water treatment maze and sludge drying beds. Tests are performed daily to monitor the chemical balances of the water, making sure that organisms are doing their jobs in decomposing waste water material.

Last month, 37 million gallons of water came into the plant, and 28.4 million gallons of water was discharged back into the Bitterroot River after treatment.

Water and Wastewater System Security

By Jim Melstad

Public Water Systems: House Resolution (HR) 3448 was signed into law by President Bush earlier this year. The bill requires all community water systems serving more than 3,300 persons to conduct a Vulnerability Assessment (VA) and outlines the minimum elements to be considered within the assessment. These systems must then certify to EPA that they have conducted the assessments and submit a written copy of the assessment to EPA between March 31, 2003 and June 30, 2004, based on population served.

The Agency will have developed protocols by November 30, 2002 to protect the confidentiality of the assessments. The bill appears to extend Freedom of Information Act (FOIA) protection over the release of the assessment information, but Congress will likely provide more clarification and protection soon. The bill provides for criminal penalties (jail and fines) for improper acquisition or sharing of the assessments.

Each community water system serving more than 3,300 individuals will be required to prepare or revise an emergency response plan that contains certain designated elements. Systems must submit their plans to EPA according to the following schedule:

- (a) March 31, 2003, in the case of systems serving a population of 100,000 or more
- (b) December 31, 2003, in the case of systems serving a population of 50,000 or more but less than 100,000.
- (c) June 30, 2004, in the case of systems serving a population greater than 3,300 but less than 50,000.

Systems must certify that they have developed or updated their plans not later than six months after completing their vulnerability assessments. Large systems serving more than 100,000 people have already applied for grant funding under separate legislation to prepare their vulnerability assessments. Systems serving less than 3,300 persons will receive guidance on how to conduct assessments and prepare emergency response plans.

The bill authorizes \$160 million for FY-02 and "such sums as may be necessary" through FY-05. It is not clear yet how these funds will be appropriated and used. Congress recently appropriated \$50 million of these funds for small and medium systems. EPA will administer these funds, but it is not yet clear how the funds will be directed to provide assistance to water suppliers.

The DEQ has applied for an EPA grant to provide training and technical assistance for security planning. The DEQ plans to provide training in early 2003 to small and medium water systems to assist them in preparing their vulnerability assessments and emergency response plans.

(Continued on page 13)

(Continued from page 12)

Wastewater Systems. The House Transportation and Infrastructure Committee is expected to mark up H. R. 5169, the Wastewater Treatment Works Security Act of 2002. The bill requires wastewater utilities to conduct vulnerability assessments and authorizes 75 percent grant funding (up to \$150,000 per utility) for assessments and security upgrades. As introduced, the bill does not require utilities to submit their VAs to anyone.

Chemical Security (incl. chlorine gas). Leaders of the Senate Committee on Environment and Public Works are working with Senator Corzine (D-NJ) to revise S. 1602, the Chemical Security Act of 2002, and attach it to the Homeland Security bill. *This bill takes direct aim at facilities that use gaseous chlorine and other chemicals in locations where release could cause severe harm.* In its present form, the bill creates new vulnerability assessment and planning requirements for “high priority” categories of chemical-using facilities designated by EPA. Such facilities would be required to conduct vulnerability assessments and develop emergency response plans. These plans “shall include” to the extent practicable actions and procedures such as inherently safer technology, secondary containment, security measures, and buffer zones between chemicals and surrounding populations. These vulnerability assessments and emergency response plans would be submitted to EPA and must be revised and re-submitted every three years. The assessments and plans would be exempt from FOIA, but the other safeguards in the bioterrorism bill (like criminal penalties for unauthorized disclosure) are omitted.

If you should have any questions, please do not hesitate to contact me at 444-5315 or jmelstad@state.mt.us.

