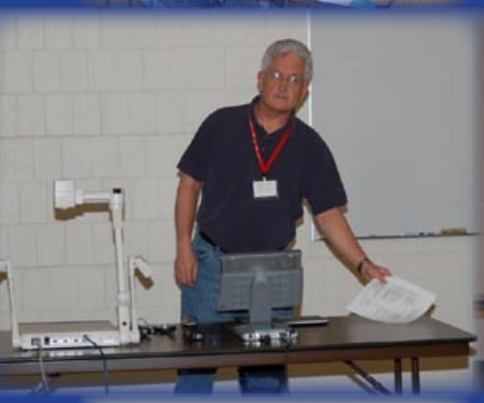
NORTH DAKOTA WATER AND POLLUTION CONTROL CONFERENCE

NDWPCC



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Editors
Kim Rudningen
Katie Luther

Assistant Editor
Darin Billing

Business Manager
Sharmaine Stoppler

Contributing Authors
Drinking Water Program Staff
Operator Training and Inspections Program Staff
Audrey Boe-Olsen, Midwest Assistance Program
Eric Volk and Tom Seig, North Dakota Rural Water Systems Association

Members of the Conference are indebted to those members and others who have contributed articles and other materials for this publication.

OFFICIAL BULLETIN

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Spring Issue **Established 1935**

VOL. 92 **JANUARY 2007-JUNE 2007** **NOS. 7-12**

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The objectives of this Conference shall be: the advancement of the knowledge of design, construction, operation and management of water and wastewater systems; the promotion and encouragement, through annual meetings or otherwise, of an exchange of information and experience among its membership; the promotion and encouragement of the protection of public health and improved environment through the construction and efficient operation of water supply and wastewater treatment facilities; and the promotion of water and wastewater system operator education and certification programs.

Article II of the Constitution of the
North Dakota Water and Pollution Control Conference

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ON THE COVER: 2007 Operator Training Class Highlights
This year provided for excellent teamwork and presentations from Water Quality, Drinking Water and Operator Training Staff. We were also fortunate to have some outside presenters including individuals from the City of Bismarck, Midwest Assistance Program and North Dakota Rural Water.

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Minutes
NDWPCC Joint Board Meeting
January 31, 2007

Mandan, ND

A meeting of the Joint Board of Directors of the North Dakota Water and Pollution Control Conference (NDWPCC), North Dakota Water Environment Association (NDWEA), North Dakota Chapter of the American Public Works Association (NDCAPWA) and North Dakota Section of the American Water Works Association (NDAWWA) was held on January 31, 2007, in the Cutty Sark Room of the Seven Seas Inn. The meeting was called to order at 10:30 a.m. by NDWPCC President Mark Blonigen. Copies of the agenda, along with copies of several agenda items, were provided to those in attendance. The following board members and guests were present: Chuck Abel, Lisa Ansley, Sarah Baehurst, Mark Blonigen, Brian Blotsky, Gary Bracht, Mike Brisben, David Bruschwein, Kevin Bucholz, Eric Dodds, Greg Ficek, Duane Friesz, Bill Gefroh, Rick Gillund, Dale Heinert, Steve Himmelspach, Brett Jochim, David Johnson, Miranda Kleven, Katie Luther, Seth Lynne, Karla Olson, Tim Paustian, Skip Rapp, Rod Reetz, Rusten Roteliuk, Kim Rudningen, Terry Rust, Darin Schaeffer, Dean Sletten, Hazel Sletten, Shawn Soehren, Larry Thelen and Richard Wanner.

President Blonigen entertained a motion to dispense with the reading of the minutes from the October 25, 2006 Joint Board Meeting and the October 27, 2006 Business Luncheon mailed to each board member prior to the January 31, 2007 meeting. President Blonigen noted that an amended copy of the October 27, 2006 minutes was included in the handouts. Terry Rust moved to dispense with the reading of the minutes and approve them as written. Rick Gillund seconded. There was no further discussion and the motion carried.

President Blonigen called for the Treasurer's Report. Mike Brisben reviewed the Conference's profit and loss report for the first quarter of fiscal year 2007. Net profits from October 1, 2006 through December 31, 2006 were $8,170.09, with total Conference assets (less the NDWEA share) equaling $50,051.11. Chuck Abel moved to approve the report as presented. Rod Reetz seconded. There was no discussion and the motion carried.

President Blonigen called for old business. Mr. Brisben reported on the NDWPCC and the Water Environment Federation Technical Exhibition and Conference (WEFTEC) schedules from 2007 through 2011, indicating there were no conflicts between the two meetings. Respective sites and dates are as follows:

Fargo, October 24-26, 2007
San Diego, October 13-17, 2007
Bismarck, October 8-10, 2008
Chicago, October 18-22, 2008
Minot, October 20-22, 2009
Orlando, October 10-14, 2009
Fargo, October 12-14, 2010
New Orleans, October 2-6, 2010
Bismarck, October 11-13, 2011
Los Angeles, October 15-19, 2011

Miranda Kleven opened discussion regarding Grand Forks as an NDWPCC host site. Mr. Brisben indicated that Hazel Sletten and Joe Ferguson had volunteered to work with the Alerus Center and Canad Inn to further discuss the Grand Forks proposal.

Continuing with old business, Mr. Brisben reported that five financial institutions were contacted regarding the Conference's bank accounts, with Gate City Bank and BNC National Bank providing the best options. Terry Rust moved that Mr. Brisben be given the authority to choose which bank the accounts are switched to. Skip Rapp seconded. There was no discussion, and the motion carried.

Lisa Ansley next reported on the executive committee's research regarding amending the life membership requirement in the Conference bylaws. Ms. Ansley recommended similar language waiving the age requirement for exemplary service be added. Larry Thelen continued discussion, noting the variation of the Conference year. Mr. Thelen indicated that

he and Jack Long were willing to serve on a committee to review and update the constitution and by-laws. Ms. Ansley volunteered to also serve as a committee member. President Blonigen asked if there was a motion. Larry Thelen so moved, Terry Rust seconded, and the motion carried.

The next order of old business called for discussion on hospitality rooms at the Fargo Conference. Questions were raised regarding liability, dwindling numbers of hospitality rooms and other options. Mr. Rust recommended a wait-and-see approach, while Mr. Reetz suggested the vendors handle the issue themselves. Mr. Reetz also questioned the need for hospitality rooms, stating that his company did not participate due to the liability issue as well as other company policies. Further discussion suggested a survey be included in the sponsor and tabletop display notices. Other options included a games/casino night at the conference site, a bus trip to Playmakers or the House of Rock and excursions to nearby casinos at Mahnomen and Hankinson. Mr. Gillund noted that conversations he had with Jack Hendrickson indicated Mr. Hendrickson would more than likely not sponsor a hospitality room in Fargo. Mr. Gillund offered to contact Mr. Hendrickson and pursue a joint function. Further discussion was tabled until the May 2007 meeting with President Blonigen asking Mr. Gillund to get back to Mr. Brisben.

President Blonigen next asked for any other old business. Hearing none, President Blonigen called for new business. Mr. Brisben reported on Conference numbers from 2006. The number of attendees totaled 311. Two hundred four (204) members and guests attended the banquet and 200 attended the Wednesday night buffet. Lunches totaled 144, 190 and 112, respectively. Two hundred fifty-three (253) people attended the Thursday breakfast buffet sponsored by the 47 vendors who participated in the tabletop display program.

President Blonigen announced the 2007 luncheon schedule and noted that he would be responsible for the official welcome. The luncheon business meetings are as follows:

Wednesday, October 24, 2007-APWA
Thursday, October 25, 2007 -AWWA
Friday, October 26, 2007 -WEA/Conference

Mr. Brisben reported that House Bill 1074, which relates to special event promoters, was being tracked. If passed, the bill would change the requirements for sales tax permit numbers during the tabletop display program.

Mr. Brisben next reported on a Conflict of Interest Policy recommended by the IRS for non-profit organizations. Mr. Thelen indicated the sample policy provided by Mr. Brisben could be included as part of the constitution and bylaws review.

Next, President Blonigen asked for volunteers for the Auditing Committee, with Lisa Ansley, Chuck Abel and Terry Rust being appointed.

Next, Katie Luther and Kim Rudningen were introduced as co-editors of the *Official Bulletin*. Ms. Luther provided a spreadsheet to those in attendance, depicting printing costs, mailing costs and other cost saving options. Mr. Rapp suggested providing electronic copies and/or reducing the number of issues mailed to each facility as another savings option. Bill Gefroh also liked the idea of an electronic copy. Mr. Rust noted the quality of the *Official Bulletin* reflected the image of the organization and should not be compromised. Ms. Luther recommended the purchase of two copies of InDesign or PageMaker 7.0 software to help improve publishing capabilities. Ms. Luther noted that even though InDesign is more costly at $700 per copy, it is more sophisticated and will communicate better with the printer's software. Rod Reetz moved to purchase two copies. Terry Rust seconded. The motion carried.

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Mr. Thelen indicated the $10.00 membership fee included receiving the *Official Bulletin*, but that the North Dakota Department of Health would check the mailing list to determine if fewer issues can be sent per Mr. Rapp's suggestion. Mr. Reetz recommended increasing advertising fees if costs remain an issue. President Blonigen asked if there were any objections to the Health Department making the decisions on paper quality, printing costs and any other *Official Bulletin* expenses. Lisa Ansley moved that Ms. Luther and Ms. Rudningen have the authority to make publishing decisions. Miranda Kleven seconded. Mr. Abel recommended that they err on the side of better quality rather than cost. There was no further discussion, and the motion carried.

Next, payment to the Joint Boards was briefly discussed and tabled until after the Bylaws Committee has completed their review and made recommendations on possible changes to the Conference fiscal year.

The last item of new business was a request that board members provide ideas on topics and presenters for the Fargo Conference. Eric Dodds volunteered the NDSU design team for a presentation on the WEFTEC design competition. President Blonigen asked that banquet expenses be complimentary for the design team if they present. Mr. Dodds will report further on the design team presentation at the May 2007 meeting. David Bruschwein indicated that the NDAWWA would again provide a motivational speaker and topics for one day of the drinking water sessions. Brett Jochim suggested topics, such as the Riverdale Membrane Filtration Project, Bismarck Horizontal Collection Well Project and Mandan's Water and Wastewater Treatment and Distribution Master Plan. Tim Paustian noted that several Fargo projects might be of interest. Mr. Rust recommended we include topics on water issues such as the Energy and Environmental Research Center's (EERC) geological work on the drought, water reuse issues and pitfalls and transfer of water to eastern North Dakota. Mr. Rust also requested that Gary Bracht and his staff continue to provide updates on the stormwater rule and industrial pretreatment. President Blonigen noted that the City of Fargo and Casselton Ethanol Plant wastewater project may be of interest. Dave Johnson recommended the Red River Valley Water Supply Project as a topic. Mr. Brisben noted that some ideas from 2006 such as the Medina Arsenic Study, Devils Lake Water Plant, Bismarck Sludge Storage Facility and the Mandan Fuel Spill could be revisited. Mr. Rust also suggested that the Devils Lake Outlet would be a good topic. President Blonigen asked that Mr. Brisben be contacted with ideas for other topics and/or when topics and presenters are confirmed.

President Blonigen tabled further discussion on topics and called for any other new business. Hearing none, President Blonigen called for a motion to adjourn. Rod Reetz so moved, and Skip Rapp seconded. The meeting adjourned at 11:35 a.m.

The NDWPCC can be thanked for the refreshments and noon luncheon.

Respectfully submitted,

Mike Brisben
Secretary/Treasurer

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Minutes
North Dakota Water Environment Association
January 31, 2007

Executive Committee Meeting

The Executive Committee for the North Dakota Water Environment Association (NDWEA) met at the Seven Seas in Mandan on January 31, 2007. Present were President Richard Wanner, Vice President Seth Lynne, President-Elect Eric Dodds, Past President Gary Bracht, Director Rod Reetz, Professional Wastewater Operations Representative Steve Himmelspach and Secretary/Treasurer Bill Gefroh. Also attending were Operations and Safety Committee members Terry Rust and Skip Rapp.

The meeting was called to order by President Wanner at 12:20 p.m. The minutes of the meeting held on June 8, 2006, were distributed via e-mail to the NDWEA Executive Committee members or by paper copy to the NDWEA members present at the meeting who did not receive the minutes by email. President Wanner requested a motion to dispense with the reading of the minutes and approve the minutes as distributed. Rod Reetz so moved, and Terry Rust seconded the motion. There was no discussion, and the motion carried.

Bill Gefroh then presented the Treasurer's Report, which reviewed in detail all the receipts and expenses from October 1, 2006 to December 31, 2006. The NDWEA net worth, as recorded in the report, was $10,109.97, as compared to $9,843.71 last year at this time. President Wanner requested a motion to approve the report as presented. Gary Bracht so moved, and Seth Lynne seconded the motion. There was no further discussion, and the motion carried. Bill Gefroh reported that the current NDWEA membership is at 107, compared to 96 this time last year. Membership renewals from the 2006 annual conference were not included in this total.

