

Big Sky Clearwater

Volume XXXIV, Issue 1 — Spring 2004

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DEQ Approval Process for New Public Water Supply Wells

The Public Water Supply Law, 75-6-112(4) MCA, prohibits construction and operation of a public water system until the Department of Environmental Quality (DEQ) reviews and approves plans and specifications. Although this requirement is quite clear in the law, there is still confusion regarding the construction of test wells.

Test Wells

Test wells are drilled *only* for the purpose of evaluating the quality or quantity of a proposed groundwater source, and/or for monitoring of drawdown during test pumping of a production well. Test wells are usually smaller in diameter than production wells and are normally plugged and abandoned after construction of the production well. Test wells that will never be used as production wells may be drilled at any time without DEQ approval, but construction must comply with the Department of Natural Resources and Conservation (DNRC) well construction regulations.



If the owner or design engineer anticipates that a test well might be used as a production well following satisfactory quality or quantity testing, *then the owner must receive prior department approval* of the well location and the engineering plans and specifications. In this scenario, the department would typically approve only the construction and testing of the well. The well could be used as a public water supply source after the entire public water system is approved, and after satisfactory test results and as-built certification are provided to DEQ.

New Public Water Supply Sources

New public water supply sources must be reviewed and approved by the DEQ prior to construction and operation per Public Water Supply Law, 75-6-112(4) MCA. The Public Water Supply Section is charged with obtaining compliance.

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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.

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DEQ Approval Process for New Public Water Supply Wells - *continued from page 1*

Applications will generally require a two step approval process due to the fact that water quantity and quality information, needed for approval prior to connection to the water system, is not available until the source has been developed and tested.

The first step involves the source location and construction requirements. The Department's circulars, DEQ-1 and DEQ-3, contain requirements for submitting applications for new sources for community and non-community systems, respectively. Design reports and plans and specifications for source construction associated with community systems must be submitted by a professional engineer. Community and non-transient non-community sources, due to a more prolonged consumer exposure to possible contaminants, demand a more in-depth source water delineation and assessment. Accordingly, the PWS-6 submittal will include a detailed hydrogeological analysis along with potential contamination sources and a vulnerability assessment. These assessments will require preparation by a professional engineer usually with input from a hydrogeologist.

Applications for transient non-community sources, due to a more limited consumer exposure, may take on an abbreviated format. Plans and specifications may be a standardized format or a commitment by the applicant to ensure the developer uses state approved standard requirements. The PWS-6 submittal will normally consist of a brief system description and assessment of potential contamination; a location map showing a 100 foot radius around the source for determination of ownership and/or easement control and non-existence of contamination sources; plus an inventory map showing potential contamination within a one mile radius, and estimated ground water flow direction.

The second step involves testing the newly developed source for water quantity and quality parameters. The approval granted in the second step must be obtained by the applicant prior to construction of the remaining portions of a new system or connection of the source to an

existing system. In addition to documentation of water rights, information required for the second step includes:

- (1) Quantity
 - (a) Wells:
 - Test pump data;
 - Production pump selection and performance curve.
 - (b) Sources other than wells:
 - Yield and method of measurement.
- (2) Quality
 - (a) Community and Non-Transient Non-Community systems:
 - pH, temperature, alkalinity, conductivity, turbidity, calcium, iron, manganese, hardness, sodium, sulfate, chloride;
 - Inorganic chemicals;
 - Volatile organic chemicals;
 - Synthetic organic chemicals;
 - Unregulated chemicals;
 - Bacteriological.
 - (b) Transient Non-Community systems:
 - Nitrates/nitrites;
 - Conductivity;
 - Bacteriological.

Approval letters for new sources will normally grant approval for the location and construction requirements with the provision that water quantity and quality parameters will be provided upon completion of the source and prior to connection to the rest of the system. This constitutes only the first step of the new source approval process.

A second approval letter will be written upon receipt of satisfactory water quantity and quality information. This second step of the process will grant approval of the source and construction and/or connection to the rest of the water system.

All necessary approvals must be obtained from the Public Water Supply (PWS) Section. Questions may be directed the PWS Section at 444-4400. Source water protection staff (444-6697) can provide technical assistance with PWS-6 but are not authorized to approve.

DEQ Circulars can be viewed and downloaded from the Internet at <http://www.deq.state.mt.us/wqinfo/Circulars.asp>

Information about potential contaminant sources can be found and mapped at <http://nris.state.mt.us/wis/swap/swapquery.asp>

Instructions for completing a PWS-6 report for new non-transient wells can be viewed and downloaded from the Internet at <http://www.deq.state.mt.us/ppa/p2/swp/Circulars.asp>

This sheet is for guidance only. Additional requirements may apply. Contact the PWS Section at 444-4400 for more information.

DEQ Reorganization

By now you have obviously heard and possibly experienced the fact that the Department of Environmental Quality has undergone a program shuffle to create a few different bureaus. Despite the comments that government reorganizes just about the time that everyone becomes accustomed to the last reorganization, there are actually some valid reasons behind this one at the DEQ.

It all started when a legislative auditor's review determined that Underground Storage Tank (UST) Permitting Program in the department's Remediation Division was in fact a "permitting" function. As such, the legislative auditor recommended that the Tank Program be placed with other similar programs in the Permitting and Compliance Division.

Those of you that are familiar with the DEQ's previous reorganization may recall that the central issue was combining programs into bureaus based on the type of clientele. That is what gave rise to what may have been seen by some as unrelated combinations or separations of programs. Strange as it may seem, we made it work for nearly eight years. However, there were always a few indications that some tweaking could make things better.

Here is where the auditor's determination comes in. In order to move the UST program into the Permitting and Compliance Division there was obviously going to have to be changes and shuffling of programs. A decision was made that this was the opportune time to deal with some of the other beneficial changes that have come to light since the last reorganization.

In general, the new organization of the department has moved to a more media oriented format, i.e., water – air – waste. Consideration was also given to putting programs together that frequently interact with each other on different portions of the same project. So, in the Permitting and Compliance Division, the waste management programs became the Waste and Underground Tank Management Bureau; the air permitting, compliance, and modeling programs became the Air Resources Management Bureau; public water supply and subdivision review became the Public Water and Subdivisions

Bureau. In the Planning, Prevention and Assistance Division the watershed, water standards, and monitoring programs were combined in the Water Quality Planning Bureau; water pollution, source water protection, and the SRF funding programs are in the Technical and Financial Assistance Bureau; and the energy programs along with pollution prevention and assistance are now the Air, Energy, and Pollution Prevention Bureau. Another change people may notice is the Petroleum Tank Release Compensation Board has been removed from the Remediation Division and has become a stand-alone agency.

In combination with the programmatic changes, there were also some physical changes. The staff in the new and revamped bureaus have been moved around so that each group is located in proximity to each other. Of course, there are some exceptions. Of note is the Operator Certification Program, which unfortunately had to be located on a different floor from the rest of the Public Water and Subdivisions Bureau. Additionally, the Remediation Division has moved from the Phoenix Building near the airport into the old Armory building on the corner of North Last Chance Gulch (*also referred to as Main*) and Lyndale Avenue in Helena.

There is little doubt that all this seems a little confusing. So, for your benefit, a table showing the new DEQ organization is included in this publication. We hope you'll be patient with us as we all get used to the changes. ■

Department of Environmental Quality

Organizational Structure

DIRECTOR'S OFFICE - (406) 444-2544

Montana Environmental Policy Act Section
 Legal Section
 Personnel Section

FINANCIAL SERVICES - (406) 444-2442

Contracts and Procurement
 Accounting
 Budgeting

ENFORCEMENT DIVISION - (406) 444-0379

Case Management Bureau

Complaint Management Section

INFORMATION TECHNOLOGY - (406) 444-1840

Systems Administration Bureau
 Systems Applications & Development
 Systems Solutions Bureau

PERMITTING & COMPLIANCE DIVISION

Air Resources Management Bureau - (406) 444-3490

Air Compliance Section
 Air Permitting Section
 Analytical Service Section
 Policy & Planning Section
 Technical Support Section

Environmental Mgmt. Bureau - (406) 444-4953

Hard Rock Program
 Major Facility Sighting Act Program

Industrial & Energy Minerals Bureau - (406) 444-4970

Coal & Uranium Program
 Open Cut Program

Public Water Supply & Subdivisions Bureau - (406) 444-4400

Operator Certification Program
 Subdivision Review Section

Water Protection Bureau - (406) 444-3080

Non-degradation Review Program
 Water Quality Discharge Permit Section

Waste & Underground Tank Management Bureau - (406) 444-5300

Asbestos Program
 Hazardous Waste Program
 Junk Vehicle Program
 Solid Waste Program
 Underground Storage Tanks Program

PLANNING, PREVENTION & ASSISTANCE DIVISION - (406) 444-6697

Air, Energy & Pollution Prevention Bureau

Air Quality Monitoring & Data Management Section
 Business & Community Assistance Programs Section
 Energy Planning & Technical Assistance Section
 Public Buildings & Renewable Energy Section

Technical & Financial Assistance Bureau

Drinking Water Revolving Fund Section
 Source Water Protection Section
 Water Pollution Control Revolving Fund Section

Water Quality Planning Bureau

Data Management Section
 Water Quality Monitoring Section
 Water Quality Standards Section
 Watershed Management Section

REMEDIATION DIVISION (406) 841-5000

Fiscal and Administrative Services

Hazardous Waste Site Cleanup Bureau

Petroleum Release Section (*Leaking Underground Storage Tank*)
 Site Response Section

Mine Waste Cleanup Bureau

Abandoned Mines Section
 Construction Section
 Superfund Section

Technical and Financial Assistance Bureau (TFAB) News

The **Technical and Financial Assistance Bureau (TFAB)** in the Planning, Prevention and Assistance Division (PPAD) of the Department of Environmental Quality has reorganized to include the **Source Water Protection (SWP)** program. As DEQ changes to better serve Montana, functionally related programs are being placed together in established programs. Now, TFAB will include the **Water Pollution Control State Revolving Fund (WPCSRF)**, the **Drinking Water State Revolving Fund (DWSRF)** and the SWP programs.

Please contact Todd Teegarden, 444-5324, manager for WPCSRF, Mark Smith, 444-5325, manager for DWSRF, and Joe Meek, 444-4806, manager for SWP, for information and assistance related to these programs.

The WPCSRF goal is to maintain, restore and enhance the chemical, physical and biological integrity of the State's waters for the benefit of the overall environment and the protection of public health. The WPCSRF financial and technical assistance efforts are directed not only to wastewater treatment plants, but also assist with landfill projects and non-point source projects. Since the inception of the WPCSRF program in 1992, 109 projects totaling \$144 million have been funded and closed out. Additionally, the program has funded non-point source projects worth \$12 million for 150 landowners. The following project list illustrates some of the variety and scope of projects funded by the WPCSRF program during the past year:

Augusta Lewis & Clark County Water & Sewer (W&S) District; Big Sky Gallatin Co W&S District; City of Belgrade; City of Big Timber; City of Choteau; City of Colstrip Collection System; City of East Helena; Town of Geraldine; City of Helena; City of Great Falls; Town of Kevin, Town of Lavina; Town of Manhattan; City of Missoula WWTP Phase A, SID#524 (Storm Drain) and 39th St-Higgins Interceptor; Missoula County RSID 8473 (Lolo); Town of Nashua; North Montana Joint Refuse Disposal Project; Park City Stillwater County W&S District; Whitewater Phillips County W&S District; South Hills/City of Billings; Sweet Grass Toole County W&S District; West Yellowstone National Park/Hebgen Basin Solid Waste District; City of Whitefish; Hinsdale County

W&S District; Town of Virginia City; Town of Froid; City of Hardin; Missoula County Mullan Rd RSID 8474; and, Department of Natural Resources and Conservation (DNRC) Water Quality Projects, RDB III, RDB IV, RDB V, RDB VI and RDB VII.

The WPCSRF staff reviews preliminary engineering studies and plans and specifications, coordinates environmental reviews and other project inspections, and assists other DEQ functions by providing technical assistance to operators and managers through phone, mail and e-mail assistance, on-site inspections and training for operators, managers and engineers. Comprehensive inspections review fiscal practices, maintenance activities and plant performance. The staff of the WPCSRF program has professional engineers and a certified wastewater operator and trainer to assist with planning, operational and management problems.

The DWSRF goal is to provide direct financial assistance, through low-interest loans, to public water supplies to fund drinking water infrastructure projects. These projects are intended to further the public health protection goals of the Safe Drinking Water Act (SDWA). DWSRF engineers review preliminary engineering plans, conduct environmental assessments, review plans and specifications, and conduct construction inspections of drinking water projects. DWSRF can provide funding for any eligible project and system. We make small and large loans for different types of projects and we serve as the sole source of funding or as a partner with other funding sources. We also refinance existing projects where refinancing can improve the financial status of the public entity. Over 50 loans have been extended to date ranging from \$60,000 to \$8.4 million.