Operator Reimbursement For Public Water Systems



The Water and Wastewater Operator Certification Program of the Department of Environmental Quality is initiating a new reimbursement program. The program is funded by an EPA grant and will reimburse Operators of **Public Water Systems**, which meet the following criteria. Operators must work for a Community or Non-Transient Non-Community Public Water System that serves 3,300 people or less. They must be able to show verification that they are a Certified, Grand Fathered or

Temporary Operator of that system.

This program is retroactive to July 1, 2002 and will pay expenses incurred after that date. Renewal fees for 2002 will not be reimbursed but future renewal fees will be. Please save your receipts since the expenses will have to be paid for and then reimbursed. The program will reimburse 1 application fee, 1 exam fee and pre-exam training for one applicant per system per state fiscal year. The cost of required and approved continuing education credits and annual water certification renewal fees for 3 or fewer operators per system per CEC biennium will also be paid. Some travel expenses related to the application, exams and CEC's will receive reimbursement. Per Diem costs may also be paid at the state rates for **Unsalariated Operators** only. Unsalariated Operators do not receive salary or wages for services as a Certified Operator. Owner/Operators are considered to be salaried.

If you would like information about this program you may contact Ruby Miller from the Operator Certification Program of the DEQ at (406) 444-0490. Additional information will be available at the Fall Water School September 23rd through 26th. The Department is planning to have the necessary forms available at this time.

New Water Sampling Rules

This article is to inform you of some important regulatory requirements that will affect your system this year. These requirements originate from two closely related national drinking water regulations known as the Long Term One Surface Water Treatment Rule (LT1) and the Stage One Disinfectants and Disinfection Byproducts Rule (Stage 1 DBP Rule).

LT1 Requirements

This rule requires all community and non-transient non-community public water systems that use surface water or ground water under the direct influence of surface water and serve 500-9999 customers to begin compiling a disinfection profile by July 1, 2003. This same requirement applies to systems serving less than 500 customers as of July 1, 2004. A disinfection profile is a graphical representation of Giardia inactivation through your treatment process over a one-year time span. The rule allows the state to excuse your system from the disinfection profiling requirement if data is available to demonstrate that disinfection byproduct levels in your water system are less than 80% of the MCLs established in the Stage 1 DBP rule.

To demonstrate this, you must take a sample for total trihalomethanes and haloacetic acids this summer during the period of warmest water temperatures and at a point representing the longest residence time in the distribution system. These samples will cost about \$290 for both analyses. Should you decide not to take these samples, or if you take the samples and the results indicate levels in excess of 80% of the MCL, you will be provided with further instructions on how to develop a disinfection profile by CSB/PWS staff. You can contact them at 406-444-4400.

Stage 1 DBP Rule Requirements

Routine monitoring and other requirements of this rule do not affect your system until 2004. However, conventional filtration systems should begin monitoring for total organic carbon (TOC) in raw and finished water as soon as possible. This will allow you to determine if your system will be subject to the treatment technique requirements established in this rule. A conventional treatment plant is one that can treat water by the addition of coagulant chemicals, flash mixing, coagulation-flocculation, and sedimentation, followed by filtration. TOC sampling must be conducted once each month for at least a year, as follows:

1. Take raw water TOC sample at a location prior to any treatment. Take an alkalinity sample at the same location and time.
2. Proceed to the end of the treatment train and take a TOC sample of finished water.

DEQ strongly recommends that you conduct this monitoring, even though it is not required at this time. Early monitoring allows you to plan for meeting the requirements of the DBP rule and could prevent your system from falling into non-compliance after mandatory monitoring begins in 2004.

Filter Backwash Recycling Rule

The FBRR requires that recycled filter backwash water, sludge thickener supernatant, and liquids from dewatering processes must be returned to a location such that all processes of a system's conventional or direct filtration including coagulation, flocculation, sedimentation (conventional filtration only) and filtration, are employed. Systems may apply to CSB/PWS for approval to recycle at an alternate location.