Old Business:
Since the selection of the NDWEA incoming director was not made at the 2006 annual meeting, the appointment of the vacant director was done at this meeting in accordance with the NDWEA Constitution and Bylaws, Section 8.7.4. President Wanner requested that the NDWEA Executive Committee approve Tom Welle as the incoming director. Gary Bracht so moved, and Steve Himmelspach seconded the motion; the motion carried.

New Business:
Potential topics and speakers were discussed for the 2007 North Dakota Water and Pollution Control Conference (NDWPCC). A number of topics were suggested such as: wastewater odor control; fats, oil and grease control; storm water rule update; transition planning & cooperative agreement for water utilities; utility financing and rates; wastewater reuse; biosolids rules and regulations; and a panel discussion on troubleshooting lagoons. Committee members will further investigate the topics and determine the availability and willingness of the suggested speakers and will report their findings at the next NDWEA meeting in May 2007.

The NDWEA will continue its support for the North Dakota Science Fair by providing awards and judges. A plaque and a $75 award will be presented to the best water quality project for both the junior and senior divisions. Up to $1,000 will also be provided for travel expenses for one student and his or her teacher to compete nationally at the Stockholm Junior Water Prize competition in Phoenix, Arizona, June 21-23, 2007. NDWEA members were solicited by email to be judges for the 2007 science fair. The names of the volunteers were forwarded to Frank Fish, North Dakota Science Fair Awards Coordinator, and Marcus Friskop, North Dakota Science Fair Events Coordinator.

NDWEA Committee Members discussed the educational support for 2007. Eric Dodds made a motion that NDWEA provide:

- $500 to the Gateway to Science in Bismarck
- $500 to the River Keepers in Fargo
- $100 to the Water Environment Research Foundation
- $300 for science fair plaques and awards

- $1000 to be used for transportation for a science fair student and teacher to compete for the national Stockholm Junior Water Prize
- $500 to the NDSU Student Chapter activity fund to be used for expenses incurred for attending the 2007 WEFTEC (Water Environment Federation Technical Exhibition and Conference) in Chicago, Illinois, to participate in the student design competition
- $750 from WEF (Water Environment Federation) to NDWEA for the design competition award, to be transferred to the NDSU Student Chapter activity fund
- $100 to the WEF Young Professional Summit

Steve Himmelspach seconded the motion, and the motion carried.

In 2007, the Awards Committee would like to present the Burke Award, at the annual NDWPCC. The Burke Award is a WEF safety award presented every three years to a facility or community. The facility is required to apply for this award. Included with the Burke Award plaque is a cash prize of $100 for the purchase of equipment or training material for the facility's safety program. Bill Gefroh was directed to solicit applications from the NDWEA membership in June 2007.

There was some discussion on presenting the Select Society of Sanitary Sludge Shovels Award in 2007 to several NDWEA members. This award has not been presented since 2002. Awards Chair Skip Rapp will further investigate presenting this award.

There was some discussion on the Quarter Century Operator Club award. Starting in 2007, NDWEA will have this information and applications available at the tabletop display at the annual NDWPCC. Members who meet the criteria will be encouraged to apply to WEF for this award. The yearly deadline for getting applications to WEF is July 1.

With no further business, the meeting adjourned at 2:10 p.m.

Respectfully submitted,

Bill Gefroh

Jamestown Students Stencil Storm Drains

Jamestown Middle School students will spray paint "Keep it Clean – Drains to River" messages on storm drains in Jamestown, according to Derrick Placek, environmental scientist with the North Dakota Department of Health. The goal of the stenciling project is to remind residents of the importance of protecting water quality.

Storm water is not filtered through a treatment plant. Instead, storm water runs down street gutters and into drains that carry the runoff into nearby water bodies. Pollutants like oil, paint, yard waste and other trash can be carried to rivers and lakes, spoiling them for people and wildlife.

"Keep it clean — Drains to River"

"Sometimes spray painting is more than graffiti – it can be a public service," Placek said. "By painting the messages, the students are alerting the public that only storm water belongs in the drains. The messages will remind Jamestown residents that they play an important role in protecting North Dakota's water resources."

The Jamestown Middle School students have coordinated with city officials to stencil specific storm drains and catch basins following strict safety guidelines. The students also will clean up litter near the drains and record what they find. The stenciling project is supported by the community of Jamestown, the North Dakota Department of Health and the Jamestown Wal-Mart Store, which donated supplies for the project.

For more information about storm drain stenciling, contact your local storm water coordinator or Derrick Placek, North Dakota Department of Health, at 701-328-5244.

Standard Operating Procedures for Small Community Water Systems

Audrey Boe Olsen, Resource Development Advisor, Midwest Assistance Program, Inc.

Introduction: A Standard Operating Procedures (SOP) manual has been developed for small community water systems in North Dakota by Midwest Assistance Program (MAP) under contract with the North Dakota Department of Health (NDDH). A session on the SOP manual was presented during water operator training classes earlier this spring.

This standard operating procedures manual is intended to assist community water systems to meet the technical capacity requirements of the Safe Drinking Water Act (SDWA) Amendments of 1996. While it was designed for the very small water systems (defined by the Environmental Protection Agency as one serving 25 to 500 persons), the manual has applicability for small water systems (defined as one serving 501-3,300 persons) as well as some larger systems. The NDDH provided a copy of the SOP manual to 109 systems (serving a population of 10,000 persons or less) attending the 2007 operator training sessions.

According to the SDWA Amendments, capacity refers to a water system's ability to consistently provide safe drinking water to all customers. To do this, a water system must have the technical abilities, managerial skills and financial resources to meet state and federal drinking water regulations. The SDWA Amendments require each state with primacy for enforcement of the regulations to establish a capacity development program. Capacity development is an attempt by the states to help drinking water systems improve their operations, infrastructure, management and finances so each system can provide safe drinking water consistently, reliably and cost-effectively.

In most very small community water systems in North Dakota, the water operator is a part-time position. In some communities, the position is held by a volunteer, often a member of the governing board. This SOP manual was developed with both the operator and the governing board in mind. It establishes and lays out a sound operating process, provides recommended forms and checklists for record keeping and provides consistency in operations when there is a transition from one operator to another.

> Operators are encouraged to keep a daily operator's log book as a companion to the SOP.

A good operating process and detailed record keeping will allow a community water system to provide safe, dependable water to its customers long into the future.

The SOP manual is divided into eight sections:

- Source Water
- Distribution, Storage
- Treatment
- Water Testing

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A brief description of each section follows. Each section contains various inspection overviews, maintenance recommendations, items that the system operator should add from the community's files, example record keeping forms, technical briefs, inventory sheets and/or checklists. The maintenance recommendations are a recommended minimum. All systems are not alike, and each system should develop a specific schedule that can be included in the manual.

During the operator training session, operators were encouraged to keep a daily operator's log book as a companion to the SOP. Considerations for an operator's daily log book are using a notebook that is stitched or bound to keep pages from getting lost, using a pen instead of a pencil for establishing permanency and demonstrating integrity of the records and recording such items as weather conditions as well as daily activities.

Source Water: As the starting point for every water system, the most critical component is the source. Even systems that purchase their water as a consecutive user will typically have a meter connection for which they will be responsible. Daily master meter readings are included in this section of the manual. Record forms for pump information are included. The same forms can be used for high service pumps that might be considered part of the storage and/or distribution system.

Distribution: The distribution system is the unrecognized backbone of any water system. However, due to its inconspicuous nature (being underground for the most part), problems are seldom realized, and maintenance is seemingly nonexistent.
The fact that most bacteriological contamination takes place in the distribution system should be enough to warrant prudent maintenance of piping and valves in the system. In addition to the water mains, the section on the distribution system also includes general information, technical briefs and record keeping forms for valves, hydrants and meters. Information on water main break repairs and a water main failure report form, together with disinfection of water main information, is included in this section.

Water service turn-on and turn-off procedures, together with sample work order forms, have been developed as part of the SOP manual. Additional information on controlling pressure, leak detection and cross contamination is also included in this section.

Storage: The third section covers information on storage facilities that can include elevated tanks, ground storage or small pressure tank systems. Storage facilities are used to equalize pressure, provide fire flow, reduce pumping requirements and shave peak usage periods. Through proper inspection and maintenance, all storage facilities can be operated in a manner that provides the community water system longevity of service and improved water quality.

As in the previous sections, the maintenance recommendations provide a recommended minimum of daily, weekly, semi-annual and annual maintenance. Daily maintenance involves visual inspections of security and access, as well as keeping records of levels and/or pressure. Weekly inspections are again related to security and overall integrity of the system. Notes for the daily and weekly inspections should be included in the operator's daily log book. MAP recommends that systems consider a semi-annual overflowing of elevated storage facilities to help overall water quality flowing into the distribution system. Ambient air temperature and related weather conditions can cause water in an enclosed storage facility to "turn over" twice a year causing sedimentation

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in the bottom of the tank to move to the surface. By overflowing the tank during the spring and fall when these weather conditions take place, the sedimentation can be removed and prevented from flowing into the distribution system. Annual overflow of the tower is a recommended minimum.

Treatment: Since the SOP was written for the very small systems, the section on treatment covers disinfection by chlorination only. While there are several other treatment options that might be used by small water systems, the majority of systems in North Dakota use chlorine as their source of disinfection. This section includes several technical briefs from the National Drinking Water Clearinghouse at the University of West Virginia. For systems that utilize other types of disinfection, the operators attending the Water Operator Training and Certification were told that other technical briefs are available through the website: http://www.nesc.wvu.edu/ndwc/ndwc_index.htm. Operators of water treatment plants were encouraged to use the SOP as an addendum to their site-specific Operations and Maintenance Manual provided by the engineer or vendor for their particular plant/facility. Maintenance performed on all treatment equipment should comply with the manufacturer's recommended service intervals and state regulatory requirements.

There are a series of standard color codes for pipes in water systems. Many of the larger water systems use this color code system for painting of pipes within the water treatment facility. Smaller systems can also benefit from the color code system. The operator can run chemical feed tubes from small injection pumps through painted one-half inch (1/2") plastic pipes to help identify the line and to take the sag out of the feed line.

Water Quality Testing: Water quality testing is perhaps the most important job a water operator can do for their system. These routine samples ensure the water is safe for the public to drink. Through various testing methods and sampling sites, the operator is able to achieve accurate and timely results. Testing can allow the operator to remedy current issues and assist in long-term planning.

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This section includes various forms and scheduling samples specific to North Dakota requirements for water quality testing. The instructions for a site sampling plan for the Total Coliform Rule as well as for the Lead and Copper Rule are included. Also included are reporting forms for the Disinfection By-Products Rule that each system using disinfection must submit on a routine basis to the NDDH.

Emergency Operations: Planning for emergency operations can be an intensive process that includes contingency preparation for many disasters. The Environmental Protection Agency is beginning to require emergency planning for water systems. Emergency planning has not yet been required for very small systems; however, all systems are encouraged to voluntarily compile a listing of pertinent vendor and contact names (within the community, county and state agencies), and phone numbers to be used in an emergency.

This section includes a sample emergency contact list that each system is encouraged to complete. If the water system has completed either a Vulnerability Assessment or an Emergency Response Plan, the emergency contact list that was developed as part of that process can be included in lieu of the list included in the SOP. Operators are encouraged to update the emergency contact list annually and to provide a second copy of the list to at least one other official in the community.

Public Relations: The water operator is required to perform many tasks within the water system; most of these duties require interaction with the public. Water system users can be either an asset or a obstacle to the operator when investigating problems or communicating issues. The manner in which complaints and water outages are responded to directly effect the public trust in the utility. Timely response to customer complaints is a must, whether wanting to gain or keep the public trust.

Water operators, while they may not consider themselves so, are part of the community's public relations team. The operator is often the first contact the public has with the water system when there is a problem. As part of the public education and public relations effort, the operator is encouraged to provide a written monthly Operations and Maintenance Report to the governing board at their regular meeting. Operators are also encouraged to provide walk-through tours of their water system facilities for all governing board members to better educate them on the condition and importance of one of the community's largest assets.

SOP manual: a "tool" for small community water systems.

The public relations section also contains various forms for recording customer complaints, reports for field investigations of complaints and various resource lists and information. Guidelines for the types of records that should be kept on the system and the timeframe for record retention are also included in the manual.

Water is a finite resource. However, because water is inexpensive, there are often few incentives to reduce water loss. Citizens and utilities need to consider water conservation measures and programs. The SOP contains some general resource information on water conservation.

Safety: A serious concern for all water operators should be safety. The water operator is exposed to conditions and chemicals that, if not watched closely, can lead to serious accidents and, possibly, death. The owners of the water system need to be equally aware of the dangers and provide adequate safety equipment to all personnel who come into contact with hazardous conditions.