Drinking water projects funded last year include: Big Sky, 1 million-gallon storage tank, booster and pressure regulating stations and distribution mains; Billings/Cedar Park/Briarwood, bringing City of Billings water to Cedar Park and Briarwood subdivisions; Hamilton, engineering and construction loan for 2 new wells and design of a water tank and distribution improvements; LaCasa Grande subdivision, water system project to improve historically low pressure and flow conditions; Laurel, raw

water intake and pump station, water treatment plant improvements, and water main replacements.

The following list of DWSRF funded projects illustrates the kinds of projects we can provide assistance for: water intake and pumping stations (Yellowstone River at Glendive); on-going water main replacements (City of Great Falls); major water treatment plant expansions and rehabilitation (City of Havre); 4 million gallon water storage reservoir (City of Helena); water meter installations (e.g.: City of Choteau, Big Sky); refinance existing, water-system-related, debt (City of Kalispell).

The DWSRF also provides technical assistance through contracts with non-governmental agencies and provides funding for other drinking water related functions within DEQ. Our contractors provide direct hands-on technical assistance to public water system operators and also provide direct financial and managerial assistance to public water system owners, managers or operators. Currently, the DWSRF contracts with Midwest Assistance Program, part of the nationwide Rural Community Assistance Program, to provide these services which are free to public water supplies in Montana. Services for technical assistance may be requested by contacting Rob Ashton at 444-5316 and for financial and managerial assistance contact Gary Wiens at 444-7838.

Other drinking water related functions within DEQ that DWSRF provides funding for include: the public water supply program, the operator certification program and, as mentioned above, the source water protection program.

The Source Water Protection Program is working toward completion of a source water assessment report for each public water supply in Montana by mid-2006. All surface water-based supplies have been completed and most high priority groundwater-based systems are either completed or underway. You can use the Internet to see completed reports by going to <http://nris.state.mt.us/wis/swap/swapquery.asp>. The Source Water Protection Program also includes the Montana Wetland Coordinator. The coordinator is in the process of developing a means to identify and assess wetlands in the state. As many wastewater system operators know, wetlands play an important function in arid states like Montana and perhaps could play a larger role in polishing wastewater discharges.

The TFAB programs at DEQ are proud to serve the people of Montana and to help the Department of Environmental Quality achieve its *Mission to protect, sustain, and improve a clean and healthful environment to benefit present and future generations.* ■



Water Storage Tanks

Reflections in the Ripples

By Bill Bahr SRF Program

I want to thank **Jenny Chambers** for serving as primary editor of this issue of the Big Sky Clearwater. **Eric Minneti** and I have had the pleasure of serving as co-editors for the past several years and **Rick Cottingham** and I co-edited the Clearwater during the years dating back to about 1992. We have tried a variety of styles and tried to include helpful information for operators to use as they carry out the important work of providing safe drinking water and treating the wastewater generated by all of us in our daily lives. These operator goals protect public health and preserve our natural water and environment for future generations. Jenny and I will now serve as Clearwater co-editors ... so good luck, Jenny ... you'll need it as you learn to put up with me. Thanks for all the help, Eric and Rick. For all you water system operators out there, don't worry, they're not gone from DEQ, just serving in slightly different capacities; they promise to continue to contribute thoughtful and instructive articles in the issues to come.

The Helena area now has two of the most advanced wastewater treatment plants in Montana. The activated sludge biological nutrient removal wastewater treatment plant (WWTP) built in 2001 to improve the discharge from the **City of Helena** was designed to convert virtually all ammonia in the raw wastewater into nitrates (nitrification). Ammonia is toxic to aquatic organisms and effluent into the small Prickly Pear River from the old WWTP had a deleterious effect on those life forms. The old WWTP used a fixed film bioreactor that did not convert ammonia to nitrates in the winter. It also generated offensive odors occasionally, but that is a topic for another time. Nitrification requires warmer temperatures, more available dissolved oxygen, higher concentrations of microorganisms in the bioreactor and longer detention times to enable the nitrifiers, *Nitrobacter* and *Nitrosomonas*, to proliferate. The nitrifying organisms also consume alkalinity as they oxidize the ammonia compounds, so the pH in the wastewater is critical, too.

The new plant is successfully nitrifying the ammonia, and also includes an anoxic zone to denitrify the wastewater stream, recovering dissolved oxygen and the alkalinity

that nitrifying organisms consume in this process. Denitrification is a reduction process, as opposed to oxidation, and oxygen is released back into solution when it is stripped from the nitrate compound in the anoxic (no free oxygen) zone. Combining nitrification and denitrification processes in the same reactor basin provides energy savings for the facility in lowered aeration costs. The new treatment process reduces carbonaceous and nitrogenous wastes to levels lower than the old facility, producing a sparkling effluent that allows disinfection by ultraviolet (UV) radiation. UV disinfection requires an effluent relatively free of turbidity in order for the light waves to reach the pathogens. Nitrification and denitrification are complementary sequential processes that convert ammonia to nitrates and nitrates to nitrogen gas that is released back into the atmosphere. Nitrogen makes up about 80% by volume of the air we breathe.

The community of East Helena now has a new activated sludge wastewater facility that also incorporates nitrification, since it discharges into the Prickly Pear River, too. Ammonia can be removed from wastewater effluents in other ways, too, for example, ammonia stripping columns or breakpoint chlorination, but these tend to be expensive to operate. The Helena and East Helena plants are operated at the longer detention times necessary for effective nitrification. The facility at East Helena was designed by Biolac systems. This process is an extended aeration activated sludge facility that was constructed in one of the three aerated lagoons formerly serving East Helena. The cell was lined with a synthetic liner and a concrete clarifier was added at one end. This allows the operator to return solids from the clarifier to the bioreactor and maintain the appropriate concentration of activated biomass, including the nitrifying microorganisms.

The East Helena WWTP incorporates UV for disinfection and added solids handling facilities. The old system was an aerated lagoon, so upgrading to a biological nutrient removal (BNR) facility changed the operator classification from a 3C to a 1C facility. UV disinfection in both of the Helena-area WWTPs removes chlorine from the plant effluents, as well, since chlorine compounds are toxic to

Reflections in the Ripples *by Bill Bahr -continued*

aquatic organisms. The aeration system provided in this configuration is innovative, as well. Blowers bring atmospheric air through a common line, or header, to parallel air lines crossing the aerated basin spaced at intervals from the influent end to the discharge end entering the clarifier. Floats attached to each air supply line suspend the lines on the surface of the basin, while the diffusers are suspended in the basin beneath the air lines. The diffusers move back and forth as the air bubbles release creating mixing and aeration. The operator can control the amount of air flow to each line. Anoxic zones within the aeration basin for denitrification are established by turning off air to the appropriate lines. Some of these controls can be set automatically. This will be an interesting process to monitor as the years pass.

Proper Lift Station Operation and Maintenance

(O&M) requires that operators monitor the build up of silt and grease in the wetwell along with keeping the pumping system in tip top shape. A useful practice is to pump down the wetwell with the lead pump in manual and allowing the submersible pumps to become air bound. Do not run the pumps for an extended period while the water level is lower than the pumps, since the water keeps the pumps from overheating. Lift stations that have dry pump stations combined with wetwells will not be able to pump down without including a method for purging air from the pumps. Allowing the wetwell to fill and pulling the plug in the volute, or back flushing the air bound pump with the lag pump or the water in the discharge line by lifting the check valve, will also refill the volute. Be very cautious when lifting the check valve arm, since it can slam down causing damage to the equipment or even harming the operator. However, when applied carefully and safely, these pumping techniques can aid your lift station operation program.

By drawing down the wetwell to the bottom on a regular schedule, excess sand and silt can be monitored and pumped out instead of building up, plugging the pumps. Excess inert material in wetwells, especially if it is recent, can indicate deteriorating collection system pipes in the area. Other problems, like rocks, sticks and other foreign objects can be detected by looking at the bottom of the

wetwell from time-to time. It is important to implement all confined space work procedures when removing foreign objects from wetwells or doing other work inside these dangerous confined spaces.

Removing built up grease can be accomplished with this pump down technique, as well. Addition of caustic soda, anhydrous sodium hydroxide, will create heat in the water through reaction of the caustic soda with water and cause the solid grease to liquefy. Vigorous agitation of the wetwell contents with a portable air compressor and long pipe will improve overall removal. Pumping down the wetwell level to the pump volute will draw most of the grease out and send it on its way to the plant. Normal pump down levels do not allow the grease to reach the volute opening since the level stays above the pumps. Pumping grease through the pumps in this practice can cause the pump to plug with the grease, however, so it is important to flush the wetwell and the pumps thoroughly. A better approach to grease removal is to scrape all built up grease loose with long-handled tools and to allow the wetwell to fill to a safe level before physically skimming the grease from the water surface. A long-handled skimmer usually works fine. This approach actually removes the grease from the wastewater for disposal at the landfill, versus pumping the grease on to the WWTP where it remains in the treatment process to be dealt with later. Please note that some systems are using safe chemicals in wetwells and collection systems to help keep grease accumulation to a minimum

Lift station O&M includes watching the pumps cycle lead and lag positions and recording the run times for comparing pump capacity, pump wear and pump blockages. Every few years, operators should determine pump capacity, since it can change from the original values over time due to wear and age. An easy calculation is to measure the depth the water level is lowered during the pump cycle and time how long it takes a pump to lower the wetwell level that far. Whether the wetwell is rectangular or circular, the operator can determine how many gallons are pumped during this pump down cycle. Recording the run-times for each pump allows the operator to calculate how much wastewater is pumped each day. This determination can be compared to the original pump

Reflections in the Ripples *by Bill Bahr -continued*

rating to see if significant pumping capacity has been lost over time. This comparison will also aid in determining if pumps are plugged, if there is excessive drag or resistance on the pump, if one pump is performing worse than the other pump, the check valve or discharge lines are plugged or plugging, or a variety of other problems.

The amount wastewater flowing into the wetwell should be added to the pumping rate for accuracy, since it is also being pumped during the pump down cycle. The operator can account for this extra volume by timing how long it takes for the wetwell to rise to the start point. The volume filled per the time measured represents the wastewater flow in gallons per minute (gpm) at that point in time. The number of gallons flowing in in the time it takes for the pump to lower the wetwell level from the start to the off point can be added to the amount the pump removes and an accurate pump capacity calculated. Repeat this process for all the pumps and compare the actual pump rate with the rated capacity from the pump supplier.

Checklist: Handle chlorine with care

According to a brochure offered by the Montana Department of Labor and Industry, training workers on proper chlorine handling techniques can keep this useful chemical from becoming a major hazard. The following checklist features some reminders about basic chlorine safety procedures. For more tips on handling chlorine, see the complete brochure at erd.dli.state.mt.us/safetyhealth/brochures/chlorinesafety.pdf.

1. Provide proper instruction and supervision to workers charged with responsibility of the chlorine equipment.
2. Provide proper and approved self-contained breathing apparatus in areas where chlorine is stored or used.
3. Prepare escape plans from areas where there might be a chlorine emission. Remember to move uphill and upwind.
4. Never store combustible or flammable materials near chlorine containers.
5. Never apply heat directly to a chlorine container.
6. Never attempt to weld an "empty" chlorine pipeline without purging it with air first.
7. Install safety showers and eyewash stations near the chlorine equipment.
8. Obtain the proper emergency kit for the containers at your installation.
9. If there is a leak, at least two people should make the repairs.
10. Keep all breathing apparatus stored outside the chlorine area.
11. Do not spray water on leaking containers — this will make the leak worse.
12. When entering an equipment area, take shallow breaths until you are sure that there is not a chlorine gas leak.
13. It's best to rely on the chlorination equipment for direct disposal of chlorine gas.
14. Chlorine containers should be secured by chains, chocks or trunnions.

MPDES or MGWPCS Permit ABCs

All WWTP operators whose plants require discharge to surface or ground water and have a discharge permit are responsible for meeting all requirements in those permits. Ignorance of the conditions specified in the permit is no defense for failure to comply with the permit. If you haven't read your permit lately, now is a good time to find it and review the definitions, the sampling and monitoring schedules, the location of the discharge with respect to the location listed in the permit, any special monitoring requirements, the solids handling and disposal rules, the record keeping requirements and other key permit sections.

Be the hero for your community when you sample correctly, operate the facility within permit limits, stay within your budget, keep the community informed of system condition and needs, communicate with the DEQ Water Protection Bureau when major operational changes are anticipated and stay violation free. You can save the community money and prevent headaches for yourself by knowing what is expected and by following the rules as spelled out in your discharge permit. ■

What Ails Montana's Water?