(Continued from page 14)

The FBRR also requires that systems notify the DEQ in writing that they practice recycle. When notifying the DEQ, systems must also provide the following information:

- A plant schematic showing the origin of all recycle flows, the hydraulic conveyance used to transport them, and the location where they are recycled back into the plant; and
- Typical recycle flow in gpm, highest observed plant flow experienced in the previous year in gpm, design flow for the treatment plant in gpm, and the DEQ-approved operating capacity for the plant where the department has made such determinations.

Finally, systems must collect and maintain the following information for review by the DEQ, which may, after evaluating the information, require a system to modify their recycle location or recycle practices:

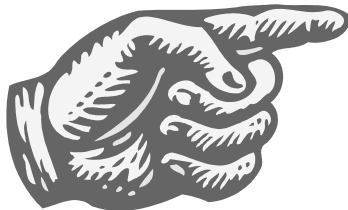
Copy of the recycle notification and information submitted to the DEQ;

- a list of all recycle flows and the frequency with which they are returned;
- the average and maximum backwash flow rate through the filters and the average and maximum duration of the filter backwash process in minutes;
- the typical filter run length and a written summary of how filter run length is determined (headloss, turbidity, time etc.);
- the type of treatment provided for the recycle flow; and
- data on the physical dimensions of the equalization and/or treatment units, typical and maximum hydraulic loading rates, type of treatment chemicals used and average dose and frequency of use, and frequency at which solids are removed where such units are used.

Systems must submit a recycle notification to the DEQ by December 8, 2003. By June 8, 2004 the return recycle flows through the processes of a system's existing conventional or direct filtration system or an alternate recycle location must be approved by the state (a 2-year extension is available for systems making capital improvements to modify recycle location).

If you have any questions regarding the upcoming D/DBP, LT1ESWTR, or the FBRR please contact Rick Cottingham (444-4019) or John Camden (444-4071). Fact sheets are available upon request.

2002 National Rural Water Association Conference to be held in Spokane October 6-9



The NWRA "Spirit of Rural America" conference will be right next door in Spokane, Washington this fall. This is a great opportunity to attend an outstanding national conference and not to have to travel very far to do it.

The conference will be held at the Spokane Convention Center. Contact the NRWA at: PO Box 1847, Duncan, OK 73534, or call (800)332-8715 to get registration information.

MWEA Sends a Student Representative to the 2002 Stockholm Junior Water Prize Competition

The Stockholm Junior Water Prize (SJWP) is the most prestigious international youth award for a water science research project, administered by the Stockholm International Water Institute. It's purpose is to increase student interest in water related issues and research, and to sensitize them – as future leaders – to global water challenges. The United States competition was cosponsored and facilitated by the Water Environment Federation and its member associations. The competition was held at the Annual WEF Conference in Dallas. For the last two years, MWEA has actively participated in this competition by integrating the SJWP with the state regional science fairs. The MWEA Board and members volunteered their time to judge the projects and select a state representative. This year was particularly rewarding for the winning student because MWEA sponsored and paid the travel expenses for the student and chaperon to compete in the national competition. The lodging and food expenses were covered by ITT Industries and the Texas Member Association.

The Montana SJWP winner for 2002 was Zachary Benson who graduated this year from Colstrip High School. He is currently working for the City of Billings P.U.D. in the Environmental Affairs Division as an intern assisting staff in conducting a water quality survey of the distribution system. Zachary has been very active and successful in both academics and personal interests. He has received several awards for his participation in science fairs and was chosen for the National Honor Society. His passion is for the biology and chemistry fields. Zachary chose to focus on both the water quality and biological impacts of coalbed methane development on the Tongue River ecological system for his science project. His project included 1-1/2 years of collecting, testing and logging data to provide baseline conditions on the Tongue River. This project will be continued by Mr. Bernard Smith, Zachary's science teacher at C.H.S., and other students.

Zachary wrote the following section recapping his experience at the U.S. National SJWP competition.