Each system that uses any chemical in the water treatment process will also have a Materials Safety Data Sheet (MSDS) for each chemical. The MSDS is a very important resource containing reference information on how to handle the chemical, as well as how to handle an emergency release of the material. Anyone doing any type of work at the water treatment facility should be familiar with the MSDS for that system.

Safety of the overall integrity of the system, public safety and personal safety of the water operator are covered in this section. While the various checklists on electrical safety, lock-out tag-out, confined space entry and chemical handling safety are not meant to be all inclusive, they were included more for resource information. Since many of the small systems have one part-time or full-time operator, the operator is encouraged to work with the governing board to follow all safety precautions to help reduce the risk exposure to himself/herself and to the community.

Conclusion: The SOP manual is intended to be another "tool" for both the operator and the owners of the small community water system. It can help preserve the institutional memory of the system, provide guidance for routine and preventative maintenance to both the regular operator and any back-up temporary operator responsible for the system and be a reference manual on the various components of the system.

The manual is available for purchase from Midwest Assistance Program, Inc., PO Box 81, New Prague, MN 56071, 1-800-822-2981 or via e-mail at map@map-inc.org or on the MAP website at www.map-inc.org. The cost of the manual is $35.00, which includes shipping and handling. Community water systems serving a population under 3,300 are eligible for reimbursement for the cost of the manual from the NDDH Operator Certification and Training Program. The contact person for the Operator Training and Certification Program is Mike Brisben at 701-328-6622.

Midwest Assistance Program is willing to work with a limited number of small community water systems interested in implementing the SOP at their facility with on-site technical assistance to complete the manual with system-specific information. Any system interested in receiving this no-cost technical assistance during 2007 should contact Audrey Boe Olsen at MAP's Turtle Lake, North Dakota field office at 701-448-2848 or e-mail at mapinc@westriv.com. This service is provided on a first-come, first-served basis. The number of system to be served is limited, so consider applying before August 1, 2007.

WARN: A Low Cost Disaster Insurance Policy

Greg Wavra, Environmental Scientist, Division of Municipal Facilities, North Dakota Department of Health

Take a moment to consider the implications of your water or wastewater utility becoming disrupted, and you will quickly realize the importance of an effective response to get your system back in service immediately. Losing service, even briefly, could significantly impact local fire departments, hospitals and the local economy. Furthermore, without safe drinking water or the ability to flush wastewater, your community could quickly experience a public health crisis. Events such as 9/11, the 1994 Northridge earthquake, the 1997 Red River flood and, more recently, Hurricanes Katrina and Rita identified the need for water and wastewater utilities to create intrastate mutual aid and assistance programs. Some reasons why mutual aid is important to the water sector are:

- Utilities require specialized resources to sustain operations.
- Government response agencies and other critical infrastructure that rely on water supply utilities must provide their own support until state and federal resources are available.
- Large events impact regional areas making response from nearby utilities impractical.
- Promoting mutual aid/assistance meets FY06 Department of Homeland Security requirements.

The acronym most commonly used to refer to mutual aid and assistance networks is WARN, which stands for Water and Wastewater Agency Response Network. Developing a statewide mutual aid and assistance network, or WARN, is a low-cost, highly effective, all-hazards approach to preparing your utility for a local, regional, statewide, or national disaster.

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Utilities Helping Utilities Fact Sheet

1. What is Mutual Aid/Assistance?
   - Mutual Aid/Assistance is one utility helping another based on a written agreement.
   - The assistance is provided across jurisdictional boundaries in the event of an emergency.

2. What is WARN?
   - WARN is a network of utilities helping utilities to respond to and recover from emergencies.
   - Participation is voluntary.
   - There is no obligation to respond.
   - There is no cost to participate.

WARN: Water and Wastewater Agency Response Network

3. What is the purpose of WARN?
   - WARN establishes an agreement and protocols for sharing resources among water and wastewater utilities statewide.
   - WARN provides a forum for establishing and maintaining emergency contacts.
   - WARN provides access to specialized resources needed to respond to emergencies that disrupt water and/or wastewater systems.
   - WARN can facilitate training that specifically focuses on the exchange of resources during an emergency or drill.

4. Why is WARN important?
   - Utility resources are specialized.
   - Utilities must be self-sufficient.
   - Utilities must fill the gap before the arrival of government aid.

5. What does WARN provide to a utility?
   - Access to specialized, certified and knowledgeable utility personnel
   - Access to heavy equipment, tools and supplies used by utilities during normal events

6. What are the benefits of WARN?

- There is no cost to participate.
- WARN is like investing in a no-cost insurance policy to access resources when needed.
- WARN increases emergency preparedness and coordination.
- WARN enhances access to specialized resources.
- WARN provides a single agreement to access resources statewide.
- WARN expedites arrival of aid (the utility doesn't have to work out the administrative items; the agreements and WARN protocols work them out in advance for you).
- WARN agreements contain indemnification and worker's compensation provisions to protect participating utilities and provide reimbursement protocols.

7. How does a utility get assistance during an emergency?

- Currently, each WARN system works differently depending on previous agreements.
- Initial access may be made directly to other members or through an identified coordination point.
- As a result of the contact, WARN members are able to match the equipment, skilled labor and other resources needed with resources other members have available by querying a database, calling members or using an internet message board to locate those resources.
- Each WARN also provides facilitation in collecting damage assessment and locating resources as needed.
- Public utilities may also access other resources through local, state and federal agencies.

8. Are member utilities required to respond and send resources?

- There is no obligation to respond.

9. What happens if a utility sends resources and needs them back?

- Under no circumstances is a utility to send resources if it impacts their ability to manage daily operations or respond to its own emergency.
- It is up to the lending utility to determine what resources to send.
- Resources remain under the authority of the sending utility and as such can be recalled any time.

10. What happens if equipment on loan is damaged or stolen?

- This may depend on your state's mutual aid/assistance agreement; the lending utility is typically responsible to have insurance in case this happens.

11. Are mutual aid and assistance activities eligible for Federal Emergency Managament Agency (FEMA) reimbursement?

- It is important to understand how the FEMA programs work and understand how they apply to mutual aid/assistance in advance. Some key considerations for FEMA reimbursement include:
  - The assistance is requested by the applicant.
  - The work performed is directly related to the disaster and is otherwise eligible for FEMA assistance.
  - The entity can provide documentation of rates and payment for services, if requested.
  - The agreement is written and was in effect prior to the disaster.

12. Will a utility be reimbursed for the use of its resources?

- This depends upon the terms that the lending and borrowing utilities agree upon.
- In some cases during a federally declared disaster, FEMA may provide reimbursement for equipment, fuel and personnel used in a disaster.

13. How is WARN different from a statewide mutual aid program?

- Statewide mutual aid/assistance agreements (MAA) frequently require a declaration of a "local emergency" to activate the agreement. WARN agreements do not require the declaration of an emergency, saving critical time in response.
- Statewide MAA programs do not typically include private utilities; WARN agreements do.
- For aid to cross state lines, coordination with state emergency management is recommended and is typically facilitated by Emergency Management Assistance Compact (EMAC) in coordination with the National Response Plan.

14. Is help available for disasters other than hurricanes?

- WARN is available in all types of emergencies.
- WARN members can receive assistance anytime their systems need emergency assistance.

15. Who should be involved in helping develop WARN agreements?

- Utility owner/operators
- Professional association representation.
- State water and wastewater primacy agency (state health, environmental protection, etc.)
- State emergency management and/or homeland security agency
- US Environmental Protection Agency (EPA) region representation

16. What help is available to form a WARN?

- AWWA report – *Utilities Helping Utilities: An Action Plan For Mutual Aid and Assistance Networks for Water and Wastewater Utilities*
- AWWA will be holding workshops across the country.
- EPA can help with post-workshop remote support on a case-by-case basis, depending on available funding and the specific needs of the program. Support could include facilitation of meetings and workshops, administrative support and answering technical questions.

17. What about setting up an interstate mutual aid program?

- Currently the Emergency Management Assistance Compact (EMAC) is being used by all 50 states to share aid across state lines. The water sector will be working with the administrators of EMAC to ensure that it can be used effectively for the water sector.

For more information about the WARN program, contact Greg Wavra, North Dakota Department of Health, 701-328-5224.

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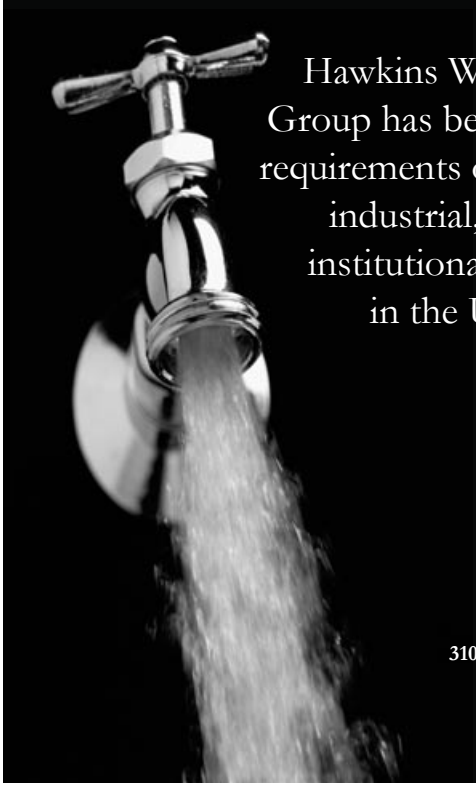

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Slater, IA	515-685-2250
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Lead and Copper Rule: Do Not Remove Aerators When Collecting LCR Samples

EPA Clarifies Testing Instructions

The lead and copper rule (LCR) requires that public water systems routinely sample for lead and copper in drinking water that may result from interaction between corrosive water and household pipes.

Recently, the Environment Protection Agency (EPA) circulated a memo (October, 2006) recommending that aerators not be removed from faucets when lead and copper samples are being taken for routine compliance sampling.

> Homeowners should regularly clean aerators... but not during routine LCR sampling.

Aerators serve to introduce air into the water flow and give the impression of a larger water flow coming from the tap. This is widely viewed as an effective water conservation practice. At the same time, these screens may also trap particulate matter or debris within the faucet. Some of these particles may contain lead.

The EPA recommends that homeowners regularly clean their aerators to remove particulate matter. However, it is not recommended that this be done during routine LCR sample collection. This is because if customers are only removing and cleaning aerators prior to sampling for lead, the public water system could fail to identify the actions needed to reduce lead exposure from drinking water. The sample would not be representative of what the residents of the house have been drinking.

In the case of a high lead result, (i.e. exceeding the action level of 15 ppb), the public water system may want to take a second sample without the aerator to determine if the particulate matter was the source of lead in the first sample. This would allow the public water system to give appropriate advice to the homeowner and community about measures to limit exposure to lead in drinking water.

It is important to also remember that LCR sample sites cannot include taps that have point-of-entry or point-of-use treatment devices. This is because these devices may have removed lead from the water and would therefore not be representing the most vulnerable sites in the system.

For more information about the LCR, contact Katie Luther, North Dakota Department of Health, 701-328-5258.

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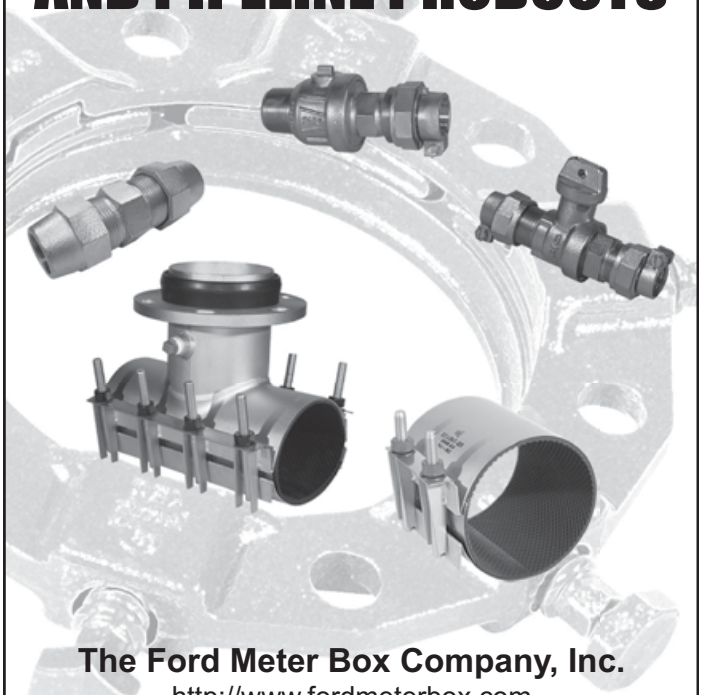

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Water Loss Costs Everyone

Eric Volk and Tom Seig, North Dakota Rural Water Systems Association

All water systems produce or buy more water than is purchased by their customers. More water is metered "in" than metered "out." Everyday, water system personnel struggle with the ever present demon known as **WATER LOSS.**

You may wonder how much lost water is acceptable. It tends to vary from system to system, but the industry standard is still 10-15% water loss. However, 30% is a very common number that we see out there. It was estimated in 2005 that nearly 6 billion gallons of drinking water worldwide "disappears" every day.