Here's What We Know

Sediment, metals, nutrients and elevated water temperatures interfere with the beneficial use of Montana's streams and lakes. The beneficial uses that Montana protects are domestic and industrial water supply, stockwater, irrigation, recreation and aquatic life, fisheries and wildlife. For Montana to have healthy people and economies, water must be (1) reasonably clear, (2) free of excess algal growth, (3) low in toxic or

cancer-causing chemicals, and (4) cool enough that aquatic life can thrive and help cleanse the water. The water quality of 530 streams and lakes do not meet these criteria. The table below describes the pollutants that foul the water. The information comes from the Draft 2004 Integrated Water Quality Report that includes both the Impaired Waterbodies List [303(d) List] and the Montana Atlas [305(b) Report].

Pollutants that Interfere with the Beneficial Use of Montana's Water

Pollutant	Pollutant Concerns/ Sources	Solutions
<p>Sediment</p> <p>Size of problem: 218 waterbodies 3,669 stream miles 135,369 lake acres</p>	<p>Concerns: Although sediment occurs naturally, excess sediment in a lake or stream clouds the water. It reduces the amount of sunlight energy getting to aquatic plants, smothers fish spawning areas, covers food supplies and transports nutrients, pathogens, and heavy metals.</p> <p>Sources: Three sources of excess sediment are (1) paved areas and all roads next to the stream or lake, (2) bare or eroding streambanks and (3) removal of too much riparian vegetation by logging, grazing or homeowners.</p>	<p>Reduce excess erosion and sediment by channeling storm runoff from streets and parking lots to settling ponds. Use best management practices for installing and maintaining culverts and bridges. Protect streambanks by using buffer strips between fields and streams or by providing alternate sources of stockwater and shade. Construct logging roads to channel water away from streams. Restrict use of unimproved roads during spring breakup.</p>
<p>Metals</p> <p>Size of problem: 198 waterbodies 3,415 stream miles 437,822 lake acres</p>	<p>Concerns: Metals such as arsenic, selenium, mercury, chromium, zinc, lead, copper, and cadmium are toxic to most forms of life.</p> <p>Sources: The metals come primarily from past mining activities. However, mercury can settle onto lakes with dust and smoke. Selenium that is naturally in soil can be mobilized by farming practices.</p>	<p>Move mine waste to hazardous waste repositories or cap tailings to reduce erosion. Reduce air pollution levels. Continuous crop soils with high selenium levels.</p>

Pollutants that Interfere with the Beneficial Use of Montana’s Water

Pollutant	Pollutant Concerns/ Sources	Solutions
<p>Nutrients</p> <p><i>Size of problem:</i> 119 waterbodies 2,881 stream miles 178,049 lake acres</p>	<p>Concerns: Nutrients can wash into streams and lakes causing excess algal growth. Nuisance algae affects swimming and boating, creates foul tastes or odors, and kills fish by reducing the oxygen in the water.</p> <p>Sources: Nutrients are applied to enhance crop production but excess amounts of nitrogen, phosphorus, and potassium can get into our waterbodies. Nutrients are also found in manure, sludge, irrigation return flows, legumes and crop residues.</p>	<p>Implement nutrient management plans to maintain high yields and save money by using only the amount of fertilizer needed by the crop. Limit the discharge from animal feeding operations by storing and managing wastewater and runoff with an appropriate waste management system. Improve irrigation water management with water conserving methods to reduce return flows.</p>
<p>Temperature</p> <p><i>Size of problem:</i> 54 waterbodies 1,454 stream miles 0 lake acres</p>	<p>Concerns: An increase in water temperature promotes algal growth, decreases oxygen levels, and damages fish habitat.</p> <p>Sources: Water temperatures increase when vegetation that shades a stream is lost, when the channel is widened or dammed and flow is slowed, or when water is diverted and the total amount of water is decreased.</p>	<p>Plant riparian vegetation to shade the stream. Use water efficiently to reduce withdrawals during the warm summer months. Look for opportunities to create wetlands, riparian buffers, parklands and storm water management systems that allow the watershed to slowly release water throughout the summer months.</p>



Poor maintenance leads to culvert failure and excess sediment to the stream.



Proper culvert installation keeps water clear.

Do You Have Information That Will Improve the Draft Report?

The Draft 2004 Integrated Water Quality Report is available at: <http://nris.state.mt.us/wis/environet>. If you have problems accessing this site contact DEQ's Montana Integrated Report Coordinator at (406) 444-7424.

The public comment period lasts 60 days and wraps up on March 12, 2004. The draft 2004 report revises the list of impaired waters and proposes changes to the schedule for preparing total maximum daily loads or TMDLs. A TMDL is the total amount of a pollutant that a water body may receive from all sources and not exceed water quality standards. The comments will help the Department of Environmental Quality prepare a final 2004 Montana Integrated Report for submittal to EPA.

Comments on the list should be mailed to:

Integrated Report Coordinator
Department of Environmental Quality
PO Box 200901
Helena, MT 59620-0901

or they may be emailed to:

303listcomments@state.mt.us.

The DEQ cannot guarantee that comments received after March 12 will be considered in developing the final list. Any information received after this date will, however, be retained by DEQ and considered in preparing the 2006 list update. ■

Records Management Programs - A Vital Part of Every Business

By: Joyce Wittenberg

Once upon a time Jane decided to open a water consulting business. She knew the field well and was anxious to be on her own and to answer only to herself. She formulated a business plan, found the perfect location, secured the funding, applied for the necessary licenses, and hired a full-time receptionist and a part-time consultant. Boom! She was in business. Jane applied enormous funds to marketing her business, figuring she would see a great return on her investment. She was elated as she watched her business grow. She turned her part-time consultant into full-time and eventually had to hire more.

After a few years Jane realized that not only was the business growing, but so were the mounds of paper—invoices, reports, correspondence. To alleviate the problem, she told Ann, her receptionist, to go through the boxes of paper and the file cabinets and throw away anything that was over two years old, with the exception of any work done for certain persons—she wanted to hold on to everything pertaining to them. Ann did as her employer requested.

Over the next five years Jane went through several receptionists. Occasionally, as the mounds of paper overflowed, she would request that her receptionist destroy records for a past period of time, always keeping out various documents that suited her and occasionally destroying everything pertaining to a client that she no longer wanted or would need to deal with. Jane didn't give her records any rank of priority and never considered the notion that she might be destroying evidence that could save her thousands of dollars. There was no routine to her decisions regarding destruction of the records, and she had no policy or knowledge of laws to back up those decisions.

Then it happened—after only eight years in business. A client was fined over a decision made stemming from work done by Jane's firm. During the discovery period, the client's attorney, Joe, requested records from Jane. He wanted all records, paper and electronic, pertaining to the specific issue from the last five years.

For paper records Jane went to Jim, her newest receptionist. She asked him to locate all documents pertaining

to the particular issue. Jim worked 12-hour days for an entire week to locate and copy the documents. He had to read many of them to decide whether they were pertinent.

In the meantime, Jane asked each of her staff members to go through their email and any other electronic documents they might have and print everything that pertained to the issue.

The task proved easy for Tim, since he deletes his email on a weekly basis. He only had a couple of days worth of email to go through and doesn't keep any electronic documents.

Pam found the task to be much more tedious and would require nearly a week to plow through her email and other electronic documents, since she never deletes anything and has been on staff since day one. In fact, when her inbox gets too full, Pam prints two months worth and keeps it in a file drawer in her office.

Jane fell in the middle—she addressed her email and electronic records in the same fashion as she did her paper records, occasionally deleting everything over a period of time old. Of course there were always a few documents she would keep for various reasons.

Ten days after the discovery request was made, Jane submitted an envelope about three inches thick, containing the documents requested to Joe.

Upon review of the folder's contents, Joe asked Jane where certain emails were that had transpired between her and the client over the previous two years. Jane responded that the contents of the folder were all they could find and that if something was not in the folder, then it had probably been deleted or destroyed. When Joe asked about back-up systems for electronic records and email, Jane had no idea what Joe was talking about.

The case went before the judge very quickly. Joe made his client's case to the judge. Jane testified in her own defense, but had very little evidence to back it up. When Joe asked about the evidence that could back up the work her firm had done for the client, the basis for the decisions, Jane replied that most of it had been destroyed.

Records Management Programs-A Vital Part of Every Business - *continued from page 8*

Joe asked Jane if she had a records retention policy that she consistently followed for destroying records in the normal course of business. Jane couldn't answer, she had never even heard of a records retention policy. The best she could do was state that her records were destroyed during working hours on a regular basis. Joe asked her to clarify the methodology she uses when determining when and which records to destroy. That was all it took.

The client won the case for thousands of dollars, including attorney costs. The judge reprimanded Jane for the way she had maintained and destroyed her business records. Jane not only lost thousands of dollars to the client, but it also cost her thousands of dollars in attorney fees and court costs. Worst of all was the loss of her business. Between the dollars lost and the loss of her reputation, she was forced to file for bankruptcy.

Were the decisions Jane made the cause of the fines received by the client? No one will ever know, not only

because Jane destroyed precious records that could have proven otherwise, but also because she did not have a records management program in place. In fact, the latter reason is the first and foremost reason why Jane lost. Jane learned a very costly lesson.

Although the above story is fictitious, similar situations have occurred. Could your records management program have saved you if you were in the above situation? Do you even have a records management program? Do you have records retention schedules in place that are legally sound? If so, do you consistently follow them and destroy records in the normal course of business? Do you know that holding on to records too long could be just as costly as destroying them too soon? If you said no to any of the above questions, you could be next.

If your records management program needs refining, or if you are starting from square one, here are some resources to help get you started. When your business is sitting in the hot seat, don't let your records management program, or lack of one, be your demise.

Montana Secretary of State's Office

See how the State is handling its records.
<http://www.sos.state.mt.us/css/index.asp>

U.S. National Archives and Records Administration

See how the Feds are doing it.
<http://www.archives.gov/>

ARMA International

(Association for Information Management Professionals)

<http://www.arma.org/>
 Phone: (913) 341-3808 or (800) 422-2762
 E-mail: hq@arma.org

Big Sky Chapter E-mail: kstead@mergenthaler.net

AIIM International

(Enterprise Content Management Association)
<http://www.aiim.org/>

New Faces With The Montana Environmental Training Center (METC)



MILLICENT (MILLS) THORSELL

HELLO, MY NAME IS MILLICENT (MILLS) THORSELL and I am the new Administrative Assistant here at METC. I've been here in Great Falls for the last 11 years. I am originally from the San Diego area. I've been in retail for the last 15 years and am now making a change. I am a full-time student at the College of Technology taking classes in Business Administration and working part-time. I am thrilled to be working here and learning new things everyday. If I can be of assistance please call me at METC #406-268-3724.

HELLO, MY NAME IS GARY HALL and I am the new METC "Training and Development Specialist." Growing up in Missoula and the mountains and streams of western Montana, gave me an avid interest in the environment. I graduated from the U of Montana, majoring in chemistry and zoology. My wife Pati and I recently moved to Great Falls from Kalispell. For a number of years I was employed as the senior chemist and microbiologist for an environmental lab where I picked up much of my knowledge of water and wastewater operations. I served in Vietnam as a US Air Force pilot, flying the rescue command aircraft and for Air Weather Service as a "Hurricane Hunter." For the past 40 years I have been an avid Nordic alpine skier, and have been a member of the National Ski Patrol, serving in many capacities. My wife Pati is a chemical dependency counselor, certified in both Montana and Minnesota. I can be reached at METC #406-771-4432 for your training needs.



GARY HALL

Nominations Requested for MSAWWA/MWEA Lifetime Achievement Award

By: Jim Melstad

The Joint Lifetime Achievement Committee of the Montana Water Environment Association (MWEA) and the Montana Section of the American Water Works Association (MSAWWA) is requesting nominations for the Lifetime Achievement Award. The award is intended to recognize Montana water and wastewater professionals who are retired or semi-retired, and who have made significant contributions to their field over the course of their careers.