The Stockholm Junior Water Prize competition was a wonderful event to end my high school research career. Unlike most of the science fairs and symposiums that I have attended, the Stockholm competition truly focused more on the "science" of it all – with the main bulk of the scoring focusing on your research paper. The competition's small group of competitors gave me the opportunity to read through their projects and also, to get to know my fellow competitors better. That was probably the best part of the competition – making new friends. The host committee was wonderful – we were met at the airport and driven directly to the motel. The committee members were warm, friendly, and very willing to help out whenever needed. They also went through a lot to make sure that the activities were great – which they succeeded at admirably.

The first night after setup we were taken to the Dallas Aquarium & Rainforest. We wandered through the rainforest – filled with free-roaming birds and monkeys as well as crocodiles and manatees – until we found our way to the banquet hall. The speakers that night were informative and very funny – the head of WEAT, a representative from the EPA, and the chair of the host committee.

The second day was competition. The judges were very direct and thorough – having had the time to read through your paper and look through your board – an opportunity not given to many science fair judges. After our judging was over I had time to go and visit with my fellow competitors. After competition, we were given a taste of Texas Hospitality at the Circle R Dude Ranch. We met some Texas Wranglers and were serenaded throughout the evening by cowpokes. Best of all though was the feast of Texas beef! Later in the evening came the horse-rides and the line dancing – a fun Texas evening.

The last day of the competition was just as great. The award luncheon was great and everyone had a good time cheering on new friends who had won awards. After the delicious lunch, we were whisked off to Six Flags Over Texas! After spending several hours in the park we came back to the motel. There I was able to talk with several members of WEF and several international members who had come for their first on-site competition. Later that night I spent a couple hours on the roof of the motel, amazed at the size of the Dallas-Fort Worth area and enjoying the swimming pool.

After all this I can say that the Stockholm competition was one of the most thoughtful, thorough, science-orientated fair that I have attended - I was proud to represent Montana.

Wastewater Treatment Down Under...A report from the land of the clockwise spinning water.

by Karen Sanchez, MWEA National Director

Like all Clearwater readers, I keep my eyes open for water and wastewater facilities when I am on the road. And like all of our spouses, my husband Ron is always thrilled by the adventure this provides. I think.

In May, Ron and I were on our dream vacation in Australia. While there, I got in touch with Don MacKay, Principal Teacher of Water and Wastewater Treatment at the Open Learning Institute in Brisbane, Queensland. I had met Don at WEFTEC 2000 in New Orleans. Don flew from New Orleans to Montana to work with Kevin Kundert at the Water Center here in Bozeman. Don generously offered to take my husband Ron and I on tours of Queensland's beautiful beaches and rainforests. I could not resist and asked if we could visit an Australian wastewater treatment plant too. So, on our way to the beach, amongst the pineapple and sugar cane fields, we stopped off at the Maroochy Water Services Nambour Sewage Treatment Plant.

My first surprise was the level of security. We drove up to the gated security fence and were greeted by a camera and intercom. Once inside, the operator Peter Woods, was a bit confused why we were interested in touring a wastewater plant on our "holiday", but generously agreed to give us a tour. The facility is a nutrient removal plant that uses the Bardenpho process with aerobic digestion and has DAF and a belt filter press for biosolids processing and disinfects effluent with UV prior to discharge. The reason the security is so tight there is that they have had problems with trespassing and vandalism. Water reuse is being proposed there in Maroochy, and the presence of endocrine disrupters in water is a hot button issue that has generated public discussion and even fear.

Queensland is semi-tropical, and heat is the biggest operational issue. The main problem is odors. Besides heat, anaerobic conditions and long detention times add to the problem. Septage is transported to the plant daily from the many holding tanks in the area. The service area is quite large. And most of the sewers are small diameter and pressurized, adding to the odor situation. Oxygen injection is the main odor control scenario; they have found it works better than chemical addition.

As we walked past the bar screen facility, I noticed that there was a vine with what looked like little green mangos growing on the fence. I asked and was told that was passion fruit! Yum!