> Meters are the cash registers of your system, every time the meter turns, the system makes money.

Why is water loss such a big deal? There are a few good reasons but it pretty much boils down to, **lost water = lost revenue** and lost water costs everyone on the system. So where does all the water go? Is it all leaking out of the system? Before you spend hours running around your system trying to find that mysterious leak, your first step in identifying and ultimately solving a water loss problem should be by conducting a water audit.

Simply put, a water audit accounts for all the water produced or purchased by a system and compares it to what was delivered to its consumers. Everything in between those two points is examined in great detail. A water audit will show you how efficiently your system is operating and where some of the losses are occurring. The water audit review period should consist of 12 full months. The audit should be an ongoing process. When a new month's worth of data is collected; the oldest month is dropped off. Good system records are a must for a water audit. It is vital that both the operator and office personnel keep their records up to date.

Every water system in North Dakota is unique, but usually water loss can be broken down into three broad categories: 1) errors, 2) authorized, unmetered uses and 3) true lost water.

Errors cause apparent losses or as they are sometimes called, paper losses. Things such as inaccurate or broken meters are big players when it comes to water system errors. How accurate can a 30-year-old meter be? During the water audit, questionable meters should be taken out and tested against new meters for accuracy. Test them at high, medium and low flows. A meter that is only 70% accurate translates into 30% water loss. For every 1000 gallons that runs through that meter, your system is only being paid for 700 gallons. Meters are the cash registers of your system, every time the meter turns, the system makes money. When water passes through the meter and it does not turn, the system loses money.

All systems should have a written meter installation, calibration and replacement policy. It is recommended that water systems meter their customers and record those readings on a monthly basis. Outside readers should be reconciled yearly with the inside meter. Maybe some of your large meter applications should actually be switched to a compound meter. Depending on the raw water quality, source meters should also be checked on a routine basis. Accounting and arithmetic mistakes are other ways that errors occur. Putting an extra zero on or leaving one off can create havoc when attempting to track down lost water.

Authorized, unmetered uses are things such as water

Over time, the inside meter and the outside remote can be off by 1000's of gallons.

used for firefighting, street cleaning, water and sewer flushing, city facilities/parks/pools, treatment plant needs and possibly connections such as schools or churches. The water use is authorized by your system but the water is not metered and is not accurately accounted for. Sit back and think about your system. How many situations like this are happening and how much water do you think some of these activities use? Depending on your water quality, you could be flushing a substantial amount of water down the drain each month. Are the sprinklers at the park or the ball diamond always running? How much water could an unchecked leaky toilet use in a week, two weeks or even a month? We always tell systems that it is their choice to charge or not to charge a customer, but regardless of the billing arrangement, a water meter should be installed to account for that water.

True water loss is water that actually leaves the system without passing through a meter. These are considered real losses. The water could have either been stolen or given away through an illegal connection. As the price of water rises or as drought conditions occur, water theft increases. There are rich and poor thieves. There are smart and not-so-smart thieves. We assure you that they are all out there and that they are stealing from the system. Thieves are taking advantage of all the paying customers. Catching them can be tricky, but well worth the effort. A refusal to allow meter readers access to the meter, low usage based on average water consumption, or consistently using the same or minimum gallons each month are just a few examples of conditions that might make you suspicious that water theft is occurring.

The majority of true water loss is usually water that has actually leaked out of the system. This is where the FUN begins. I take that back. This is where the WORK begins!

Annually, the North Dakota Rural Water Systems Association (NDRWSA) assists numerous systems throughout the state in locating water leaks.

Listening for leak noise on a service line.

When operators find out that NDRWSA has leak detection equipment, they think someone will show up, wave this magical equipment around and the leak will miraculously be found. Sorry guys, it does not work that way. The first and easiest indication of a leak may be when water comes bubbling out of the ground. A water main break will flow many gallons per minute, saturating the ground quickly and up to the surface it comes. But what happens when it is a small leak on a service line or corporation? Maybe the pipe is laid in sand or gravel, or has a sanitary or storm sewer line close by. These leaks will stay underground for a long time or may never surface. How do you find such a leak? One way is to refer to the data that is contained in your water audit. By looking through your records, you can see how much water you are actually losing. Your records might reveal what size of leak you are looking for and what means you should take to find it.

A specialized listening device can be used to help locate a water leak.

Leak Detection Tips:

Gate Valve Isolation: Isolating parts of the system is one way to narrow down the leak search area. Gate valves can be operated to isolate certain water mains to check for flow. You can turn your looped system into a series of dead end lines which makes it easier to find leaks. Listening on valves works best if done late at night when customer water usage is close to zero. Closing a valve for a period of time and then slowly opening the valve should cause the water main to pressure up and then go quiet. A line that does not pressure up indicates a flow of water going somewhere else, possibly to the system's leak. After you have narrowed down the search area, leak locating equipment can be used to find the leak.

Empty/Old Homes: Rural North Dakota is full of empty homes. The lines need to be checked and recorded when the water service is off. Many small

communities are removing old homes and businesses. When these buildings are removed and the basement buried, the curbstop must be shut off. There have been numerous occasions that a cap on a serviceline has rusted away and the leaking water finds its way to the old sewer, never to surface. If you think a water leak is finding its way into the sanitary sewer system, double check your lift station hourly meter records and start popping manholes in the middle of the night to check for unusually high flows.

System Maps: Good maps are crucial in the search for a water leak. You cannot find a small leak on a pipe if you are listening on the wrong side of the street or maybe the pipe does not even run on that street. Maps continually need to be updated and verified. Even new system maps have errors. Gate valves, fire hydrants and water mains may have been improperly mapped. We find that some systems are a mix of old and new or of different engineering firms, or maybe a local contractor has done some spot work. It is very difficult to find a leak if no one knows where the water line is or where it goes.

Use Your Customers: Let your customers be the eyes and ears of their little part of the system. One way you can inform your customers is to use the Leak Detection letter developed by NDRWSA. The letter is available on our website www.ndrw.org/news.htm and can be customized to meet your particular needs. It will make your customers more aware of potential water leak situations.

The past few summers and falls have been quite dry and if residents are not watering, green spots in unusual locations could indicate a leak.

As a small leak becomes larger you may lose pressure at your water tap. Does it take longer to fill the washing machine? How about filling the bathtub? Does water start flowing out of the faucet at good pressure and then drop off? Any of these may indicate a leak.

Do the water pipes hum or sing when water is not being used? Do they make noises in the middle of the night when the house is quiet? Noises may indicate a leak.

Many homes have sump pumps installed to stop ground water from getting into the basement. Spring thawing or a heavy rain event may cause water to collect into the drain tile that surrounds your home causing your sump pump to run. With drought conditions in many parts of the state, sump pumps should not be running as often. If they are, it could indicate a leak.

Post the leak letter around town or use it as a bill stuffer to educate your customers on what to look for when it comes to a leak on the water system.

Is all of this really worth the effort? How much does lost water really cost? A certain community in North Dakota figures that it costs them $3.00 to produce and distribute 1000 gallons of water and they sell that water to their residents for $4.00 per 1000 gallons. In one year, the city produces 30 million gallons (Mgal). If the city has a water loss percentage of 30% it would mean they are losing 9 Mgal/year. They could potentially lose between $27,000 and $36,000 per year. Worth the effort? You bet!

Taking the time to search for lost water takes a lot of work. Leak locating can turn into an examination of every old building, service connection and old well that was ever installed on the system. However, finding lost water saves the system money and sometimes lots of money. So give locating lost water the time it deserves. Remember that lost water costs everyone and that we all have a part to play in helping to save this precious resource.

North Dakota Rural Water Systems Association (NDRWSA) is a non-profit trade association providing numerous services and benefits to rural water systems and small municipalities (under 10,000 population) throughout the state of North Dakota.

Tom Sieg, Circuit Rider West, and Eric Volk, Training Specialist, provide Onsite Training and Technical Assistance to small and rural water systems across North Dakota. Tom has been employed with NDRWSA since January 2001 and Eric since August 2002.

Quality On Tap!
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47th Annual Water and Wastewater Operator Training Program

Craig Bartholomay, Environmental Engineer, Division of Municipal Facilities, North Dakota Department of Health

This past March and April, the North Dakota Department of Health, the North Dakota Water and Pollution Control Conference, the North Dakota Section of the American Water Works Association, the North Dakota Chapter of the American Public Works Association and the North Dakota Water Environment Association sponsored the 47th Annual Water and Wastewater Operator Training Program.

There were six sessions offered with a total of 286 attendees.* Water treatment and distribution classes were offered March 5-7, March 12-14, March 26-28 and April 2-4. Wastewater treatment and collection classes were offered April 16-18 and April 23-25.

TRAINING SESSIONS	# OF ATTENDEES
Water Treatment and Distribution	
March 5, 6, 7	64
March 12, 13, 14	48
March 26, 27, 28	57
Surface Water and Ground Water Treatment	
April 2, 3, 4	58
Wastewater Treatment and Collection	
April 16, 17, 18	31
April 23, 24, 25	43
Total number of attendees	286

*Some operators attended more than one session.

The objectives for these classes are to fulfill the continuing education credit (CEC) requirement for certified operators, to hear presentations regarding regulations and how to avoid mistakes that can lead to noncompliance, to learn general operation and maintenance topics and to give operators an opportunity to write a certification exam. The courses are not geared specifically to prepare operators for certification exams.

During the training classes there were six operator examination sessions scheduled. These were reserved for the last day of each session. The Department administered 195 examinations this year with a passage rate of 81%.

EXAMINATION SESSION	NUMBER OF EXAMINATIONS
March 7	46
March 14	26
March 28	49
April 4	24
April 18	23
April 25	27
Total number of examinations:	195

The following is a breakdown of the certification examinations that were written during the 2007 operator training sessions:

CLASSIFICATION OF EXAMINATIONS

	1A	01	02	03	04	Totals
Water Treatment	23	24	14	07	02	70
Water Distribution	27	26	13	05	01	72
Wastewater Treatment	02	11	08	03	00	24
Wastewater Collection	02	17	09	00	01	29
Totals	54	78	44	15	04	195

(For a list of certificates awarded see page 32)

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Cell: 612-868-1097
tbelden@engamerica.com

Matthew Fritze
Cell: 952-239-2264
mfritze@engamerica.com

Attendance Roster: 47th Annual Water and Wastewater Operator Training Sessions

Environmental Training Center, Bismarck - Training Credits Issued

Water Treatment and Distribution
(12 Credits) March 5-7, 2007

Dell Beach	Beach
Shane Berg	Minot Air Force Base
Brian L. Borden	Grand Forks
Bradley Brandt	Glenburn
Brent Lee Brinkman	Cass Rural WU-Phase I
Gerald Cain	Garrison
Terrence Desjarlais	Belcourt Public Utilities
Reggie Engh	Minot
Hal Eschenko	T. Roosevelt Nat'l Pk-North
Kevin Flammang	North Prairie RWU-System III
Curtis Gietzen	Sacred Heart Monastery
Bradley Glass	Bismarck
Stuart Gullicks	Dakota Water Users North
Johnathan D. Guss	Drayton
Mark Haider	Minot
Dennis Halvorson	Cooperstown
Kermit Heart	Fort Berthold Rural Water
Dale Helbling	South Central Regional Water District
Lyle Herman	MPC-Milton R. Young-Station
Leslie Heuer	Cass Rural WU-Phase II
Daniel Hicks	Benedict
Kenneth Holte	New Rockford
Richard A. Jacobson	Hazen
Kevin J. Kelly	Minot
Justin Kohanes	Southwest Water Authority
Wayne Koltes	Hettinger
Kelly Laducer	Belcourt Public Utilities
Joel Laney	Verona
Gregory Larson	Ray and Tioga Water System
Terry Leingang	Riverdale
John Lovcik	Rolla
Tom Mattheis	Ellendale
Lori Metz	Montpelier
Bruce Meyers	Missouri River Correctional Center
Tim Midboe	Grand Forks
Effie Miller	Williston
Kenneth J. Miller	Dickinson
Candy R. Montonye	McLean-Sheridan Rural Water
Gerald Mostad	Minot
James Murphy	Southwest Water Authority
Myron Mutzenberger	Great River Energy - Stanton Station
William H. Osterhaus	T. Roosevelt Nat'l Pk-North
Philip K. Riely	Watford City
Mike Riley	North Prairie RWU-System I
Dan Roller	Southwest Water Authority
Andrew Schiele	Karlsruhe
Marvin Smith	Dickinson
Michael Thompson	Grand Forks-Traill Water District
Darin Wetzel	Verona