The qualifying characteristics a candidate must meet to be eligible for this award are all of the following:

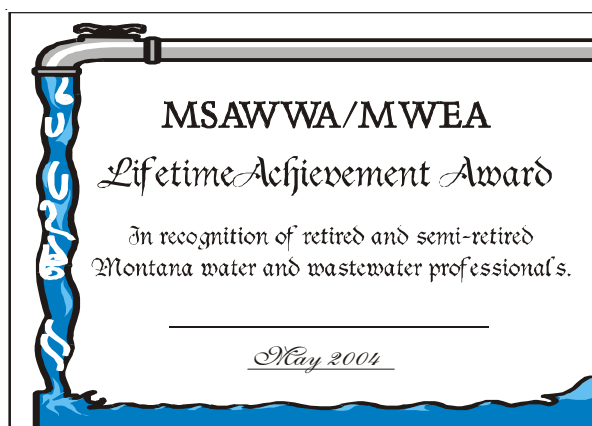
1. Candidate must be retired, or at least semi-retired. (No longer full-time).
2. Long-term dedication to the development of excellence in the water and/or wastewater industry and professions;
3. Significant contributions to the Montana water and/or wastewater industry that add to the long-term protection of public health and the environment.

Outstanding service to the Montana Section and/or Association is a desirable characteristic, but it is not required.

After nominations are received, the committee makes recommendations to the boards of MWEA and MSAWWA. The boards then select the award winners. There is no minimum or maximum number of awards that must be presented in a given year. Successful nominees for this year will receive their awards at the annual MSAWWA/MWEA conference in May 2004.

If you have a candidate in mind, please contact Barb Coffman at bcoffman@hi-line.net or Jim Melstad at jmelstad@cadmusgroup.com for the nomination form.

Nominations are due by March 1, 2004, so please don't wait to complete your nomination.



Montana Water Environment Association and Montana Section of the American Water Works Association

LIFETIME ACHIEVEMENT AWARD



The award:

A lifetime Achievement Award Plaque from both Montana Associations.

Frequency of Award:

As determined by the Committees and Boards of Directors.

Eligibility for the Award:

The qualifying characteristics a candidate must meet to be eligible for this award are all of the following:

1. *Candidate must be retired, or at least semi-retired. (No longer full-time).*
2. *Long-term dedication to the development of excellence in the water and/or wastewater industry and professions;*
3. *Significant contributions to the Montana water and/or wastewater industry which add to the long-term protection of public health and the environment.*

Outstanding service to the Montana Section and/or Association is a desirable characteristic, but it is not required.

Entry Requirements:

Submit full name, address, complete biography, date of birth, retirement etc. as appropriate.

Nomination Procedure:

Nominations may be made at any time by any member, or committee of either association. To be considered for selection in any year, however, nominations must be *received by March 1st*. Nominations should be submitted to the Secretary-Treasurer of either association who will transmit it to the appropriate committee for consideration. Nominations must be accompanied by 5 copies of:

1. The appropriate nomination form;
2. A brief (<250 words) statement summarizing the nominee's "distinguished service" in the water and/or wastewater fields;
3. A biography in a format designated by the associations; and
4. A draft citation of < 50 words.

Award Committee Membership:

The committee shall consist of two members from each association duly appointed by the Section Chair and Association President.

Presentation of the Award(s):

The award(s) shall be presented at the Annual MSAWWA/MWEA Conference.

SUBMIT TO: Barb Coffman
Executive Secretary, MSAWWA
1029 Washington Ave.
Havre, MT 59501

**MSAWWA/MWEA AWARD COMMITTEE
LIFETIME ACHIEVEMENT AWARD
ENTRY FORM**

SUBMIT TO SECRETARY-TREASURER OF MSAWWA OR MWEA:

Deadline for submission: **March 1, 2004**

1. Nominee's Full Name: _____
Title: _____
Mailing Address: _____
Phone Number: _____

2. On a separate sheet, please provide:
 - **Eligibility/Justification:** Please provide the details of the nominee's "distinguished service" in the water supply field which entitles him/her to this award (preferably <250 words). Note that you do not have to duplicate any of the information contained in the biographical information form (see item #3).
 - **Citation:** A citation of 50 words or less (for use during presentation of the award if the nominee is selected).

3. Biographical Data: Please complete a Biographical Information Sheet (attached below).

Submitted by: _____

Date: _____

Mailing Address: _____

Phone: _____

(Attach additional sheets as required.)

Awards Committee

Lifetime Achievement Award

Biographical Information

(Print Clearly or Type. Use additional pages if necessary.)

a. Brief employment history: _____ _____ _____
b. Civic organization memberships: _____ _____
c. Year joined MSAWWA _____ MWEA _____ and offices held (<i>indicate whether state or national</i>): _____ _____
d. Professional organization memberships: _____ _____ _____
e. Professional awards or honors received. Give year and identify awarding organization(s): _____ _____
f. College(s): _____ Degree(s) _____ Year(s) _____
g. Publications: _____ _____ _____
h. Date of Birth _____ Date of Retirement _____ Date of Death _____
i. Additional relevant information: _____ _____

MSAWWA and MWEA Your Connections to Montana's Water Environment for Over 60 Years

60th MWEA Meeting and 79th MSAWWA Meeting

MWEA/MSAWWA Annual Conference

May 12 - 14, 2004

Bozeman, Montana

An Invitation to the Conference from our Association Chairs

We would like to invite you all to Bozeman for the 2004 MWEA/MSAWWA Joint Conference May 12 - 14, 2004. The program committee has worked hard to prepare a program that includes a variety of topics to be presented under three tracks; water, wastewater and multiple topic. With three tracks of speakers, a field trip and the exhibitor expo there should be great information for everyone. We hope you all plan to attend the conference and support our associations.

- Todd Teegarden, MWEA President and Terry Threlkeld, MSAWWA Chair

A Pre-conference Invitation from the Cross-Connection Control Committee

Come join MSAWWA and MWEA for a great pre-conference on May 12, 2004. This year's topics are Backflow Prevention and Cross Connection Control. Learn what you need to know to protect your water system and prevent cross connections with your wastewater system - now, and in the future!!

The pre-conference topics have been picked to help you learn all you can about cross connections. Whether you have an active cross connection control program, or you are wondering what the difference is between a RP and a DC. Come enjoy the line-up of speakers who will do their best to educate you on backflow prevention and cross connection control. We hope to see you there.

*- Spencer Stone and Ray Hedglin, Co-Chairs
MSAWWA/MWEA Cross Connection Control Committee*

Welcome to Bozeman from our Host City Committee

The 2004 Host City Committee welcomes you to Bozeman and hopes you'll enjoy the 2004 conference. Entertainment this year will feature the Vigilante Players during a dinner theatre.

Bozeman is currently growing at a rate of almost ten percent per year. There is something new in the city almost every week. Take some time and experience the unique opportunities only Bozeman has to offer from the complete remodel of Main Street on the east end of town to the new shopping opportunities on North 19th.

Bozeman has one of the best run water and wastewater facilities in the state. A tour of the wastewater facility during the conference is sure to be of interest to operators, engineers and managers. Whether you prefer a tour of the Museum of the Rockies, a trip to the University, unique dining opportunities, a movie at the most state of the art theatre complex in Montana or just a tour of the city, Bozeman has a little something to offer everyone. Have a great conference.

*- Terry Threlkeld and Karen Sanchez, Co-Chairs
MSAWWA/MWEA Host City Committee*

Visiting Dignitaries to Share News from WEF and AWWA

Lynn Orphan is the 2003-2004 President Elect of the Water Environment Federation. A WEF member for 22 years, she has served on the Executive Committee and is a member of the Water Reuse Committee. She received

MSAWWA and MWEA - Your Connections to Montana's - *continued from page 13*

the Arthur Sidney Bedell Award in 1996. Orphan is currently senior engineer and regional manager of business development at Kennedy/Jenks Consultants in Reno, Nevada. She is also an AWWA member.

Marlay Price is the 2003-2004 President of the AWWA. He has served AWWA and his section for more than 30

years. He has been AWWA Treasurer, a Director-at-Large and chaired the Finance and Dues Study Committee and the Manufacturers/Associates Council, to name a few. Price has been awarded the Diamond Pin, Ambassador, Silver, Gold and Platinum honors, and Fuller Award. Price is currently Vice-President for the consulting firm of Gannett Fleming, Inc. in Versailles, Ohio.

MSAWWA Pre-conference - Preliminary Agenda *Cross-Connection Control and Backflow Prevention - Is Your System Protected?* *Wednesday — May 12, 2004*

Wednesday, May 12, 2004

- | | |
|------------------|--|
| 7:30 - 8:00 am | Registration |
| 8:00 - 8:45 am | Contaminants - What Can Harm You? - Barry Carter, Precision Plumbing |
| 8:45 - 9:30 am | Cross-Connection Control in Montana - Greg Butts, DEQ |
| 9:30 -10:15 am | Establishing a Cross-Connection Control Ordinance - Gary Mitchell, Mtn. Water Co. |
| 10:15 - 10:30 am | BREAK |
| 10:30 - 11:15 am | Performing a Cross-Connection Control Survey - Ray Hedglin |
| 11:15 - 12:00 am | Montana Backflow Incidents - Be on the Lookout - Greg Butts, DEQ |
| 12:00 - 1:00 pm | LUNCH - On Your Own |
| 1:00 - 2:30 pm | Backflow Prevention Assemblies, What, Where & Why - Barry Carter |
| 2:30 - 3:15 pm | Fire Suppression Systems & Backflow Prevention - Barry Carter |
| 3:15 - 3:30 pm | BREAK |
| 3:30 - 4:15 pm | Temporary Connections - Preventing a Permanent Hazard -
Spencer Stone, Curb Box Specialists |
| 4:15 - 5:00 pm | Panel Discussion - Get answers to your questions from the speakers and others
knowledgeable in cross connection control and backflow prevention |
| <hr/> | |
| 3:00 pm | Board Meetings for MSAWWA and MWEA |
| 5:00 pm | Ice Breaker |
| 7:00 pm | Joint Executive Board Meeting |

MWEA/MSAWWA 2004 Joint Conference - Preliminary Agenda
Your Connections to Montana's Water Environment for Over 60 Years
Thursday — May 13, 2004

Thursday, May 13, 2004

7:00 am - 5:00 pm Registration Desk Open

General Session

8:00 am - 8:30 am Welcome and Opening Session
 Introduction of AWWA and WEF Guests
 Welcome Address - Ron Brey, Acting Bozeman City Manager

8:30 am - 9:15 am Guest Speaker - Lynn Orphan, President-Elect, WEF

9:15 am - 10:00 am Berkley Pit Wastewater Treatment Plant - Russ Forba, USEPA

10:00 am -10:30 am BREAK - Exhibitors Expo

10:30 am -11:15 am Whirling Disease in Montana - Alexander Zale, MSU-Bozeman

11:15 am -12:00 noon Water & Wastewater Systems in Yellowstone National Park - Steve Lobst, YNP

12:00 noon -1:15 pm LUNCH and SCHOLARSHIP AWARDS

Guest Speaker - Marlay Price, President, AWWA
 Drawing: Early Bird Prize
 Awards: MSAWWA/MWEA Scholarship, MWEA Small Systems,
 AWWA Lifetime Membership and AWWA Operator's Meritorious
 Service

Afternoon Concurrent Sessions

Water Sessions

1:15 pm - 2:00 pm Connecting Big Sky's New Water Distribution System - Ron Edwards, BSCW&SD,
 Scott Smith Allied Engineering Services, & Eric Magee, DYK Inc.

2:00 pm - 2:45 pm Arsenic Treatment Alternatives - Jim Pritchard, Tonka Equipment Co.

2:45 pm - 3:15 pm Continuous Flow Backwash Water Treatment at the Great Falls Water Treatment
 Plant - Mike O'Brien & Gary Hendrix, Thomas, Dean, & Hoskins Inc.

3:15 pm - 3:45 pm BREAK - Exhibitors Expo

3:45 pm - 4:30 pm Distribution Protection - John Alston, Bozeman Water/Sewer Dept.

4:30 pm - 5:00 pm Water Well Case Studies for the Fox Hills Aquifer -
 Mark Cunnane, Western Groundwater Services, LLC

Wastewater Sessions

1:15 pm - 2:00 pm Biosolids Digestion - "A TAD Bit Easier" - Kevin Staton, Purdue University

2:00 pm - 2:45 pm Projecting Flows and Loads for the City of Lincoln City, OR - Dale Richwine, MWH

2:45 pm - 3:15 pm Lagoon Treatment Process Upgrades - Mitch Hylen, Environmental Dynamics Inc.

3:15 pm - 3:45 pm BREAK - Exhibitors Expo

3:45 pm - 4:30 pm Wastewater Discharge Regulations Update - Tom Reid, DEQ

4:30 pm - 5:00 pm Biofilters for Odor Control in Wastewater Treatment -
 Calvin Pride, Ambio Biofiltration Ltd.