Onward to the aeration basin. Nutrient removal is also affected by heat: apparently nitrogen and phosphorous removal are not difficult there. But carbon has to be added at the head of the nutrient removal basins. In Queensland they use sugar cane. The rest of the facility and its operations seemed similar to ours.

Discharge permit limits in Australia are comparable to the US EPA 30/30 but are based on the receiving water. Non-point discharge and TMDL's are the big issue there now. Also, the Maroochy sewage treatment plant used to discharge to the small ephemeral stream adjacent to the facility, recently had to install a multiple kilometer pipeline to discharge to a larger receiving body of water. Sound familiar?

We thanked Peter and sped on out (in a Holden – an Australian car) to enjoy the clean surf and the white sand beaches of the Sunshine Coast, warmed by the camaraderie that sewage provides. G'day mate!

Operator Certification Proposed Rule Changes

Several things have occurred in the last year that have caused us to review the water and wastewater operator certification Administrative Rules of Montana, 17.40.201-17.40.215. The following changes have been **proposed** and the DEQ will be going through the formal rule change process within the next few months. The Department is currently considering comments that have been made.

The reasons for changing the rules are new wastewater exams, EPA program approval requirements, legislative fiscal audit exceptions, legislative law changes and legal language updates.

Updating definitions, ARM 17.40.201:

Since the technology of wastewater systems have changed, our definitions also need to change. Therefore, we are proposing to delete the definition of “Primary waste water treatment,” to modify the definition of “Secondary waste water treatment”, and to add the definition of “Advanced tertiary waste water treatment”.

Changing system classifications, ARM 17.40.202(1)(c):

We are proposing to modify the classifications of class 1C and class 2C wastewater systems to show the changes in wastewater treatment technology that are reflected in the newly updated wastewater operator certification examinations.

No longer employed after 2 years, ARM 17.40.203(3):

We are proposing to add that only fully certified operators lose certification if not employed after 2 years and that they must also be employed in Montana to keep certification

Higher certification due to rule change, ARM 17.40.203(6):

We are proposing to add that if a more complex certification is required to operate a system only because a state rule changes, an operator would not need to take another exam to receive, if the operator requests it in writing, and the operator has necessary education and experience

Reciprocity for certifications in other states, ARM 17.40.203(8):

For water, the state must have EPA approved operator certification program. For wastewater, the state must have exam equivalent to Montana’s. For both the state must have certificate classification equivalent to Montana, the certificate must be from state where operator took the exam and the operator must hold current full certification in other state.

Duplicate license request, ARM 17.40.206(9):

We are proposing to allow only the person who holds the certificate will be allowed to request and receive a duplicate license after paying the \$10 fee

Class 5AB experience, ARM 17.40.207(2)(e):

We are proposing to change the Class 5AB experience requirement from none to 3 months’ experience in order to meets EPA experience requirement and it’s easier on operators than requiring that they attend specific training.

Renewal fee deadlines, ARM 17.40.212(4):

We are proposing that operators must have their renewal fees to the certification program office by the first working day after June 30 every year. The fees must be received in the mail by June 30 and if not, the certificate will be suspended

Renewal Continuing Education Credit (CEC) deadlines, ARM 17.40.213(1) and ARM 17.40.215(3):

We are proposing that all CEC credit reports must be to the certification program office by June 15 every even-numbered year

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CECs from courses held after June 15 of even numbered years will be credited to the next CEC period

Government employee CEC waivers, ARM 17.40.213(10):

We are proposing to change the CEC requirements for an operator who is a government employee assigned to duty outside the United States so that CECs will be waived for one CEC two-year period

Military duty inactivated certificates, ARM 17.40.213(11):

We are proposing to allow certificates to be inactivated for operators who are on active military duty and make a written request to the department. To reactivate certificate, operator must make written request to department, and pay that year's renewal fee. After the certificate is reactivated, operator must meet CEC requirement for current CEC period by the CEC deadline for that year or within 18 months, whichever is longer. This change is to meet EPA requirement.