Water Treatment and Distribution
(12 Credits) March 12-14, 2007

Gary Ackerson	Grand Forks Air Force Base
Troy D. Backstrom	Minnewaukan
Don Berg	Rolette
Rodney Berger	Center South System
Ray Berry	Manning Water Board
Gregory Boucher	Rugby
Frank J. Buresh	Sacred Heart Monastery
Clint Cogdill	Burlington
Anton (Tony) J. Doll	Napoleon
Kenny Erickson	Harvey
Corrine M. Fisher	Antelope Valley Station
James Fixen	Alexander
Larry A. Gruenberg	Great River Energy - Stanton Station
D.G. Hagen	Woodworth
Mike Hanlan	St. John
Ralph Hanson	Carson
Duane Holien	Cando
Dennis J. Howey	Gwinner
James D. Isley	Velva
Robert Job	Linton
Justin Lee Johnson	Beulah
Aaron Knutson	Antelope Valley Station
Russ Kostelecky	Southwest Water Authority

Marlin Leidholm	McLean-Sheridan Rural Water
David Lupo	Southwest Water Authority
Christopher Mahaffey	Grand Forks Air Force Base
Aaron Marquardt	Dakota Gasification Co.
John McDonald	Larimore
Rod McKay	Leland Olds Station
Larry D. Meidinger	Ashley
Michael W. Meier	Leland Olds Station
Calvin G. Melby	Ray and Tioga Water System
Chad Mittleider	Langdon
Donald Nagel	Hague
James D. Nowell	New Town
Christopher M. Olson	Casselton
Keith C. Orth	Lake Sakakawea State Park
Robert Oster	Steele
Brad Reisnour	Carrington
Gary A. Schmidt	Mandan
Milton Schmidt	Tri-County Water Users, Inc.
William (Bill) Solis	Fargo
David Sorenson	Mandan
Christopher Soulies	Grand Forks Air Force Base
Randolph Thielman	Dakota Gasification Co.
Christy Weil	Zap
Keith Winson	Maddock
Paul N. Zeien	Selz Water Users Association

Water Treatment and Distribution
(12 Credits) March 26-28, 2007

Kenneth Albrecht Jr.	Mandan
Kenneth J. Azure	Belcourt Public Utilities
Gilbert L. Berg	New Town
Kent Bickler	Ray and Tioga Water System
Kenneth P. Blilie	Kindred
Jerry Blomeke	Cass Rural WU-Phase I
Troy Bommersbach	Southeast Water Users District
Jason Busse	Langdon
Lane Christianson	Langdon
Terry P. Eckelberg	Southwest Water Authority
David Frank	New England
Brock Garaas	Bismarck
Paul Gilbert	Southeast Water Users District
Richard Griffith	Garrison
Roy Hayes	Hazen
Allen T. Hecker	Southwest Water Authority
Ward Heidbreder	Stanley
Gary Helland	Pembina
Tom Herman	Upper Souris WUA-System I
Robert Hoffman	Fargo
Dennis Hottman	Napoleon
Kelly Jemtrud	Velva
Steven W. Jensen	Williston
Justin Johnson	Minot
Roger Johnson	Park River
Richard Kelly	Leland Olds Station
Chad Kjelland	Cass Rural WU-Phase I
Clay Kruger	Riverdale
Lonnie Lacina	Greater Ramsey Water District
Walter Lesmeister	New Rockford
Stefan W. Linstad	Park River
Michael McCollum	Cass Rural WU-Phase I
Mike McInnes	Gardner
Chad Mears	Fargo
George Mittleider	Carrington
Bruce Mutschelknaus	Southwest Water Authority
Mason D. Nelson	Valley City
Wayne Nelson	Valley City
Gary Neuberger	Beulah
Rick L. Olson	Sentinel Butte
Thomas P. Orth	Forman
Lawrence Peterson	Crosby
Scott E. Rask	Belfield
Leonard D. Ringdahl	Brooktree Wells, Inc.
Wade Schaner	Dakota Gasification Co.
Sheena Schmeets	Leeds
Jamie Scott	Mandan
Bruce W. Sloan, Jr.	Dakota Gasification Co.
Derrik Sonsalla	Parshall
Gordon Strandemo	Center Mine (BNI)
Darrell Sweep	Fargo
Jeff Thomas	Rolla
Joel Vivier	Rolla
Charles Volk	Baker Boy Supply
Larry Wangsness	Portal
Allan Weiand	Wahpeton
Brian J. Wright	Watford City

Water Treatment and Distribution, Groundwater Training, Surface Water Training
(12 Credits) April 2-4, 2007

Robert L. Annon	Cathay
Darell Baisch	Bismarck
Alan J. Beyreis	Garrison

Edward Blackcloud	Standing Rock Sioux Tribe
Jeffery Brezden	Dickinson
Alfred Buchholz	Country Club Co-op
Ross Carter	Sherwood
Gregory Dachtler	Bismarck
Keith Degenstein	Mohall
Ronald Delisle	Bismarck
Roger Dick	Southwest Water Authority
John M. Dybas, Jr.	Alexander
Roberta Ford	Antelope Valley Station
Randall Fricke	Bismarck
Duane Friesz	Mandan
Dale J. Hanson	Kenmare
Arthur H. Hendrix	Leland Olds Station
Wade Allen Hesch	Valley City
Loren Hoffman	Parshall
Brian P. Iron Shield	Standing Rock Sioux Tribe
Kevin Jacobson	Valley City
Charles Jaszkowiak	Bismarck
Thomas Kempf	Sawyer
Sherry Renee Keys	Valley City
Bruce Kindsvogel	Coal Creek Station
Chris Klaus	Grand Forks Air Force Base
Steven L. Mann	Cargill Sweeteners
Karen Mattoon	Coal Creek Station
Leland F. Messer	Southwest Water Authority
Kerry W. Miller	Stanton
Jeff Monson	Coal Creek Station
Leo Murr	Wahpeton
Steven H. Murray	McClusky
Leroy Northagen	Fordville Public School
Colin Nygaard	U.S. Bureau of Reclamation
R. Dean O'Clair	Mohall
Daniel Overmoe	Mayville
Bill Pifer	Bismarck
Vickie Poland	Midwest Assistance Program
Jamie Rath	Mandan
Ellen Rossmiller	Wildrose
Keith Rossmiller	Wildrose
Milo Sanderson	Flaxton
Scott E. Saxberg	Cooperstown
Darryl Schmidt	Coal Creek Station
Gary B. Schreiner	Bismarck
Randy L. Seelig	Lisbon
Trevor Seelig	Lisbon
Dean Smith	Ray and Tioga Water System
Delvin Stemen	Burlington
James L. Thomas	Cando
Mike Walleen	Pick City
Brian A. Ward	Fargo
Keith W. Ward	Fargo
Ryan Waters	U.S. Bureau of Reclamation
Eric Westman	Sawyer
Frank Wollschlager	Surrey
Gary Zander	Mandan

Wastewater Treatment and Collection
(12 Credits) April 16-18, 2007

Jared Baier	Minot
Dell Beach	Beach
Shane Berg	Minot Air Force Base
Charles D. Bluhm	Cargill Sweeteners
Harold R. Bruce	Belcourt Public Utilities
Alfred Buchholz	Country Club Co-op
Scott R. Christie	American Crystal Sugar Hillsboro
Anton (Tony) J. Doll	Napoleon
Lance Elmer	Hebron
Richard Enderud	Dickinson
David Even	Gwinner
Rodney Fischer	Stanton
Brock Garaas	Bismarck
David Gross	Mandan
Chad Hanson	Minot
Charles D. Hanson, Jr.	Simplot
Ward Heidbreder	Stanley
Bruce Hirchert	New Rockford
Chris Klaus	Grand Forks Air Force Base
Bruce Kracht	Valley City
Michael Lueder	Mandan
William McQuiston	Williston
Jason Newman	Valley City
Mark Noonan	Flasher
James D. Nowell	New Town
Christopher M. Olson	Casselton
Daniel Overmoe	Mayville
Martin Peltier	Belcourt Public Utilities
Christine Pozarnsky	MPC-Milton R. Young-Station
Robert Rumohr	Cargill Sweeteners
Christopher Soulies	Grand Forks Air Force Base

Wastewater Treatment and Collection (12 Credits) April 23-25, 2007

James Bauer	Minot Air Force Base
Gilbert L. Berg	New Town
Josh Beste	Fargo
Dean R. Boreen	Fargo (WWT)
Clint Cogdill	Burlington
Jeremy Deitz	Grand Forks
Jeff Differding	Valley City
Janice Feickert	Berthold
Stacey Ferdon	Grand Forks
Tom Ganje	Fargo
David M. Garcia	Minot Air Force Base
Steven Gee	Fargo
Yvette Gehrke	West Fargo
Jason Grzadzieleski	Grand Forks
Alvin G. Haugen	Michigan
Dennis Hottman	Napoleon
John Hoyer	Fargo
Jim Jones	Fargo
Frank Kilgore	Grand Forks
Joel Kolb	Grand Forks Air Force Base
Wayne Koltes	Hettinger
Christopher Mahaffey	Grand Forks Air Force Base
Barry Metzen, Jr.	Simplot
Leroy Northagen	Fordville Public School
Bruce Olson	Portland
Charles Phelps	Downstream Campground
Sallie Pochant	Downstream Campground
Douglas Quast	MPC-Milton R. Young-Station
Mike Richter	Cargill Sweeteners
Lee Roy M. Roller	Belfield
Rod Schaeffer	New England
Sheena Schmeets	Leeds
Jamie Scott	Mandan
Rod Skalsky	Knife River Indian Village
Arik Solheim	Hatton
Kenneth Stevenson	Grand Forks
Guy Thomas	Fargo
Larry Wangsness	Portal
Michael Weaver	Fargo (WWT)
Travis Wesley	Grand Forks
Stephen Wieser	Richardton
Lawrence W. Wild	Fargo (WWT)
Richard Winkels	Grand Forks

AWWA Schedules Management Institutes for Autumn 2007

The five-day Basic AWWA Water Utility Management Institute will be presented in Salt Lake City, Utah, September 17 - 21, 2007, and a second Basic Institute in Salt Lake will be presented November 12 - 16. All sessions are held at the Comfort Suites Hotel (near the airport) for American Water Works Association (AWWA) members and water department personnel nationwide. This class brings together water company personnel from every region of the county (and Canada as well) in an atmosphere of learning and sharing important leadership principles. This affordable, top-notch training teaches practical, "real world" supervisory and management skills needed to be effective in today's workplace.

The schedule is as follows:

- Day 1 - Foundations of Leadership
- Day 2 - The Leader's Role in Performance Management
- Day 3 – Managing Conflict
- Day 4 – Employee Selection
- Day 5 – The Leadership of Change

The Institute registration fee is $499.00.

An Advanced AWWA Water Utility Management Institute is scheduled at the same location the week of October 15 - 19, 2007. That schedule is as follows:

- Day 1 – Assessment of Leadership Vision, Values and Strategy
- Day 2 – Team building
- Day 3 – Employment Law for Managers
- Day 4 – Management of Quality Customer Service
- Day 5 – Critical Thinking Skills for Problem Resolution and Innovation

The Advanced Institute registration fee is $499.00. Optional certification from Utah State University will be available for $50.00 extra to members needing to meet training requirements for professional affiliations. To obtain the Basic Institute and/or Advanced Institute schedule and registration information, call Chuck Christensen at 801-333-3779, or email him at chuckets@msn.com.

Governor Hoeven Proclaims Drinking Water Week

North Dakotans Encouraged To Protect and Conserve the State's Waters

Governor John Hoeven declared May 6 through 12, 2007, as Drinking Water Week in North Dakota.

This annual event is dedicated to the belief that North Dakotans should have a safe and dependable supply of water, both now and in the future. Citizens are called upon to help protect the state's source waters from pollution.

Drinking Water Week recognizes the importance of water source protection and conservation, as well as the value, importance and fragility of the state's water resources.

Organizations involved in the promotion of Drinking Water Week include the North Dakota Department of Health, the North Dakota Section of the American Water Works Association, the North Dakota Water and Pollution Control Conference, the North Dakota Chapter of the American Public Works Association and the North Dakota Rural Water Systems Association.

Representatives at the signing of the Governor's Proclamation of Drinking Water Week were: Front row (l to r): Melody Kruckenberg, North Dakota Rural Water Systems Association; Governor John Hoeven; Chuck Abel, North Dakota Chapter of the American Public Works Association. Back row (l to r): Terry Dwelle M.D., State Health Officer, North Dakota Department of Health; Lisa Ansley, North Dakota Water and Pollution Control Conference; and Brett Jochim, North Dakota Section of the American Water Works Association.