MWEA/MSAWWA 2004 Joint Conference - Preliminary Agenda - *continued***Thursday, May 13, 2004****Afternoon Concurrent Sessions - *continued from page 15***Multiple Topic Sessions

1:15 pm - 2:00 pm SCADA & Telemetry Systems - Troy Hertog, US Filter Control Systems

2:00 pm - 2:45 pm Design Considerations for a High Pressure Steel Forcemain -
Ray Armstrong & Kevin Johnson, HKM Engineering2:45 pm - 3:15 pm Corrosion Control & Cathodic Protection for Water Systems -
Jim Lary & Jeff Rog, Corpro Companies Inc.**3:15 pm - 3:45 pm BREAK - Exhibitors Expo**

3:30 pm - 5:00 pm On-site Tour - Bozeman Wastewater Treatment Plant - Tom Adams, City of Bozeman

5:00 pm - 6:30 pm Hosted Beer & Wine Bar

6:30 pm

DINNER Theatre & AWARDS

Dinner Theatre: "Water Bingo" - Vigilante Players - Vendor Prizes

Awards: AWWA Fuller, WEF Arthur Sidney Bedell,

MSAWWA/MWEA Lifetime Achievement

Friday, May 14, 2004

7:30 am - 9:00 am Joint MWEA/MSAWWA Membership Meeting

8:00 am - 10:00 am Late Registration

Water Sessions9:00 am - 9:45 am Environmental Contamination Control Utilizing Ultraviolet Light &
Hydrogen Peroxide - Michael Leach, Trojan Technologies

9:45 am - 10:30 am Cross-Connection Control in Montana - Greg Butts, DEQ

10:30 am - 11:00 am BREAK - Exhibitors Expo11:00 am - 11:30 am Applying Worldwide Best Management Practices in Water Loss Control -
Stu Bowns, Woolpert11:30 am - 12:00 noon Preventive Maintenance Program for Cast Iron & Ductile Iron Water Lines Reduces
Leakage & Operating Costs - Jim Lary & Jeff Rog, Corpro Companies Inc.Wastewater Sessions9:00 am - 9:45 am Lagoon Lining System Design - Lessons Learned from the Solid Waste Industry -
Robert Church, Entranco9:45 am - 10:30 am Lagoon Covers Meet Reduced BOD, Ammonia & TSS Discharge Limits -
Jim All, Lemna Technologies, Inc.**10:30 am - 11:00 am BREAK - Exhibitors Expo**11:00 am - 11:30 am Integrated Constructed Wetland Treatment Designs for Enhanced Biological and
Nutrient Treatment in Small Flows Applications - Paul Miller, U of M Grad. Student11:30 am - 12:00 noon Using Hybrid Poplars to Treat Effluent from Missoula's WWTP -
Denise DeLuca, Emergent Solutions

MWEA/MSAWWA 2004 Joint Conference - Preliminary Agenda - continued**Friday, May 14, 2004 - continued from page 16**Multiple Topic Sessions

9:00 am - 9:45 am Stormwater Regulations - Brian Heckenberger, DEQ

9:45 am - 10:30 am Septic System Evolution - Steve Anderson, Anderson Precast & Supply, Inc.

10:30 am - 11:00 am BREAK - Exhibitors Expo

11:00 am - 11:30 am Bypass Pumping Made Easy - Carl Richards, Godwin Pumps

11:30 am - 12:00 noon Trench Collapse/Safety - John Alston, Bozeman Water/Sewer Department

12:15 pm LUNCH and PRIZES

Introduction of New MWEA President and MSAWWA Chair

Prizes: Committee Sign-up, Membership Recruiting, Photo Contest, & Vendor

Recognition: Committees

1:30 pm CONFERENCE ADJOURNS

WATER FOR PEOPLE SILENT AUCTION - to be held during the conference. If you would like to donate items to the WFP Silent Auction please contact John Campbell at (406) 883-2661 or e-mail him at mingong@compuplus.net. Bring your auction items (large or small - all items are appreciated) to the registration desk by 8:00 a.m., Thursday, May 13. Then join in the fun and bid on WFP Silent Auction items during the conference. All proceeds from MSAWWA go towards supporting WFP projects in Malawii and Honduras.

REGISTRANT COMPANIONS - In addition to the conference activities, a companion program is planned which includes a trip to the Museum of the Rockies and Planetarium, lunch, and the Dinner Theatre on Thursday, May 13. Please contact Barb Coffman at (406) 265-9753 or bcoffman@hi-line.net if you are bringing a companion to the conference. The charge for the museum tour is \$8.00/adult, \$4.00/child (age 5-18), planetarium tickets are \$3.00, combo tickets (Museum + Planetarium) is \$9.50/adult and \$6.50/child, payable at the museum. The charge for Thursday's lunch and the Dinner Theatre is \$35.00, payable to MWEA/MSAWWA. We will provide transportation to the Museum of the Rockies and Planetarium.

PHOTOGRAPHERS - The 3rd annual photo contest will also take place at this year's conference. Please enter your water or wastewater related photos - awesome prizes will be awarded!!

70th Annual Fall Water School Was A Success!

The 70th Annual Fall Water School was held in Bozeman, September 22-25th, 2003. The Montana Department of Environmental Quality, Montana Environmental Training Center, Montana State University (MSU) College of Engineering, and the MSU Montana Water Center conduct the Fall Water School. This school is designed for entry level and experienced operators and

managers. There were an approximately 175 participants and 16 vendors at the School. An examination was held on September 26, 2003 and 72 individuals were signed up to take an examination. It was a great turnout and good comments were received from those that attended. Thanks to all of you that continue to make Fall Water Schools a success!



Shelley Nolan (left) received the Montana Environmental Training Award. Shelley is the Training Specialist with Montana Rural Water Systems, Inc.



Marvin Woelich, City of Forsyth, (above) was the winner of the 19" color TV. John Camden, DEQ, presented the door prize during the Vendor Show.



Tom Adams, (right) Bozeman Wastewater Treatment Plant Superintendent, discussed their plant upgrade problems and solutions.



Dr. Patricia L. Meinhardt, (right) Executive Medical Director, Center of Occupational and Environmental Medicine in New York presented several topics including Anti-Terrorism Measures for Water Utilities.

VENDOR SHOW PARTICIPANTS



ITT Technologies at Fall Water School Vendor Show (above)



Barbara Coffman, (right) Montana Section American Water Works Association

MIKE CERTALIC AWARD

The Mike Certalic Award is presented at the Fall Water School to an outstanding water or wastewater operator in the State.

The 2003 Mike Certalic Award recipient was Mr. Al Kelm. Al is the water and wastewater superintendent with Miles City.

Congratulations Al!

EPA Clean Water Act Awards

2003 CLEAN WATER ACT RECOGNITION AWARDS: OPERATIONS AND MAINTENANCE (O&M) EXCELLENCE

The objectives of this awards program are to inform the public about the contributions waste water treatment plants make to clean water, to encourage public support for effective O&M, sewer use, and user charge systems; and, to recognize communities that continue to meet permit requirements for outstanding O&M practices. The Most Improved Plant (MIP), which demonstrates the effectiveness of the CWA Section 104(g)(1) program, is also recognized.



**PLEASE CONTACT THE
State Manager about this award program as soon as possible to meet the deadline for the regional competition. Friday, April 16, 2004 should meet regional submission deadlines. Regional winners will be forwarded to the national competition. Regional nominations for the national award will likely be due to headquarters by Monday, May 31, 2004. The State Manager is:
Bill Bahr, DEQ, at 406-444-5337
bbahr@state.mt.us**

Evaluation criteria for the awards are: demonstrated evidence of and achievements resulting from innovative and outstanding O&M programs and management, continuing high levels of effluent compliance, cost saving techniques, environmental benefits, and the apparent difficulty of operating and maintaining the plant.

Most Improved Plant (MIP) reviews will also consider: demonstrated improvements in effluent quality and overall operation and maintenance; the complexity of the problems and obstacles overcome in reaching compliance goals; the apparent foundation for long-term, sustained permit compliance; and the timely achievements of the improvements. The plant should currently be in compliance with water quality requirements.

Eligibility Requirements: facilities and states must adhere to the submittal deadlines of the national and regional O&M Award schedules to be assured of national consideration. Any publicly owned wastewater treatment facility is eligible to be considered under the national O&M Awards Program, including Native American Tribal facilities. Other requirements are:

1. The awards category eligibility will be based on average design capacity and treatment level. The plant should have been in operation at the same treatment level and design capacity for at least two years as covered in the two calendar years of data reported in the compliance section.
2. Within the last three years, the plant must not have been upgraded to meet secondary or advanced limits nor have gone through an expansion that exceeded the January 1, 2000 average design capacity by 50%.
3. The plant must not have won a national first place O&M award within the last five years, nor won a national second place O&M award within the last three years.
4. To qualify for the MIP category, the plant must have an average design capacity of less than 5.0 mgd and be able to demonstrate that improvements resulted from a state or federally managed on-site technical assistance program, specifically the EPA Section 104(g)(1) On-site Assistance Program for small communities.
5. To qualify for the non-discharging plant category, the plant cannot have an NPDES permit, except if there is a no discharge permit, but can have state-specific and technology-specific limits for non-surface water related discharges. Plants with intermittent or seasonal discharges, however, are eligible to be considered for other awards categories.

EPA Clean Water Act Awards - *continued***Awards Category Eligibility**

Category	1.0 mgd or less	1.1 to 10.0 mgd	10.1 mgd or more
Secondary Treatment Plant	Small (S-S)	Medium (M-S)	Large (L-S)
Advanced Treatment Plant	Small (S-A)	Medium (M-A)	Large (L-A)
Non-Discharging Plant	Small (S-ND)	Large (L-ND)	Large (L-ND)
Most Improved Treatment Plant (MIP)	Eligible if less than 5.0 mgd		Not eligible

A plant should be included in the secondary treatment plant category if the plant's effluent is designed and permitted (30 day average) to release up to 30 milligram per liter (mg/l) of both 5 day-biochemical oxygen demand (BOD5) and total suspended solids (TSS) to the surface waters, and as a minimum, remove 85% of the BOD5 and TSS from the influent. This definition, however, may not apply in some states (and plants are still eligible) that allow higher TSS limits when lagoons or trickling filters are used to provide secondary treatment, in a few states where EPA and states have agreed to a more stringent definition of secondary treatment, or where a plant has been granted a 301(h) waiver. A plant is not considered a secondary treatment plant when the effluent requirements include any of the conditions that meet the definition of advanced treatment as listed in the following paragraph.

A plant should be included in the advanced treatment plant category if the plant's effluent is designed and permitted (30 day average) to meet any one of the following conditions: a) release less than 30 milligram per liter (mg/l) of both 5 day-biochemical oxygen demand (BOD5) and total suspended solids (TSS) to the surface waters, and as a minimum remove 85% of the BOD5 and TSS from the influent, or (b) remove ammonia, nitrogen, or phosphorus, or (c) provide additional treatment after a secondary process using coagulation and filtration. A plant should be considered advanced even if advanced treatment applies only on a seasonal or periodic basis. ■

Kalispell Wastewater Treatment Plant Wins 1st Place National EPA Clean Water Act Award

During the past year, the Kalispell WWTP Manager, Joanne Emrick, and her staff at the plant have participated in the annual Clean Water Act awards program established by the Environmental Protection Agency. This awards program is designed to improve performance at all treatment facilities by acknowledging outstanding and innovative operation and maintenance practices.

The Kalispell Advanced Wastewater Treatment Plant has compiled an enviable record of performance in the slightly more than ten years it has been in operation. The AWWTP has met and exceeded expectations in removal of pollutants from wastewater prior to discharge to Ashley Creek and, ultimately, the pristine Flathead Lake.

Along with many other outstanding aspects to the plant operation and maintenance program, the staff has managed this record of performance while reducing overall energy demand, protecting the investment Kalispell citizens have in this facility.

After winning first place in the EPA Region VIII competition, the city's treatment plant was honored with the first place award at the national level. Joanne received the award at the annual WEFTEC conference in Anaheim in October. John Wardell, Director of the Montana EPA office, and Bill Bahr, State Manager for the EPA awards program, attended a city council meeting in November to officially present the regional award and acknowledge the national award for the manager and staff.



(L to R) John Wardell, EPA; Louis Eskestrand, operator; Curtis Konecky, operator; Phil Lauman, operator; Joanne Emrick, Plant Manager; John Overcast, operator; and, Robert Piorek, laboratory technician.

Water and Wastewater Operator Certification News

Water and Wastewater Operators' Advisory Council Changes

The Water and Wastewater Operators' Advisory Council provides program stakeholder review functions. The governor appoints the Council members and over the past few months there has been some member changes.