Disciplinary action, 17.40.214:

As a result of a 2001 legislative change we are proposing to require the Department to issue an order to revoke an operator's certificate or take disciplinary action against an operator. The operator may then appeal to Board of Environmental Review

For more information, call Reta Therriault at (406) 444-3434.

Call For Papers For MWEA and MSAWWA 2003 Joint Annual Conference

Please submit abstracts, ideas (with speakers), or other topic proposals for the technical program for the conference scheduled for April 30 (Pre-conference seminar) and May 1st and 2nd, 2003 at the Holiday Inn in Missoula, MT. Comments from last year's program indicate that the program committee would like more sessions related to operator training. Engineers, government officials, treatment plant staff and other professionals are encouraged to send proposals to: Carolyn Chaussee, TYGR Management, 505 South Roberts, Helena, MT 59601. Call 406-443-5388 or e-mail to tygrmgmt@onewest.net to get more information about participating in this outstanding technical program.

12th Annual Advanced Wastewater Training at Yellow Bay Research Facility

This year The Montana Environmental Training Center (METC) will be featuring Dr. Bill Oldham of the University of British Columbia in Vancouver, BC. Dr. Oldham was the first speaker at this renowned summer training program 12 years ago. We are pleased to have him back, since he is one of the most respected authorities in the field of biological nutrient removal (BNR) processes.

This year Dr. Oldham will focus on emerging trends in BNR in advanced treatment facilities and will share some information on optimizing operations at these complex plants. Please contact Jan Boyle at METC's offices at 406-771-4433 to get registered for this advanced wastewater treatment seminar.

Mike Certalic Remembered

This article is reprinted with the permission Erin Everett of the Bozeman Chronicle. It was originally published on May 24, 2002

Every time someone in Bozeman turned on a faucet, filled up a glass and gulped without worry, Mike Certalic smiled. As the city's water and sewer superintendent, Certalic made friends everywhere he went and seemed to earn nothing but respect for everything he did. He died Monday. He was 54.

"There is not another department in this city that is more productive than the water and sewer department and we've got Mike Certalic to thank for that," said John Alston, assistant water and sewer superintendent. Certalic was found collapsed in a field behind his house, where he apparently died of a heart attack, family members said.

"It's so ironic that Mike died of what appears to be an apparent heart attack," Alston said. "Mike was instrumental to providing the first heart defibrillator in a workplace in the city of Bozeman." And he worked hard to maintain his health. "Working out was the only thing he did for himself," his older brother Joe Certalic said. Alston said, "Mike had the physique and the drive and energy of most individuals half his age. He showed up at work with two water bottles in his hands."

Certalic will be remembered for consistently putting the needs of the community, his co-workers and friends above his own. His efforts to protect the quality of Bozeman's drinking water were endless, City Manager Clark Johnson said. "Mike was one of the most driven people that I know," Johnson said. "He was quiet, but very strong." At the water department, Certalic served the Bozeman community. And, as a deacon at Resurrection Parish, he served the Catholic community. "If there was anything difficult to be done (at church), he'd be there to do it," Joe Certalic said. "He baptized babies, he married people, he was at funerals, he cared about people from infancy to death."

Through his own struggles as a child and young adult, Certalic gained the strength to care for others, friends and family said. In the Vietnam War, Certalic's legs were nearly destroyed by a grenade. Doctors said he would never walk again. But Certalic returned home to learn a complex form of karate. He trained in the same California studios as Bruce Lee and Chuck Norris. He was fierce by training, but gentle by nature, Alston said. "He would laugh from the belly and you really got him going when he started squeaking," Alston said. "But he could give you looks that also could freeze you in your tracks. He could give you what we call here at the water department his one-eyebrow look."

"Certalic raised the bar for personal and professional dedication at the water department, and his standards will be maintained, Alston said.

"I lost a brother," Alston added. "He touched me so much, in so many ways."

2002 Fall Examinations!

Fall Water & Wastewater Exams

Friday, September 27, 2002

MSU-Strand Union Building, Bozeman

Registration @ 8:00 a.m. Examination Period: 8:30 a.m. – 12:30 p.m.