Proclamation
Drinking Water Week

May 6-12, 2007

WHEREAS, the health, comfort and quality of life for North Dakota's citizens depend on an ample supply of safe, high-quality drinking water; and

WHEREAS, water greatly influences our everyday lives through its uses in public health, economic development, power production, agriculture, recreation and business and industries; and

WHEREAS, many dedicated men and women have made significant contributions in developing, operating and maintaining our public water systems; and

WHEREAS, what we do today to protect our drinking water will affect the prosperity and well-being of future generations; and

WHEREAS, North Dakotans are encouraged to recognize this precious resource and to help protect our source waters from pollution, to practice water conservation, to become involved in local water issues and to plan for its efficient use.

NOW, THEREFORE, as the Governor of the State of North Dakota, I do hereby proclaim May 6-12, 2007, DRINKING WATER WEEK in the state of North Dakota.

John Hoeven
Governor

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Governor Hoeven Proclaims Public Works Week in North Dakota

Governor John Hoeven has proclaimed May 20 through 26, 2007, as Public Works Week in North Dakota.

Public Works Week is observed annually to celebrate the contributions of public works professionals, including those who manage community water, sewer, public transportation and refuse-removal systems, as well as those who are responsible for maintaining public buildings and grounds.

"We value our communities and the role public works professionals play in keeping them safe and functioning smoothly," Hoeven said. "Public works professionals maintain and improve the systems and services vital to a community's health, safety and comfort."

For more information about Public Works Week, contact Chuck Abel, president of the North Dakota Chapter of the American Public Works Association, at 701-328-5207.

Representatives at the signing of the Governor's Proclamation of Public Works Week were: Governor John Hoeven and Chuck Abel, North Dakota Chapter of the American Public Works Association.

Proclamation
Public Works Week
May 20-26, 2007

WHEREAS, public works infrastructure, facilities and services are of vital importance to the health, safety and well-being of the people of North Dakota; and

WHEREAS, it is important for the citizens and civic leaders of this state to gain knowledge of and to maintain a progressive interest in the public works needs and programs of their respective communities; and

WHEREAS, public works professionals, engineers and administrators are responsible for and must design, build, operate and maintain the transportation, water supply, sewage and refuse disposal systems, public buildings and other structures and facilities essential to serving our citizens; and

WHEREAS, North Dakota's public works professionals, engineers and administrators should be recognized for their dedication and contributions to the growth, development and stability of our state.

NOW, THEREFORE, as Governor of the State of North Dakota, I do hereby proclaim May 20-26, 2007, PUBLIC WORKS WEEK in the state of North Dakota.

John Hoeven
Governor

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Chloramination and Nitrification

Kim Rudningen, Environmental Scientist, Division of Municipal Facilities, North Dakota Department of Health

Proper water treatment is sometimes difficult to achieve. With Environmental Protection Agency (EPA) guidelines becoming more strict, water treatment operators have to be very careful with the chemicals they have in their water as well as those they use to treat their water. Over the past three decades, disinfection by-products have become a front liner in the list of EPA-regulated chemicals in drinking water. After the Total Trihalomethane Rule of 1979 increased awareness of cancer and its causes, water treatment alternatives such as chloramination became much more popular. The percentage of systems using this form of treatment increases yearly. A 1998 survey of large- and medium-sized utilities showed that while chlorine was the most widely used disinfectant, chloramine use increased from 20 percent in 1989 to 29.4 percent in 1998. Half of those systems surveyed also stated that possible changes might be made in their manner of disinfection in the near future.[1]

Because of the chemistry that occurs between the chlorine and the organics naturally found in water, disinfection by-products are likely to occur in waters that have high residual total organic carbon (TOC) upon treatment with chlorine. However, as studies have shown over the years, these by-products are reduced with the use of chloramines because the chemicals react in a different manner.[2] This result allows systems with high TOC and subsequently high disinfection by-products (specifically Total Trihalomethanes) to reduce their numbers without completely changing the water treatment process. By switching chemicals they are often able to reduce their numbers back into compliance with EPA standards.

It is important to show some comparisons between chlorine and chloramination so that people are aware of the differences and potential problems that come from each type of treatment. Chlorine tends to be a much stronger disinfectant; however, as mentioned above, it reacts with organic matter to form the disinfection by-products. Chloramines have lower disinfecting strength, but the residual is more stable and stops the formation of trihalomethanes and haloacetic acids. Further, chloramination has the ability to reach the remote areas of distribution systems, which is often a factor in large rural water systems. It tends to be more economical than the alternatives, and also minimizes odors often associated with traditional chlorine systems.[3] These benefits are the reasons why a good number of North Dakota water systems have switched to chloramination. High TOCs in the raw water, as well as extensive distribution systems, create problems with disinfection by-products.

There are, however, some drawbacks to chloramination that systems will have to overcome if they choose to use this type of water treatment. Most important is the vulnerability to nitrification. There is also the possibility of some corrosion of plumbing fixtures (particularly those made out of natural rubber products) formation of chloramine-related disinfection by-products and a possible temporary increase in lead and copper levels where brass fixtures are used. Most of these drawbacks are outweighed by the benefits that come from chloramination use. However, the one that must be most closely monitored is the possibility of nitrification occurring within the distribution system.

Nitrification is the biological process by which ammonia-oxidizing bacteria (AOB) convert free ammonia to nitrate.[4] These AOB are slow growers and need ammonia for energy. They are also fairly resistant to chloramines. This is where potential problems arise. AOB proliferate in water storage reservoirs and dead-end mains. Once they have established themselves within the distribution system, nitrification problems can begin. Nitrification occurs because these AOB have free ammonia available to them. This free ammonia can result from an over dosage of ammonia during treatment or an incomplete reaction with the chlorine (from the breakdown of chloramines that occurs over time or from ammonia that is available from the source water). AOB, once established, can cause nitrification and a number of resulting problems

within a water system. Thus, with a decrease in some water quality issues, (e.g. disinfection by-products), we are giving way to other potential water quality issues. However, nitrification can be reduced and kept at bay through careful treatment, monitoring, record keeping and data analysis.

There are several factors that contribute to nitrification throughout a water distribution system. Water temperature is a main factor. Systems with water temperatures in excess of 15 degrees Celsius for several months are more susceptible to nitrification.[5] Other factors include pH, formation of biofilm, pipe materials, water age, low water flow and storage reservoir mixing and turnover rates.

Rising water temperature increases the bacterial growth rate. It also increases the amount of free ammonia present in the water. As temperatures increase, the chloramine begins to breakdown, leaving a decreased residual and more substrate for the AOB. These AOB are also protected due to heavy tuberculation that occurs in old piping. The disinfectant often does not reach these areas, allowing for biofilm growth. There reaches a point in the system where, due to these factors, the amount of disinfectant residual in the water is no longer high enough to keep the bacteria levels down, and nitrification becomes a problem in the distribution system.

There are several ways that water utility managers can work to prevent water quality issues from occurring in their water systems that utilize chloramination. Factors to consider include distribution system design and conditions, distribution system operation and maintenance, point of chemical application and disinfectant levels leaving the water treatment plant and monitoring parameters and frequency.[6]

When dealing with the distribution system design and conditions, certain issues must be considered. Many times, issues arise due to overstorage of water, low-flow lines, dead ends and oversized pipes. Other factors that affect nitrification due to design are poor mixing of storage tanks and use of chloramine residual boosting. The detention time of water also plays a key factor in the control of nitrification. Areas with longer detention time, due to poor turnover and dead ends, are more likely to have lower disinfectant residuals, higher ammonia concentrations and sediment. This longer residence time and the resulting water conditions allow for ammonia oxidizers to grow and metabolize ammonia in the water. The adjustment of water storage operating levels, water demand and pumping schedules may be necessary. It is also recommended that a residual of 2.0 to 3.0 milligrams er liter (mg/L) of chloramines be maintained at the entrance to the distribution system. However, once

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the nitrifier population establishes, these doses may no longer be inhibitory. Whenever the AOB growth rate exceeds the AOB inactivation rate, the utility will be vulnerable to nitrification.[7]

Several methods have been discussed regarding ways to reduce nitrification. However, it is also very important to set up continuous monitoring practices in order to have guidelines for comparison so that if a problem does arise, steps can be taken to immediately deal with the problem. There are several sets of monitoring parameters that can be used to determine problem spots within the distribution system.

The following table summarizes the monitoring parameters, their purpose and timelines for monitoring:[8]

Monitoring Parameter	Purpose	Timeline
Free/Total Chlorine	Total chlorine includes all species of chloramine. The measurement of free chlorine at the plant is critical for proper ammonia dosing.	Residual should be monitored continuously or daily in both the plant and distribution system.
Free Ammonia	Used to gauge process control at the treatment plant and nitrification in the distribution system. High free ammonia is an indicator that nitrification is probable.	Should be tested once during each operator's shift if continuous monitoring isn't used.
Nitrite/Nitrate	Nitrite levels increase initially when ammonia is consumed. Nitrite concentration will decrease as it is converted to nitrate by nitrifying bacteria (NOB).	Nitrite should be monitored weekly in the distribution system, especially in low-flow areas. You may choose to monitor nitrate on the same timeline.
Heterotrophic Plate Count	Used as a surrogate for monitoring bacteria in the distribution system because measuring AOB is complex.	Should be monitored at least monthly and more frequently if there is a history of nitrification in a certain location.
pH	Higher pH is desirable for chloramine stability. Nitrifiers lower pH and this can be an indication of nitrification.	A drop in pH may be an indication of nitrification problems. Both temperature and pH are useful for interpreting the loss of chlorine residual and should be monitored daily.
Temperature	Will not identify nitrification but is a critical factor in the grown of AOB and NOB.	
Dissolved Oxygen	Can confirm nitrification and can be used to investigate nitrification.	Should be monitored monthly but more often if problem areas arise.

These monitoring practices can enable systems to keep nitrification at a minimal level. It is critical to stay ahead because once nitrification problems arise, more steps will have to be taken to clean problem areas and determine the cause. Monitoring records are also very important. Sudden changes in results can give good indication of problems; however, if poor records are kept, there will not be results for comparison.

> Nitrification is a biological process by which ammonia-oxidizing bacteria convert free ammonia to nitrate.

During a nitrification event, there are several steps that can be taken to bring the system back into order. Typically the response is one based on the severity of the nitrification occurrence. Therefore, the level of response should be proportional to the extent of the nitrification event. The typical order of response is:

- Increased monitoring.
- Checking and optimizing ammonia feed rates and chloramine demand/decay.
- Increasing volume turnover in storage tanks.
- Flushing the affected areas.
- Free chlorine burnout of target areas within the distribution system.
- Draining and disinfecting storage tanks.
- Switching to a more stable water source.
- Taking excess storage out of service.
- Free chlorine burnout of the entire distribution system.
- Increasing chloramine residual entering the distribution system.
- Engineering improvements to be considered where necessary.

The fundamental basis of nitrification control is for the rate of AOB inactivation to exceed the rate of their growth. The reason that chloramine demand and decay become important is that the chloramine concentration dictates inactivation rate, whereas the free ammonia concentration dictates the growth rate. Temperature and pH become important because they influence inactivation rate, growth rate, chloramine decay rate and free ammonia release rate. By knowing that (1) the root cause of nitrification is the availability of free ammonia as a substrate to nitrifying bacteria and (2) long detention times contribute to their growth, we can better monitor and produce excellent quality water.

---

[1] AWWA Disinfection Systems Committee 2000 as in L. Harms and C. Owen, *A Guide for the Implementation and Use of Chloramines,* 2004, AwwaRF Report 91018F.

[2] Dr. Philip C. Singer, Editor, *Formation and Control of Disinfection By-Products in Drinking Water* (American Water Works Association : 1999) 172-173.

[3] San Francisco Public Utilities Commission and Public Health Environmental Health Section, *Chloramination Questions and Answers* (2004) 3.

[4] M56 AWWA, *Fundamentals and Control of Nitrification in Chloraminated Drinking Water Distribution Systems* (American Water Works Association: 2006) 1.

[5] M56 AWWA 27.

[6] M56 AWWA 43-52.

[7] M56 AWWA 46.

[8] M56 AWWA 131-145.

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Operators Pass Certification Examinations (March - April 2007)

Congratulations to These Operators!