- On September 2, 2003, Jim Melstad, Department of Environmental Quality retired from the department and therefore resigned from his position on the Council. Mr. Melstad held the position as the ex officio representative as outlined in 2-15-2105(2)(e) MCA, which states "a qualified member of the staff of the department of environmental quality, appointed by the department's director." The department has chosen Mr. Jon Dilliard as its appointee to fill the vacancy. Mr. Dilliard has supported the Council by attending several meetings over the years and is currently the Public Water Supply and Subdivisions Bureau Chief in the Permitting and Compliance Division.
- On December 17, 2003, the Governor appointed two new members to the Council due to the vacancies left by Mr. Robert Cottom, Dillon and Mr. Lee Leivo, Bigfork. The Council and the members of the Operator Certification program want to thank both Robert Cottom (from October 1991 to October 2003) and Lee Leivo (from January 1992 to June 2003) for their years of dedication to the Council. The two new members are Mr. Roger Skogen, City of Valier, who fulfills the qualifications for being a wastewater treatment plant operator and Mr. Tony Porrazzo, City

of Polson, who fulfills the qualifications for being a water treatment plant operator. Congratulations Roger Skogen and Tony Porrazzo!

The Council and the Operator Certification program would like to thank all water and wastewater operators throughout the state that were interested in serving on the Council and applied for the vacant positions.

Update on the Conversion of Drinking Water Treatment and Distribution Exams

The Montana Department of Environmental Quality has been working with engineering consultants, DEQ staff, and water operators throughout the state to develop criteria to convert our current water treatment and distribution examinations. Montana has developed a specific Needs-to-Know list in an effort to design and start implementing Montana prescriptive exams utilizing the Association of Boards of Certification's (ABC) services and item bank of questions. We have currently sent a request to ABC to review our Needs-to-Know, add our Montana specific supplemental questions, and review the exam specifications to develop our Montana water treatment and distribution exams. The following is list of water classifications: 1A, 2A, 3A, 4A, 1B, 2B, 3B, 2A3B, 3A3B, 4A4B, and 5A5B. The A classifications are water distribution and the B classifications are water treatment. Each separate water distribution exam and water treatment exam will have 100 questions each. The combination exams (2A3B, 3A3B, 4A4B) will have 150 questions each and the small system combination exam (5A5B) will only have 100 questions. This process is going smooth and the department is right on schedule. The goal is to complete the exams and revise the current study guides (if necessary) before the Spring School 2004.

PHOTO ID REQUIRED FOR EXAMINATIONS

Starting with the examinations given in Great Falls February 20, 2004, the Water Wastewater Operator Certification Program will require all applicants taking examinations to provide picture identification (driver's license or Montana State identification) when signing their names. This is being done to ensure that the correct person is signed up for and taking the proper examination for their water/wastewater system(s). If you have questions or concerns regarding this change, please contact Ms. Reta Therriault, Certification Technician at (406) 444-3434 or Ms. Jenny Chambers, Program Manager at (406) 444-2691.

Update On The Operator Reimbursement Program

Since the implementation of the Operator Reimbursement Program, 490 reimbursements in the amount of \$69,206.09 have been processed. The program hopes to increase the amount of reimbursements paid in fiscal year 2004. Now that the program is running smoothly, we are encouraging those requesting reimbursements to submit requests within 60 days of completion of the course or exam. We are still attempting to increase awareness of the program through articles, public speaking, and mailings.

In an attempt to increase use of the program, money has been allocated for special training. Training providers may use these funds to provide special speakers targeting operators of small water systems at a minimal cost to the operator. These will be pre-approved for training on a case-by-case basis. Dr. Patricia Meinhardt from the Center for Occupational and Environmental Health was the first speaker provided with these funds. Dr. Meinhardt presented **information on three security related topics at the 70th Annual Water School**. John McDunn, DEQ engineer, attended training for Disinfectant & Disinfection

Byproducts Rule so that he could provide training for the system operators on the rule. He has provided training in two sessions for a total of 36 people to date. Mr. McDunn will be conducting training at the Montana Rural Water System Conference in February also.

The reimbursement-tracking module has been designed and connected to an Oracle database by Ms. Chris Bristow of the DEQ IT staff. This module will help us coordinate information, simplify processing reimbursements, and expedite the claim process. In the future, further work on the reporting functions of the module will be done in order to insure accuracy.

This program will continue to evolve as it grows. Changes have been made to the forms with the hope that they will be easier and less time consuming to fill out. These forms are currently available through our office and will be available on our web page soon. As always if we can answer questions or send you information, please call us.

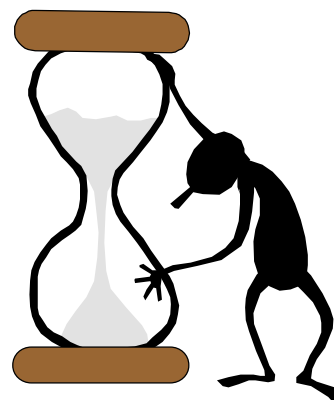
Program Manager	Jenny Chambers	444-2691
Applications & Exams.....	Reta Therriault	444-3434
CEC Coordinator.....	Ashley Eichhorn	444-4584
Operator Reimbursement... ..	Ruby Miller	444-0490
E-mail: rumiller@state.mt.us	Fax #	444-1374

Department of Environmental Quality
Community Service Bureaus
Water/Waste Water Operator Certification
PO Box 200901
Helena, MT 59620-0901

CEC NAGGINGS

(THAT YOU MAYBE SHOULDN'T IGNORE)

By now each of you should have received the CEC (continuing education credits) status reports, which were sent out in December. Remember these credits are due by May 31, 2004. This leaves only a few months to complete the requirements. There are several ways to obtain the needed CEC credits. You may attend an approved course (the METC calendar came out in December-look at courses January through May), complete an approved correspondence course (these are also listed in the METC calendar), or apply for a course to be approved by our CEC approval committee. Operators-in-training are not required to earn CEC's.



Application forms were mailed to existing and interested approved training providers on January 16th. Please note that these applications are due by April 1, 2004. Why not fill it out now and send it in before it slips your mind?

If there are any problems or updates needed on the CEC status reports, information on any of the credit options, or if additional ATP application forms wanted; simply contact Ashley Eichhorn, Water/Wastewater Operator Certification Technician at (406) 444-4584. I'm here to help!



Spring Water School for Operators

Montana Environmental Training Center (METC) and Montana Department of Environmental Quality/Public Water Supply Section will again be sponsoring two Spring Water Schools. This year we are trying something new and are not running the two schools simultaneously.

The first school will be held in Kalispell on March 17 - 19th, 2004. Review sessions will be offered in the evenings by Montana Rural Water Systems, Inc (MRWS). For more information regarding these Exam Prep sessions, please contact MRWS at 454-1151.

The second school will be held in Billings March 31 through April 2, 2004. Exam prep sessions will take place

concurrently with the regular Continuing Education Credit technical sessions.

The Spring School events are designed for both entry-level and experience operators and managers. Some topics that will be covered include: rule updates; operation and maintenance of your water system; water/wastewater tours; lagoon operations; safety and security concerns; and more topics. We hope that you will take full advantage of either location and maybe have the opportunity to learn something new or different. If you have questions regarding either of these schools, please call 444-4400 or METC at 771-4433. ■

Water and Wastewater Operator Certification Examinations Scheduled

By Reta Therriault, Certification Technician

The Montana Department of Environmental Quality (DEQ) has scheduled water and wastewater operator certification examinations in Billings, Great Falls, Havre, Helena, Kalispell, Miles City and Missoula. Examination preparation sessions will also be held in Kalispell and Billings. All Montana community and non-transient non-community public water and wastewater systems are required to have certified operators.

Operator examinations for all classes of public water supplies and public wastewater systems will be given in Kalispell on Saturday, March 20, from 8:30 a.m. to 12:30 p.m. Registration begins at 8:00 a.m. Water examination preparation sessions will be held at the Kalispell Wastewater Treatment Plant on March 17, 18 and 19 from 6:00 p.m. to 10:00 p.m. Wastewater examination preparation sessions will be held at the West Coast Kalispell Center at the same times. For more information about the Kalispell sessions, call the Montana Rural Water Systems at (406) 454-1155.

Operator examinations will be given in Billings, Great Falls, Havre, Helena, Miles City and Missoula on Satur-

day, April 3, from 8:30 a.m. to 12:30 p.m., with registration beginning at 8:00 a.m. There will be examination preparation sessions held in Billings on March 31, April 1 and April 2. For more Billings information, call the DEQ at (406) 444-2691. Persons planning to attend the examination preparation sessions should bring their study materials.

To register for the examination, please contact the DEQ's Water and Wastewater Operator Certification Office at (406) 444-3434. The deadline to submit applications and fees is 15 days before the examination. Study materials will be sent to applicants upon receipt of completed applications and fees. Additional study materials may be required for higher-level exams. Applications and more information about the operator certification program are available on the DEQ web site at www.state.mt.us.

The DEQ will make reasonable accommodations for persons with disabilities who wish to participate in these exams. If you require an accommodation, please contact the Operator Certification Office above no later than 5 p.m., March 15. ■

Operator Examination Notification

DEPARTMENT OF ENVIRONMENTAL QUALITY
1520 EAST SIXTH AVE
PERMITTING & COMPLIANCE DIVISION
WATER & WASTEWATER OPERATOR CERTIFICATION

METCALF BUILDING,
PO BOX 200901, HELENA MT
59620-0901
406/444-3434 – FAX: 406/444-1374

OPERATOR NAME: _____ OPERATOR #: _____
(Please print)

NAME OF SYSTEM OPERATED: _____ PWS#: _____

MAILING ADDRESS: _____

CITY: _____ ZIP CODE: _____ DAY TIME PHONE #: _____

CLASSIFICATION OF EXAM REGISTERING FOR: Class _____ Type _____

To register for one of the examinations on this form, you must send the following to the above address 15 days before the exam date:

1. A completed application for certification as a water or wastewater operator;
2. Application fees: \$70. for water and/or \$70. for wastewater
3. Examination fees: \$70. for water treatment, \$70. for water distribution (2A3B, 3A4B, 4AB, 5AB are combination exams and count as one exam) and/or \$70. for wastewater and;
4. A completed copy of this form and the fees for each examination.

OPERATOR CERTIFICATION EXAM PREP TRAINING, CEC's & DEQ EXAMINATIONS

NOTE: You must also contact the training provider to register for the training (additional fees may be charged)

Training Provider	Location	Training Date	Exam Date	Registration Deadline	(✓)
Montana Colony & Rural Water Systems (MRWS)*	Great Falls	01/14 – 15/04	01/16/04	01/01/04	
MRWS Conference *	Great Falls	02/18 – 20/04	02/20/04 afternoon	02/06/04	
Kalispell Spring School (METC / DEQ) MRWS Annual Operator Certification & Math Review	Kalispell	03/17 – 19/04	03/20/04	03/05/04	
Billings Spring School (METC / DEQ)	Billings	03/31/04 – 04/02/04	04/03/04	03/19/04	
METC Small Water/Wastewater Summer Certification School*	Missoula	05/19 – 20/04	05/21/04	05/07/04	
71 st Annual Fall Water School (METC/DEQ/MSU)	Bozeman	09/27 – 09/30/04	10/01/04	09/16/04	

*Only Class 4 and 5 water or Class 3 and 4 wastewater exams will be given

Please bring a photo ID with you to the exam – you will be asked for one.

DEQ SPRING EXAMINATIONS
Training offered at Billings and Kalispell

Examination Location	Exam Date	Exam Registration Deadline	(✓)
Billings	04/03/04	03/19/04	
Great Falls	04/03/04	03/19/04	
Havre	04/03/04	03/19/04	
Helena	04/03/04	03/19/04	
Kalispell	03/20/04	03/05/04	
Miles City	04/03/04	03/19/04	
Missoula	04/03/04	03/19/04	

The deadline to sign up for all examinations is 15 days before the examination date. To sign up for an examination, contact Reta Therriault at 406/444-3434 or rtherriault@state.mt.us for application information. An application is also available on the WWOc web site at <http://www.deq.state.mt.us/pcd/csb/Cert/index.asp>.

Class 4 and 5 water exams and Class 3 and 4 wastewater exams can be taken in a DEQ office in Helena, Kalispell or Billings by appointment. Contact Reta Therriault at 406/444-3434 or rtherriault@state.mt.us for application information.

Links to trainers telephone numbers and web sites:

1. Montana Environmental Training Center
406/771-4433
<http://www.msun.edu/grants/metc/>
2. Montana Rural Water Systems, Inc.
406/454-1151
www.mrws.org
3. Midwest Assistance Program
406/273-0410
www.map-inc.org
4. Montana Association of Water and Sewer Systems
406/273-3336
<http://www.nmclites.edu/grants/metc/!mawss.html>

Please bring a photo ID with you to the exam – you will be asked for one!