NOTE, THERE WILL BE NO EXCEPTIONS TO THIS:

As required by ARM 17.40.208, everyone taking examinations must have done the following by SEPTEMBER 12, 2002:

1. Completed an application for certification as a water and/or wastewater operator;
2. Paid an application fee of **\$70.00 per water** and/or **\$70.00 per wastewater**; and
3. Mailed a registration slip and fee of **\$70.00 per** examination.

(Combination exams **2A3B, 3A4B, 4AB and 5AB** require **\$70.00 examination fee.**)

[Objects of revenue: A&B water app fee (\$70.) 503104; C&D wastewater app fees (\$70.) 503105; exam fees (\$70.) 503101]

To request application materials or to ask for additional information, call the certification office at 444-3434 for Reta Therriault, 444-4584 for Ashley Finnegan or write to:

Department of Environmental Quality
 Water and Wastewater Operator Certification
 PO Box 200901
 Helena MT 59620-0901



Fall Water & Wastewater Exams

Friday, September 27, 2002

MSU-Strand Union Building, Bozeman

Registration @ 8:00 a.m. Examination Period: 8:30 a.m. – 12:30 p.m.

Water & Wastewater Operator Certification

To register for an exam, detach and return this slip with appropriate fees by **September 12, 2002**

[Objects of revenue: A&B water app fee (\$70.) 503104; C&D wastewater app fees (\$70.) 503105; exam fees (\$70.) 503101]

	1	2	3	4	5
A – Water Distribution	___	___	___	___	___
B – Water Treatment	___	___	___	___	___
C – Wastewater Treatment	___	___	___	___	___

Name: _____ Operator #: _____

System Name: _____

Mailing Address: _____ Phone # _____

City/State/Zip: _____

69th Annual Fall School Agenda

The Annual Fall School will be held at the Bozeman MSU Campus. You have already received registration materials. The room locations for the classes listed below will be available on the first day. If you have any questions please call John Camden at (406) 444-4071 or e-mail at jcamden@state.mt.us. You can also call Reta Therriault at (406) 444- 3434 or e-mail rtherriault@state.mt.us.

MONDAY SEPTEMBER 23RD

Welcome to the Water School
 Joint Opening Morning Session
 Operator Certification Training
 Operator Reimbursement & Updates
 Vendor Show
 Basic Track for Certification
 Public Health Issues
 Plant Security & Emergency Preparedness
 Lunch
 Plant Security Panel Discussion
 Vendor Show 3pm-5pm

TUESDAY SEPTEMBER 24TH

Basic Track
 Disinfection Byproducts
 General Safety Procedures
 Wastewater Microbiology/Lab
 Operator Basics Training Series (Burns Center)
 Optimization of Solids Handling
 Spray Irrigation
 Water Treatment Optimization
 Enhanced Surface Water Treatment Rule
 LT1 SWTR
 Filter Backwash Recycle Rule
 Valves, Hydrants, and Piping
 Wastewater Treatment Plant Tour

WEDNESDAY SEPTEMBER 25TH

Basic Track
 Bozeman Distribution O&M Tour
 Chemical Feeder Calibration
 Wastewater Collection System O&M
 Filter Rehabilitation
 TMDLs
 Backwash Procedures – Open Discussion
 Computer Basics
 Groundwater System O&M
 Distribution Biofilm Research - MSU
 Wastewater Permits
 Source Water Protection
 Drought and Groundwater Monitoring
 Distribution O&M
 Water Sampling Procedures

THURSDAY SEPTEMBER 26TH

Basic Track
 SCADA & Its Uses
 Water Issues From Around The World – Russia
 Guest Speaker - Closing
 Wrap-Up
 Exam Prep Sessions 1:15 – 4:30

FRIDAY SEPTEMBER 27TH

Certification Exam Ballroom B/C

Phone: 406-442-4638
Email: lisatruck@aol.com

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