NAME	EMPLOYER	CERTIFICATE
Barry Arntz	Grand Forks	WD01
Jared Baier	Minot	WWC01
Dell Beach	Beach	WD01, WWT01
Don Berg	Rolette	WD01, WWC01
Ray Berry	Manning Water Board	WD1A
Alan J. Beyreis	Garrison	WT02
Kent Bickler	Ray and Tioga Water System	WT1A,WD02
Troy Bommersbach	Southeast Water Users District	WD03
Brian L. Borden	Grand Forks	WT02
Gary D. Brandt	Cargill Sweeteners	WWT02
Clint Cogdill	Burlington	WD01, WT01, WWT01, WWC01
Jeremy Deitz	Grand Forks	WWC01
Rock Desautel	Grafton	WWC02
Richard Enderud	Dickinson	WWC01, WWT01
Reggie Engh	Minot	WD01
Hal Eschenko	T. Roosevelt Nat'l Pk-North	WT1A, WD1A
David Even	Gwinner	WWC01
Stacey Ferdon	Grand Forks	WWT01
James Fixen	Alexander	WT02
Kevin Flammang	North Prairie RWU-System III	WD01, WT1A
Tom Ganje	Fargo	WWC02
Brock Garaas	Bismarck	WD03, WWC04
Steven Gee	Fargo	WWC02
Bradley Glass	Bismarck	WD04
Todd Gordon	Southwest Water Authority	WD01
Jason Grzadzieleski	Grand Forks	WWC01
Stuart Gullicks	Dakota Water Users North	WD02, WT02
D.G. Hagen	Woodworth	WT01
Mark Haider	Minot	WT01
Dennis Halvorson	Cooperstown	WT1A, WD1A
Chad Hanson	Minot	WWT01
Charles D. Hanson	JR Simplot	WWT1A
Dale J. Hanson	Kenmare	WD01
Kermit Heart	Fort Berthold Rural Water	WT01
Ward Heidbreder	Stanley	WT01, WWT01
Dale Helbling	South Central Regional Water Dist.	WD02
Gary Helland	Pembina	WD01
Bruce Hirchert	New Rockford	WD1A, WT1A
Duane Holien	Cando	WT02
Steven W. Jensen	Williston	WT01
Justin Johnson	Minot	WT01
Justin Lee Johnson	Beulah	WD01

Key

WT=Water Treatment
WD= Water Distribution
WWT= Wastewater Treatment
WWC=Wastewater Collection

Jim Jones	Fargo	WWC02
Elvis Kadrmas	Killdeer	WT01, WD01
Peter Kaliher	Minot	WD03
Sherry Renee Keys	Valley City	WT04
Chad Kjelland	Cass Rural Water District	WD02, WT02
Aaron Knutson	Antelope Valley Station	WT1A
Justin Kohanes	Southwest Water Authority	WD01
Wayne Koltes	Hettinger	WD01, WWC01, WWT01
Bruce Kracht	Valley City	WWT01, WWC01
Clay Kruger	Riverdale	WT01
Walter Lesmeister	New Rockford	WT1A, WD1A
John Lovcik	Rolla	WD1A, WT1A
Christopher Mahaffey	Grand Forks Air Force Base	WWC01
Steven L. Mann	Cargill Sweeteners	WD01
Aaron Marquardt	Dakota Gasification Co.	WT02, WD01
Mike McInnes	Gardner	WD1A
Lori Metz	Montpelier	WD1A
Chad Mittleider	Langdon	WD02
Myron Lee Mogard	Deering	WD1A, WT1A
Gerald Mostad	Minot	WT03, WD01
Donald Nagel	Hague	WD1A
Mason D. Nelson	Valley City	WT1A
Gary Neuberger	Beulah	WD02
Jason Newman	Valley City	WWT02, WWC02
Alan Nitschke	Jud	WD1A
Mark Noonan	Flasher	WWC1A
Leroy Northagen	Fordville Public School	WD1A, WWC1A
Rick L. Olson	Sentinel Butte	WD1A
Thomas P. Orth	Forman	WT1A, WD1A
Robert Oster	Steele	WT02
William H. Osterhaus	T. Roosevelt Nat'l Pk-North	WD01, WT01
Daniel Overmoe	Mayville	WD02
Mark Paddock	Minot	WT03
Percy Puppe	Grafton	WWT02, WWC02
Scott E. Rask	Belfield	WD1A
Robbe L. Reiner	Minot	WD02
Mike Richter	Cargill Sweeteners	WWC01, WWT02
Philip K. Riely	Watford City	WD01
Ellen Rossmiller	Wildrose	WD1A
Keith Rossmiller	Wildrose	WT1A, WD1A
Robert Rumohr	Cargill Sweeteners	WWT02
Milo Sanderson	Flaxton	WT1A, WD1A
Wade Schaner	Dakota Gasification Co.	WT02, WD01
Andrew Schiele	Karlsruhe	WT1A, WD1A
Sheena Schmeets	Leeds	WWC 01
Trevor Seelig	Lisbon	WT1A, WD1A
Sam Shutt	Minto	WT02, WD02

Bruce W. Sloan, Jr.	Dakota Gasification Co.	WT02, WD01
Dean Smith	Ray and Tioga Water System	WD1A, WT1A
Arik Solheim	Hatton	WWC01
Jason Sorenson	Minot	WT03
Christopher Soulies	Grand Forks Air Force Base	WD01, WWT01, WWC01
Gordon Strandemo	Center Mine (BNI)	WD1A, WT1A
Darrell Sweep	Fargo	WD02
Randolph Thielman	Dakota Gasification Co.	WD01, WT02
Guy Thomas	Fargo	WWC02
James L. Thomas	Cando	WT1A
Jeff Thomas	Rolla	WD1A, WT1A
Jeff L. Trana	Devils Lake	WD03
Lloyd L. Veil	Streeter	WT02
Joel Vivier	Rolla	WD1A, WT1A
Michael Weaver	Fargo	WWC02
Eric Westman	Sawyer	WT1A, WD1A
Darin Wetzel	Verona	WT1A, WD1A
Stephen Wieser	Richardton	WWC01
Brian J. Wright	Watford City	WT1A, WD1A

Key

WT=Water Treatment
WD= Water Distribution
WWT= Wastewater Treatment
WWC=Wastewater Collection

Online Site Registration Now Open for World Water Monitoring Day™ 2007

Online site registration is now open for World Water Monitoring Day (WWMD) 2007. Held annually from September 18 through October 18, WWMD is an international outreach program that builds public awareness and involvement in protecting water resources around the world by engaging communities in performing monitoring tests on local rivers, streams, estuaries and other water bodies.

"This program is an excellent way of demonstrating the role each of us has in the health of our water supply and the importance of working together to preserve it both now and in the future," said Bill Bertera, Executive Director of the Water Environment Federation (WEF).

An easy-to-use test kit allows everyone from children to adults to sample local water bodies for a core set of water quality parameters including temperature, acidity (pH), clarity (turbidity) and dissolved oxygen. Field results are then put into an international database and summarized on the program's Web site.

"Last year we collected data from 3,900 sites in 39 countries and hope to build upon that success," said Linda Kelly, WEF's Managing Director of Public Communications. "In 2007 we're aiming for 6,000 sites with a goal of engaging one million people in monitoring their local waterways by 2012."

Designed to be an accurate, yet accessible technology for all levels of experience, the WWMD kits ($13.00 plus shipping & handling within U.S.; international costs may vary) contain a step-by-step instruction booklet, one set of hardware (collection jar, pH test tube, DO vial, Secchi Disk decal and a thermometer) and enough pH and dissolved oxygen reagent tablets to perform 50 tests. A Material Safety Data Sheet is also included.

For more information about the program, site registration and to order monitoring kits, please visit www.WorldWaterMonitoringDay.org.

About WEF: *Formed in 1928, the Water Environment Federation (WEF) is a not-for-profit technical and educational organization with 32,000 individual members and 80 affiliated member associations representing an additional 50,000 water quality professionals throughout the world. WEF and its member associations proudly work to achieve the mission of preserving and enhancing the global water environment.*

Minutes
NDWPCC Joint Board Meeting
May 23, 2007

Mandan, ND

A meeting of the Joint Board of Directors of the North Dakota Water and Pollution Control Conference (NDWPCC), North Dakota Water Environment Association (NDWEA), North Dakota Chapter of the American Public Works Association (NDCAPWA) and North Dakota Section of the American Water Works Association (NDAWWA) was held on May 23, 2007, in the Cutty Sark Room of the Seven Seas Inn. The meeting was called to order at 10:34 a.m. by NDWPCC President Mark Blonigen. Copies of the agenda, along with copies of several agenda items, were provided to those in attendance. The following board members and guests were present: Lisa Ansley, Sarah Baehurst, Mark Blonigen, Brian Blotsky, Gary Bracht, Mike Brisben, David Bruschwein, Kevin Bucholz, Joe Ferguson, Greg Ficek, Duane Friesz, Bill Gefroh, Christopher Hill, Brett Jochim, Jack Long, Karla Olson, Tim Paustian, Skip Rapp, Rusten Roteliuk, Kim Rudningen, Terry Rust, Dean Sletten, Gregg Stewart, Larry Thelen, Richard Wanner, Haley Watson and Greg Wavra.

President Blonigen entertained a motion to dispense with the reading of the minutes from the January 31, 2007 Joint Board Meeting and to accept the amended copy included in the handouts. Mike Brisben noted the error in the October 27, 2006 date. Terry Rust moved to dispense with the reading of the minutes. Richard Wanner seconded. There was no discussion, and the motion carried.

President Blonigen called for the Treasurer's Report. Mr. Brisben reported income from October 1, 2006, through April 30, 2007, was $140,937.93, and expenses were $127,238.06. This resulted in a net gain of $13,699.87 and leaves the Conference with a net worth equaling $55,580.89. Mr. Brisben indicated the NDWEA share will be transferred to a joint account at the end of the fiscal year. Bill Gefroh moved to approve the report as presented. Skip Rapp seconded. There was no further discussion, and the motion carried.

President Blonigen called for the first item of old business. Mr. Brisben reported that all Conference bank accounts were transferred to BNC National Bank.

Continuing with old business, President Blonigen called for a report from the Bylaws Committee. Larry Thelen reviewed the Committee's objectives and outlined the recommendations highlighted in the handouts. Skip Rapp expressed concerns that some firms/companies might have an advantage if the once-in-five year requirement is removed from the Associate Director's term.

Mr. Thelen indicated there has not been a problem over the last ten years getting different companies to fill the Associate Director position. Jack Long noted the language was removed so as not to hinder the Executive Committee should volunteers not be available. Mr. Long noted that the selection would remain in the hands of the Nominating Committee. Terry Rust asked if the changes would be voted on at the Annual Meeting. Mr. Thelen said the recommended changes would be mailed to the members 30 days prior to the conference and voted on during the Friday business meeting. Mr. Long noted that, since the constitution and bylaws were incorporated into the same document, the Committee took the liberty of amending both. President Blonigen called for a motion to approve the changes and the mailing. Skip Rapp so moved. Terry Rust seconded. There was no further discussion, and the motion carried.

President Blonigen called for the next item of old business. Mr. Thelen reported that the conflict of interest policy was recommended by the Conference's accountant while preparing last year's income tax report. Mr. Thelen noted that the Committee used the Association of State Drinking Water Administrators (ASDWA) policy as a guideline and recommended that it be a stand-alone policy rather than written into the bylaws. Mr. Gefroh asked for clarification on the 5 percent excess in material interest for a family

member or responsible person and the $200 gift/entertainment activity. Mr. Long provided examples of both outside interests and outside activities. President Blonigen called for a motion to accept the conflict of interest policy as written. Lisa Ansley so moved. Brett Jochim seconded. There was no further discussion, and the motion carried.

Ms. Ansley next reported that the Auditing Committee had met with Mr. Brisben and Darin Billing to review the FY06 financial report and Conference books. Ms. Ansley noted that all was in order and that the Committee had approved the FY06 financial report.

President Blonigen asked for discussion on hospitality rooms at the Fargo conference. Mr. Brisben stated that he had not heard from Jack Hendrickson or Rick Gillund, and he would work with the Local Arrangements Committee.

President Blonigen called for any other old business. Hearing none, President Blonigen then called for new business. Mr. Brisben reported that the Local Arrangements Committee met May 8, 2007, with 13 members in attendance. The next meeting will be scheduled in early August to finalize arrangements for the fall conference. Mr. Brisben next reported that a meeting with the Convention Center was also held on May 8, 2007, and that the Holiday Inn will hold 190 rooms at a rate of $85.95 plus tax. The remaining rooms will be released September 23, 2007. Mr. Gefroh asked what the rate was during the last conference in Fargo. Mr. Brisben indicated that rates were $75.95 in 2004.

President Blonigen called for the next item of new business. Mr. Brisben noted that an email from Eric Dodds was included in the handouts. Mr. Dodds is asking the Joint Boards to support a student and young professional reception during the Annual Conference. Mr. Long introduced Haley Watson and Chris Hill, student members from the NDSU WEF/AWWA Chapter. Mr. Hill asked permission to address the joint boards and provided the members with many details regarding the student group's activities. Mr. Hill indicated that the chapter was established in 1995 and has developed a constitution and bylaws within the last year. Mr. Hill and Ms. Watson showed the members a copy of the chapter's first annual report and said they would make it available to anyone who is interested. Further discussion included the chapter's commitment to present on the Water Environment Federation Technical Exhibition and Conference (WEFTEC) design competition during the 79th Annual Conference and develop a Poster Session for the 2008 Regional Surface Water Conference in Fargo. Mr. Hill indicated their goals were to be more involved, more structured and add to their membership. Mr. Jochim applauded the group for their commitment and asked if they had considered including UND and other colleges.