APPLICANTS PASSING EXAMINATIONS FOR FULL CERTIFICATION (CO) or OPERATOR-IN-TRAINING (OT) - JANUARY 2003 - MAY 2003

CLASS 1's

6311	AXTMAN, SETH	BOZEMAN	1A	OT
6277	LaMERE, VALARIE	MISSOULA	1A	CO
6310	LEMKE, TIM	MISSOULA	1A	CO
6312	RAHN, DUANE	BOZEMAN	1A	CO
6250	WAITE, MATTHEW	BILLINGS	1A	OT
6313	WORKMAN, MATT	BOZEMAN	1A	OT
6278	YONCE, CRAIG	MISSOULA	1A	CO
5141	MATHESON, BRIAN	CONRAD	1B	CO
6307	McINTOSH, SCOTT	GREAT FALLS	1B	OT
6250	WAITE, MATTHEW	BILLINGS	1B	OT
6316	BRUNER, HEIDY	THREE FORKS	1C	OT
6170	EDWARDS, RON	BIG SKY	1C	CO
6271	SULLIVAN, PIERCE	BUTTE	1C	OT
6272	THOMICH, JOHN	BUTTE	1C	OT

CLASS 2's

6285	NICKOLOFF, DAVID	CULBERTSON	2A	OT
6327	BEAR, MARVIN	EUREKA	2B	OT
6215	BROWN, GORDON	POPLAR	2B	OT
6139	LOSSMAN, FRED JR.	STEVENSVILLE	2B	CO
4726	MILLER, DANIEL	RONAN	2B	CO
6244	CAPPAERT, JOHN	POLSON	2A3B	CO
6123	FAUGHN, JOSHUA	HAMILTON	2A3B	CO
6129	JONES, VANCE	DILLON	2A	OT
6129	JONES, VANCE	DILLON	3B	CO
6208	PEDERSON, MICHAEL	SHELBY	2A3B	CO
6122	TUTTLE, IRVIN	HAMILTON	2A3B	CO

CLASS 3's

6327	BEAR, MARVIN	EUREKA	3A	OT
6139	LOSSMAN, FRED JR.	STEVENSVILLE	3A	CO
6295	READ, EDWARD	PABLO	3A	CO
6310	LEMKE, TIM	MISSOULA	3B	CO
6278	YONCE, CRAIG	MISSOULA	3B	CO
5672	FOGARTY, BILL	W YELLOWSTONE	3A4B	CO
6332	HOSKINS, DANIEL	W YELLOWSTONE	3A4B	CO
6262	LEE, JERRY	LEDGER	3A4B	CO
6255	MORIGEAU, CHARLES	PABLO	3A4B	CO
6335	ROBBINS, NATHANIEL	DARBY	3A4B	OT
6297	ROBERTS, CHARLES	BOZEMAN	3A4B	CO
6336	SCHEELE, RICH	DARBY	3A4B	OT
6289	SHULAR, BOBBIE	BLACK EAGLE	3A4B	CO
6338	SIBLEY, LON	ROOONDUP	3A4B	CO
3741	STEIGERS, TERRY	MISSOULA	3A4B	CO
6075	WELLENSTEIN, NIC	BIG SKY	3A4B	CO
6327	BEAR, MARVIN	EUREKA	3C	OT
6265	DRI FTWOOD, LELAND	CROW AGENCY	3C	OT
6262	LEE, JERRY	LEDGER	3C	CO
4681	MORRIS, WILLIAM	BROWNING	3C	CO
6338	SIBLEY, LON	ROOONDUP	3C	CO

CLASS 4's

6133	CLARK, JOHN	GERALDINE	4AB	CO
6345	CUMMINGS, TERRY	SILVER BOW	4AB	CO
6290	FOX, CLYDE	ASHLAND	4AB	CO
6173	GLABRETH, GREGORY	MISSOULA	4AB	OT
6287	GLADEAU, JAMES	NASHUA	4AB	CO
6258	HART, PHIL	LAVINA	4AB	CO
6169	JOKI, KRIS	ROBERTS	4AB	CO
6175	KEHLER, ARTHUR	HARRISON	4AB	CO
6318	LEEDS, GREGORY	BILLINGS	4AB	OT
6291	LITTLEHEAD, GEORGE JR.	ASHLAND	4AB	CO
6288	McGEE, JESS	MISSOULA	4AB	CO
6127	MIKKELSON, KEN	BILLINGS	4AB	CO
6309	MYERS, DALE	TROY	4AB	OT
6300	MYERS, LES	DARBY	4AB	CO
6179	STONE, KENNETH	MISSOULA	4AB	CO
6160	THOMPSON, LYLE	VICTOR	4AB	CO
6283	TOWNER, JIM	BOZEMAN	4AB	CO
4262	WALDNER, GEORGE	VALIER	4AB	CO
5061	WI EDER, RUSSELL	ARLEE	4AB	CO
6296	WOOD, GLENN	BIG SKY	4AB	CO
6281	HOFER, SAM	STANFORD	4C	OT
6206	HOUGARDY	BROADVIEW	4C	OT
6169	JOKI, KRIS	ROBERTS	4C	CO
6298	KAHL, JAMES	DARBY	4C	CO
6318	LEEDS, GREGORY	BILLINGS	4C	OT
6300	MYERS, LES	DARBY	4C	CO
6335	ROBBINS, NATHANIEL	DARBY	4C	OT
6336	SCHEELE, RICH	DARBY	4C	OT
6151	SIPE, THOMAS	FAIRVIEW	4C	CO
6179	STONE, KENNETH	MISSOULA	4C	CO

CLASS 5's

6269	DONNELLY, WILLIAM	MISSOULA	5AB	CO
6270	FALCONBURG, JERRY	EAST HELENA	5AB	CO
5627	HILL, STEVE	REED POINT	5AB	CO
6245	LONGMIRE, RICK	ELLISTON	5AB	CO
6212	LOTERBAUER, ORVIN	YELLOWSTONE	5AB	OT
6188	NUCCIO, KIMBERLY	ST IGNATIUS	5AB	CO
6328	OLTROGGE, ELI ZABETH	BOZEMAN	5AB	OT
6329	OLTROGGE, TERESA	FORSYTH	5AB	OT
6304	RUSS, CHARLES	STEVENSVILLE	5AB	CO
6334	TIBBITTS, LARRY	ST MARY	5AB	CO
6303	WOLFE, OLIVER	ST REGIS	5AB	CO

A = Water distribution Operator

B = Water Treatment Operator

C = Wastewater System Operator

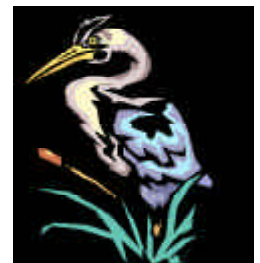
D = Industrial Wastewater System Operator

AB = Well Water Supply Operator

CO = Fully Certified Operator

OT = Operator-in-Training

Congratulations! The exams for certification require considerable time in study and preparation. Passing represents a lot of hard work and initiative on the part of the individual. Be sure to show appreciation to your water and wastewater operator for working hard to ensure that they are properly trained to carry your system!



DEQ Brings Enforcement Action Against a Montana Operator

*By Jenny Chambers, Operator Certification Program Manager
and*

Autumn Bahr, Enforcement Division

The Montana Department of Environmental Quality's Operator Certification Program and Enforcement Division have taken a formal administrative enforcement action against a certified water operator for alleged violations of the Montana Public Water Supply Laws (PWSL). The DEQ issued an Order of Reprimand to the certified water operator because reasonable care, judgment and application of the operator's knowledge and ability was not used in the performance of the operator's duties. This was the first formal enforcement action the DEQ has taken against a certified operator under the Montana Water Treatment Plant Operator Laws (Title 37, chapter 42, part 3, Montana Code Annotated (MCA)), and the administrative rules implementing the Operator Laws (Administrative Rules of Montana (ARM), Title 17, chapter 40, subchapter 2).

The MCA delegates administrative and enforcement authority to the DEQ Operator Laws to ensure safe operation and maintenance of public water supply and wastewater systems. Pursuant to ARM 17.40.214, if it is determined that an operator has practiced fraud or deception; has not used reasonable care, judgment, the application of the operator's knowledge or ability in the performance of the operator's duties; or the operator is incompetent or unable to properly perform the operator's duties, the DEQ may issue a written order imposing any of the following disciplinary actions: revocation of an operator's certificate; suspension of the right to operate under a certificate for up to one year; placing a certified operator on probation; or reprimand of a certified operator. If the DEQ does issue an order imposing any of the above disciplinary measures, an operator is entitled to request a hearing before the Board of Environmental Review by submitting a written request stating the reason for the appeal within 30 days after receipt of the DEQ's decision.

An Operator in Responsible Charge of a public water supply or wastewater system is subject to the operator laws, and therefore, is required to operate and maintain the system in accordance with the PWSL and administrative rules including payment of annual renewal certificate fees, and completion of continuing education credits. Failure to do so may be cause for implementing any of the disciplinary measures set forth previously.

The DEQ offers technical assistance with questions about the operator laws and the corresponding rules. Please contact Jenny Chambers at (406) 444-2691 or jchambers@state.mt.us. Copies of the operator laws and corresponding rules are available on the internet at the operator certification website: www.deq.state.mt.us/pcd/csb/Cert/LawsRules.asp or by request from the DEQ. ■

Chemical and Radiological Outreach – New Things Happening...Have You Noticed?

By: Andrea Vickory
Water Quality Specialist

Over the past year or so the Public Water Supply Section has been trying new ways of outreach to Public Water Supply Systems and their operators to better serve them. We hoped this would help in the long run to eliminate potential enforcement issues, improve service to the systems and open lines of communication.

The following are just some of the few new ideas we have been trying:

- **Inventory Update:** We have contacted all the systems and provided a listing of their system's inventory information and asked for corrections if they noticed any inconsistencies. This was a great suggestion and we have had numerous changes and responses submitted to the PWSS. Since this seemed to be effective, we have since developed an easier inventory update form. This new inventory update form is for the system to use in the event that facilities change, contact names change, and/or addresses change or activity status changes. A copy of the form can be accessed on our DEQ Public Water Supply website www.deq.state.mt.us/pcd/csb/pws/index.asp or by calling 444-2429 or 444-3358.
- **Reminder Postcards:** Monitoring reminder postcards were tried and succeeded. The mere idea of something other than letter size paper was an attention getter. Operators and systems responded by sampling early and avoiding potential monitoring noncompliance. Great idea, (not one we claim ourselves, but submitted to us). Seasonal systems were targeted also with the postcards prior to normal summer shut down.
- **Entry Point Labels:** Entry point labels were provided to all systems. From our now updated

and cleaned up inventory we were able to produce entry point labels for the system operators to use on the sample bottles as they go to the lab. The entry point labels list the Public Water Supply name and ID number and also gives the location (entry point identification) of where the sample was collected. For example, information included on the labels is: EP502 and Common Header for Well 1 & 2. We hoped for a better response on this, but it is a new idea and will take some getting used to. With this information we are able to properly credit the system for the sample collected.

- **Electronic Data Interchange:** Electronic data interchange (EDI) has had a full year of trial and proved to be a time saver and a sure way for systems to report to us. EDI takes the sample report from the lab and delivers it into our database electronically. A lot goes on behind the scene here, but that is the basic idea. As a result of the reminder postcards and the systems that utilized the lab using EDI, less than twenty systems responded to PWS with missing sample reports. When researched, the reason the reports did not make it to us was due to improper completion of the lab paperwork by the sampler. We took the time to personally contact most of these systems and hope that we have educated them on the correct paperwork procedure at the lab.

EDI is in progress with a second lab and two more are targeted to come onboard February or March 2004. For EDI to be a success, entry point labels have to be on the sample bottles for the lab to use in their report. Without this information the report simply will not be reported to us.

- **Radionuclide:** Radionuclide schedules and grandfathering took off this year. We used the postcards to remind Community systems and

Chemical and Radiological Outreach - *continued*

worked through grandfathering. Schedules for grandfathering systems were then set for 3, 6, and 9 years starting in 2008.

- **Monitoring Schedule:** A new monitoring schedule format is being tried. We are now able to generate schedules faster for the systems, provide inventory update forms and include entry point labels more easily. For copies of your monitoring schedule go to www.deq.state.mt.us/pcd/csb/pws/MonitoringSchedules.asp

- **Asbestos Monitoring Waivers:** We have been trying to update our information regarding asbestos concrete pipe in the distribution systems and the applicability of an asbestos monitoring waivers. We sent out sample reminders postcards and asked that systems reply by completing a waiver request form. This waiver request form may also be found on the DEQ website.