Mr. Hill and Ms. Watson indicated they were looking beyond just NDSU, and they would welcome the competition from UND and South Dakota. They indicated that they were currently working on a joint venture with the University of Manitoba. Further questions regarding the NDSU Chapter's interest in the annual meetings in Bismarck and Minot, as well as the need for financial assistance, were raised. Mr. Hill and Ms. Watson noted they would like to attend all meetings; however, the Fargo meeting would be the easiest for most members. President Blonigen stated that Mr. Dodds was hoping for input and support from the joint boards. President Blonigen appointed Mr. Dodds to chair the Student and Young Professional (S&YP) Reception Committee with Mr. Hill and Ms. Watson helping to organize the program. Mr. Brisben will include notice of the S&YP activities in the registration package. Ms. Ansley recommended the Committee be responsible for solicitation of donations to cover registration fees and the reception. Kevin Bucholz asked if a motion was needed for Conference support. Brett Jochim moved that the Conference include a S&YP social and reception on Wednesday evening at the 79th Annual Convention. Terry Rust seconded. President Blonigen then called for a vote. Further discussion continued on the type of support the Conference would provide. Mr. Long noted there had been a call for a vote. President Blonigen tabled further discussion with Conference support to be determined at a later date after the S&YP Committee had met. President Blonigen reissued the call for a vote, and the motion carried.

President Blonigen opened discussion on topics and speakers. Mr. Brisben reported that he had already received much input. Mr. Brisben asked for a list of names and addresses by June 15, 2007, so presenter packages could be mailed the following week. Mr. Brisben also noted that sponsor and tabletop exhibitor packages would be mailed after the 4th of July. The registration packages will be mailed in mid-August, and the Conference issue of the *Official Bulletin* will be mailed approximately six weeks prior to the conference.

President Blonigen called for any other new business. Kim Rudningen reported that the software for editing the *Official Bulletin* had been purchased, and she passed around some samples of new logos to be used on the cover. Ms. Rudningen indicated she had contacted several graphic design agencies and that prices for a new logo varied from $250 to $400. Mr. Rust asked what other states were doing with their newsletters. Mr. Thelen shared that he receives several state, regional and association newsletters with each being different. Further discussion followed with Mr. Gefroh referring to the 75th Conference and NDWEA logos. Ms. Rudningen indicated that she knew the person from the design agency who had supplied the samples and, if approved, the price would be discounted $50 and could be purchased for $200. Questions concerning copyrighting and trademark followed with Ms. Rudningen saying that either could cost as much as $2000. Terry Rust moved to accept the logo selected. Joe Ferguson seconded. There was no further discussion, and the motion carried.

President Blonigen offered special thanks to Mr. Hill and Ms. Watson for attending, and called for a motion to adjourn. Dean Sletten so moved, and Bill Gefroh seconded. The meeting adjourned at 11:50 a.m.

The NDWEA can be thanked for the refreshments and noon luncheon.

Respectfully submitted,

Mike Brisben
Secretary/Treasurer

Operator Certification Exams Scheduled

The summer Operator Certification Exam session will be held on Tuesday, July 31, 2007, at the Environmental Training Center located at 2369 East Main Avenue in Bismarck. Examination times will be from 8:00 a.m. to 4:00 p.m. Please note: To ensure adequate time for exams, testing must begin by 11:00 a.m. Please indicate time of arrival on exam application form. If you don't have a copy of the registration form, you can print one by visiting: http://www.ndhealth.gov/mf/forms/Operator_Certification_Application.pdf. Renewal fees must be paid prior to testing.

Please contact Craig Bartholomay at the North Dakota Department of Health at 701-328-6626 with any questions regarding operator certification and/or exams.

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Minutes
North Dakota Water Environment Association
May 23, 2007

Executive Committee Meeting

The Executive Committee for the North Dakota Water Environment Association (NDWEA) met at the Seven Seas in Mandan on May 23, 2007. Present were President Richard Wanner, Vice President Seth Lynne, Past President Gary Bracht and Secretary/ Treasurer Bill Gefroh. Also attending were Operations and Safety Committee members Terry Rust and Skip Rapp and NDWEA member Karla Olson.

The meeting was called to order by President Wanner at 12:35 p.`m. The minutes of the meeting held on January 31, 2007, were distributed via email to the NDWEA Executive Committee members or by paper copy to the NDWEA members present at the meeting who did not receive the minutes by email. President Wanner requested a motion to dispense with the reading of the minutes and approve the minutes as distributed. Seth Lynne so moved, and Gary Bracht seconded the motion. There was no discussion, and the motion carried.

Bill Gefroh then presented the Treasurer's Report, which reviewed in detail all the receipts and expenses from October 1, 2006, to April 30, 2007. The NDWEA net worth as recorded in the report was $9,037.28, as compared to $9,843.71 last year at this time. President Wanner requested a motion to approve the report as presented. Gary Bracht so moved and Seth Lynne seconded the motion. There was no further discussion, and the motion carried. Bill Gefroh reported that the current NDWEA membership is at 122, compared to 93 this time last year.

Old Business

Potential topics and speakers were discussed for the 2007 North Dakota Water and Pollution Control Conference (NDWPCC). The topics and presenters that were suggested are:

1. Sanitary Odor Control Case Study Update - Seth Lynne, Ulteig Engineers
2. Wastewater Odor Control - Bill Gefroh, Bismarck
3. Biosolids Rules and Regulations - Bob Brobst, EPA
4. Stormwater Rule Update - Randy Kowalski, North Dakota Department of Health (NDDH)
5. Fats, Oil and Grease Control - Bill Gefroh, Bismarck
6. Trouble Shooting Lagoons Update - panel discussion with Terry Rust – West Fargo; Roger Rapp - Dickinson; Karla Olson – Ulteig Engineers; Gary Bracht - NDDH; and Bob Brobst - EPA
7. Utility Financing and Rates - Eric Dodds, AE2S
8. Industrial Pretreatment 101 - Terry Rust - West Fargo and Gary Bracht - NDDH

In 2007, the NDWEA sponsored North Dakota State Science and Engineering Fair (NDSSEF) awards for two outstanding projects related to water quality. The water projects awards were presented to Nolan Meidinger from Linton Junior High School (junior division) and Krissandra Jentz from Hankinson High School (senior division). These awards consisted of a plaque and a $75 cash prize for each recipient.

NDWEA sponsored the Stockholm Junior Water Prize, the most prestigious youth award for a water-related science project. The winner was Ben Sun. His project is Visualizing the Invisible – A Long-term Study of the Water Quality of the Red River and Assessment Using Microsoft Visual Basic. Ben will represent North Dakota at the national competition on June 21-23, 2007, in Phoenix, Arizona. Thanks to Wei Lin, Eric Dodds, Tom Welle, Chris Hill, Skip Rapp and Haley Watson for judging at the NDSSEF.

Thank-you contribution letters to NDWEA were received from the Water Environment Research Foundation, Gateway to Science in Bismarck and River Keepers in Fargo.

New Business

In 2007, NDWEA would like to present the Burke Award. The Burke Award is a WEF safety award presented every three years to a facility or community. The facility is required to apply for this award. Included with the Burke Award plaque is a cash prize of $100 to be used for the purchase of equipment or training material for the facility's safety program.

Applicants for the Burke Award will be solicited in June 2007.

NDWEA would like to present the Select Society of Sanitary Sludge Shovels Award in 2007 to a few select NDWEA members. An attempt will be made to contact all previous recipients to poll them on the nominees as drafted by Awards Committee Chair Skip Rapp.

Several NDWEA members have recently applied for the Quarter Century Operator Club Award. The yearly deadline for getting applications to WEF is July 1. Starting in 2007, NDWEA will have this information and applications available at the tabletop display at the annual NDWPCC. Members who meet the minimum criteria are encouraged to apply to WEF for this award. Quarter Century Operator Club awards will be presented at the NDWPCC annual banquet.

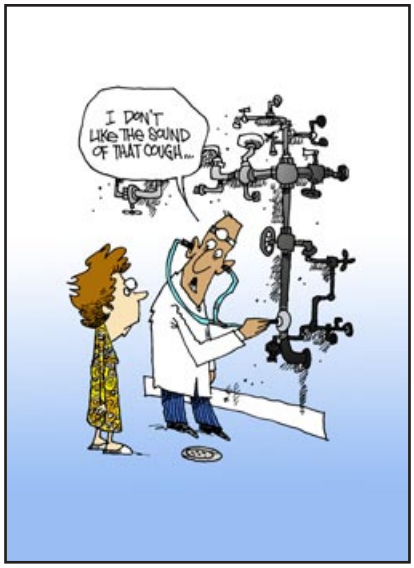
The NDSU student chapter plans to compete at the design competition at the Water Environment Federation Technical Exhibition and Conference (WEFTEC) in 2007. This year, WEFTEC will be held from October 13-17 in San Diego, California. Seth Lynne made a motion to provide up to $150 for banquet meal tickets for the students and their advisors who participate in the design competition at WEFTEC. Gary Bracht seconded the motion, and the motion carried.

NDWEA plans to survey conference attendees on a list of topic ideas to identify their interest for future NDWPCC presentations. A two-page list of potential topic ideas has been drafted. To solicit more input from attendees, Bill Gefroh made a motion that NDWEA hold a drawing from those who submit their survey and provide up to a $50 prize. Seth Lynne seconded the motion, and the motion carried. The survey will be in the NDWPCC registration packets.

With no further business, the meeting adjourned at 1:40 p.m.

Respectfully submitted,

Bill Gefroh
NDWEA Secretary/Treasurer



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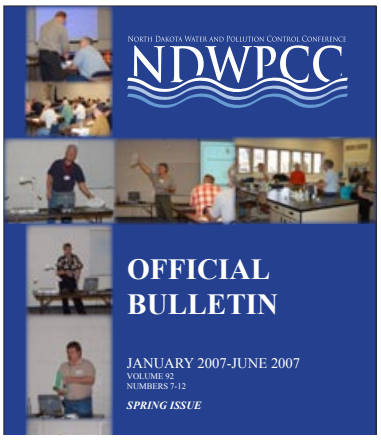

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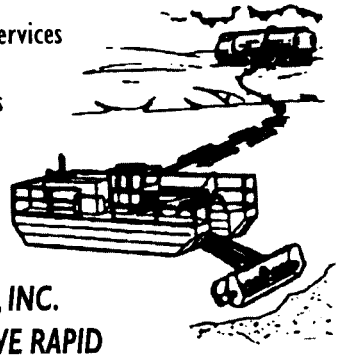

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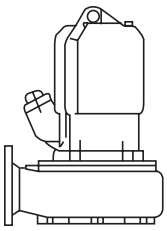

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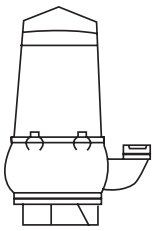

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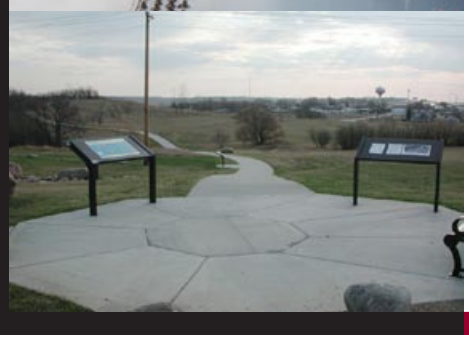

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Filter and Backwash Recycle Rule	Gary Stefanovsky	701-328-5287
Fluoride Addition	Katie Luther	701-328-5258
Groundwater Rule	Gary Stefanovsky	701-328-5287
Inspections: Northeast	Gregg Stewart	701-328-6621
Inspections: Northwest	Bob Markhouse	701-328-6623
Inspections: Southeast	Darin Billing	701-328-6624
Inspections: Southwest	Kim Rudningen	701-328-6627
Lead and Copper Rule	Katie Luther	701-328-5258
Surface Water Treatment Rule: Interim Enhanced, Long Term 1 Enhanced, Long Term 2 Enhanced	Greg Wavra	701-328-5224
Microscopic Particulate Analysis (MPA), (ground-water under the influence of surface water)	Gary Stefanovsky	701-328-5287
Nitrate/Nitrite Program	Katie Luther	701-328-5258
Operator Certification	Craig Bartholomay	701-328-6626
Operator Training	Mike Brisben	701-328-6622
Pesticides	Brian Blotsky	701-328-5221
Primary and Secondary Inorganics	Brian Blotsky	701-328-5221
Public Notice Rule	LeeAnn Tillotson	701-328-5293
Radionuclide Rule: Gross Alpha, Total Radium, Uranium	Brian Blotsky	701-328-5221
SDWIS updates (public water system changes: source, treatment, contact info., etc.)	Katie Luther	701-328-5258
Total Coliform Rule	Jen Messer	701-328-5295
Unregulated Contaminant Monitoring	LeeAnn Tillotson	701-328-5293
Volatile Organic Chemicals (VOCs)	Brian Blotsky	701-328-5221

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