*SO, AS YOU CAN SEE,
we have been very busy brainstorming and producing
efforts that we think will help the systems communicate to
us and with the reporting process. Thanks to the
operators for their efforts in helping this
become a success.*

Fixing The Y2K Glitch

*By Martin Holt, DEQ Environmental Specialist
(Underground Storage Tank Program)*

Magpie Gulch was pretty wrecked after the fires in 2000. Most of the vegetation along the creek burned away, exposing its banks and destroying ancient shrubs that had grown into trees along Magpie Creek at the foot of the Big Belt Mountains. Gone were the sedges, coyote willow and red osier dogwood. Gone were the junipers that exploded in hot flames blasting up into the pines and firs along dry gulches and into the foothills and forests at higher and steeper elevations. Gone was the protective cover for birds and small animals. In its place was a wasteland of charred and blackened stream sides, meadows and foothills.

Fewer than twenty pines and firs remained alive on our seven-acre lot. One of them was an ancient ponderosa that was severely burned but it had survival signs that we attended, watering it constantly in August and September to mitigate the effect of drought and fire damage. Most of the trees in the area were about 110 years old, according to the growth rings. This grandfather pine was twice the girth of any of the other trees on the place, so we assume that it is fifty to one hundred years older than its mates. Magpie Creek was undercutting the bank on which Grandfather Pine grew. The vegetation that had been resisting erosion was burned away. Heavy spring runoff could topple the old tree, whether it survived the fire or not.

I talked with Alan McNeal of McNeal Resources. His job is streambed restoration. "You want to slow down the flow of water," he said. "The noisier the stream is, the more it is being slowed down." His methodology for slowing down the flow of the water is to install flow control structures in the streambed called sedimentation weirs and other weirs that create plunge pools, made of stones small enough to be moved and placed by hand.

Sedimentation weirs are low rock structures that angle upstream from the bank at a ten or fifteen degree angle and are about twelve feet long. To construct a sedimentation weir, start with two or three footing stones dug into

the bank that is to be protected. These footing stones can be fairly flat, but they need to key into the bank and into the stream bottom. They provide a base for the rest of the sedimentation weir to push against and act as a skirt for running water to slide over, resisting erosion at the point where the weir interfaces with the bottom of the creek. The first layer of stones is seated into the gravelly or stony bottom of the creek. A second layer is set in upstream of the first layer, and may be a bit taller than the first layer. A third layer of stones is worked into the low spots between the first two layers, keying into the lower layers. It is similar to setting a dry stacked stone wall on the ground. The stones in the weir will be subject to the constant pressure of the creek and are occasionally exposed to flooding water and the debris it carries with it, so they need to be well bedded. An additional layer or two of stone may be necessary to bring the surface of the



Fixing The Y2K Glitch - *continued*

weir high enough that it just breaks the surface of the stream during normal flow.

I put sedimentation weirs every six feet or so along the toe of the cut bank which I was trying to save. Some of them were only a few feet long, using a dozen football-sized stones. Others were longer, but the idea is to use material that is easy for a single person to lift, haul and stack in the stream.

Magpie Creek is pretty small, so I was able to get around in the creek with knee-high rubber boots. Larger, deeper streams may require fisherman's hip boots to avoid wet feet. A pair of long cuffed rubberized gloves helps keep hands warm and dry. Get a heavy-duty pair with gritty stuff embedded in the rubber at the hands. This helps grip the stones. Stone becomes much more slippery when wet. Some gloves have a bootie that extends the length of the cuff above the elbow with elastic to close the open-end of the glove so that water doesn't just run in at the open cuff.

Two or three tools are helpful. A pointed steel shovel or garden fork will do most of what you need. Use one with a straight blade for digging rather than the trenching type. A five or six foot digging bar is a good tool for any kind of rock work. It helps when digging footing stones into the stream, and for moving stone around on land. A short handled camp shovel is nice for working in places where there is quite a bit of brush overhanging the working area. It also works nicely as a hoe for dragging stones into place under water. A tape measure, or even a yardstick, helps when deciding if a stone will fit before you set it.

Alan McNeal impressed on me that the structures I would be building would be subject to the constant action of flowing water. Water would try to under-cut the stones set in the stream bottom from either upstream or downstream. How stones are laid modifies behavior of water, focusing or deflecting its energy.

I measured the distance from the point in the stream just beyond Grandfather Pine to a point down stream where the fall seemed to level out and the creek began to meander. It was about thirty feet. Using a level and a tape measure, I sighted a level line from the low point in the

creek to a point at the base of my last sedimentation weir. The total amount of fall was about forty inches. With eight inches of fall, per plunge pool, I would need six plunge structures with about six feet of pool. I started building plunge structures at the upstream position.

Building plunge pools is a much more artistic experience than building sedimentation weirs. The structure that creates the plunge pool is anchored into both sides of the stream bank by digging large, flattish footing stones into the bank and into the stream bed. They should key into the bank, in a way similar to the first few stones of the sedimentation weir. The structure that creates the plunge is a diversion dam that turns the flow of water toward the middle of the stream from each side. Where the water spills over the weir, it makes a kind of spillway. The purpose of the plunge is to create turbulence, slowing the flow of water. Remember the axiom, the greater the disruption of water the slower it flows (turbulence equals noise.) More noise is better. After the plunge, a pool trails down stream to the next plunge and pool, and plunge and pool, etc.

Once the footing and anchorage for the plunge weir is constructed, the mass of the structure can be laid up. If built correctly, the pressure of water will drive the anchoring stones tighter into the banks to keep them in place. These plunge weirs are mostly mass. Use lots of stone behind the footing and anchor stones to spread the load along the upstream bank for a couple of feet. As the weir extends into the stream, it has to tuck behind the footing stones set into the streambed. The second layer can be larger stones that tie the footers to the first layer of upstream stones. The third layer should be even farther up stream and the fourth layer should span the third layer and bond the second layer. It is like dry stacking a freestanding wall, except that entropy is from the upstream side rather than from the top (gravity). Underwater gravity is displaced by the bouyant force of water, so the interlocking nature of the construction is more important than in a freestanding wall.

The last few stones in the plunge weir roll the water over into the spill stream. They should be large enough to stay in place with the pressure of water. Angle these stones

Fixing The Y2K Glitch - *continued*

toward the center of the stream forcing the flow towards the middle, and actually roll the water over on itself. This creates more turbulence, noise and all good things relative to the purpose. Each side of the plunge weir requires about three stones arranged so that the top stone is supported against the flow of water. The top stone should tip in a couple of directions to turn the stream inward at the spillway. This process is repeated every five or six feet along the stream with six or eight inches of fall at each plunge. If you have done it right, the last plunge will tail out such that the streambed quiets down and proceeds in a more meandering course for a distance.

This process oxygenates the water and creates gathering basins for food. Habitat is increased, providing feeding stations and hideouts. None of the lifts are so tall that it inhibits movement of fish up and down stream. The eddying currents along edges of plunge pools allow some sedimentation and encourage growth of water plants that help stabilize adjacent banks.

My sedimentation weirs have silted in completely twice, and I have added a layer of stones on top each time to keep the sedimentation process going. I supplemented the stonework in the streambed with a snarl of twigs and sticks laid up against the bank. Weeds and bushes are beginning to grow up through this net of branches, creating a brushy tangle protecting the cut bank at the base of Grandfather Pine. The creek itself is slowly moving away from the cut bank. Only during high water in spring does it threaten the bank at the base of Grandfather Pine.

Three and a half years have elapsed since the major fire damage of Y2K. Some trees burned in the fire sent out new green needles for awhile, finally turning to orange in the face of continued drought and fire damage. New grass emerged from blackened mats, and in the second



year sweet clover dominated the landscape with yellow flowers. Canadian thistles pretty much took over parts of the bank along Magpie Creek where snow berry and dog bane had been dominant. Chokecherry, red osier dogwood and water birch are showing up in their old locations, and cottonwoods are sending up shoots everywhere within fifty feet of Magpie Creek. Especially luxurious is a stretch of creek side where the babbling brook is particularly noisy, barking and grumbling down through a network of moss covered stones, and splashing into small pools surrounded by sedges and coyote willows. Minnows dart out of shadows under the bank, progeny of the spawning rainbow trout who come up from Canyon Ferry Lake. They have access to the upstream portions of the creek, jumping and wriggling through the spill of water at the head of each plunge pool. Grandfather Pine watches over them as it has for a couple of hundred years. ■



Amy Mackenzie Joins The Public Water Supply Section



Amy MacKenzie has joined the Drinking Water Security Program for the Montana Department of Environmental Quality - Public Water Supply Section under the Homeland Security Act. Amy previously was the Program Manager for the Public Accommodations and Vector Control (West Nile Virus) Program at the Montana Department of Public Health and Human Service.

Amy has a BS in Microbiology from Montana State University. She began working in the environmental health field shortly after Earth Day. Some of you may remember that she worked for Montana Testing Laboratories as the Director of the Water Lab back in the 1970's. This was the same time that the EPA was born. Amy worked with water and wastewater systems throughout the state as they began to work within a framework of sampling schedules and permits. She then moved on to EOS, the Great Falls WWTP and became a certified water/distribution operator. In 1987 she became a Registered Sanitarian and worked for Cascade County, Yellowstone County, Lewis & Clark County and the State of Montana. She also has worked for the State Environmental Laboratory and the East Helena Lead Abatement Program.

Amy has served on the Montana Environmental Training Center Advisory Council, is a member of the National Environmental Health Association and on the Board of Directors of the Montana Environmental Health Association.

Amy will be handling the Vulnerability Assessments/Emergency Response Plans and the Technical Assistance contract with HDR Engineering for the Public Water Supply Section. Amy can be reached by calling 406-444-5360, or by e-mail at amackenzie@state.mt.us.

Thanks!

Vulnerability Assessments

By: Amy Mackenzie – Water Quality Specialist

June 30, 2004 is coming soon!

Vulnerability Assessments (VA's) are due to EPA Headquarters before June 30, 2004. As you know, the Safe Drinking Water Act requires that each community water system serving a population of greater than 3,300 persons to conduct an assessment of the vulnerability of its system to a terrorist attack or other intentional acts intended to substantially disrupt the ability of the system to provide a safe and reliable supply of drinking water. After submitting the VA, the system must complete the Emergency Response Plan within 6 months and submit certification to EPA Headquarters.

Each Community Water System should have a copy of the Security & Emergency Management System (SEMS) CD that was developed by the National Rural Water Association or you can choose the Ram-W or the VSAT programs. By this time you should be familiar with SEMS and have begun putting the VA together.

If you are having problems and feel that you need some technical assistance, please call as soon as possible to get on the schedule. Technical assistance is available from:

1. DEQ
Amy MacKenzie at (406) 444-5360 or
John Camden at (406) 444-4071
2. Montana Rural Water
Donna Wadsworth at (406) 454-1151
3. HDR Engineering
Amanda McInnis at (406) 532-2200



Once the VA is complete, EPA requires that the community water system submit certification to EPA that the VA has been conducted and submit a copy of the VA to the EPA.

Please submit a copy of the certification to:

Amy MacKenzie
DEQ/PWSS
PO Box 200901
Helena, MT 59620-0901

**DO NOT SEND THE
VULNERABILITY ASSESSMENT TO DEQ**

Thanks!

Water Security and You

Local drinking water and wastewater systems may be targets for terrorists and other would-be criminals wishing to disrupt and cause harm to your community water supplies or wastewater facilities.

Because utilities are often located in isolated areas, drinking water sources and wastewater collection systems may cover large areas that are difficult to secure and patrol. Residents can help by noticing and reporting any suspicious activity in and around local water utilities. Any residents interested in protecting their water resources and community can join together with law enforcement, neighborhood watch groups, water suppliers, wastewater operators and other local public health officials. If you witness suspicious activities, report them to your local law enforcement authorities.

Examples of suspicious activity might include:

- people dumping or discharging material in a water reservoir;
- people climbing or cutting a utility fence;
- unidentified truck or car parked or loitering near waterway or facilities for no apparent reason;
- suspicious opening or tampering with manhole covers, buildings, or equipment;
- people climbing up or on top of water tanks;
- people photographing or videotaping utility facilities, structures or equipment; or
- strangers hanging around locks or gates.



Be observant. Notice and report suspicious activity around your local water utility.

Image Copyright AWWA

Do not confront strangers. Instead, report suspicious activities to local authorities. When reporting an incident:

- state the nature of the incident;
- identify yourself and your location;
- identify the location of the activity;
- describe any vehicle involved (color, make, model, plate #);
- describe the participants (how many, sex, race, color of hair, height, weight, clothing).

For emergencies, dial 911 or other local emergency numbers.

For more information on water security visit:
www.epa.gov/safewater/security ■



Spring is on its way...

hopefully just around the corner!