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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.

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Wellhead Protection and Source Water Protection Areas Available Online

North Dakota Department of Health, Division of Water Quality Staff

Wellhead protection area and source water protection area delineations from the North Dakota Source Water Protection Program are now available online on the North Dakota GIS Hub (www.nd.gov/gis). Two layers are available on the hub, *Community Wellhead Protection Areas* and *Non-Community Wellhead Protection Areas*. The delineations show the land area surrounding a water source, either groundwater or surface water, that supplies a public water system. The delineations can be viewed in an internet browser or downloaded and used in geographic information system (GIS) software. Having the delineations available in this way can be a very effective tool for protecting water supplies of the state, and for water system operators and managers to implement management strategies, contingency plans, and create public awareness. Delineations are completed by North Dakota Department of Health (NDDH) Division of Water Quality staff.

The files are a culmination of the Source Water Protection Program and Wellhead Protection Program. The Wellhead Protection Program (WHPP) is a pollution prevention and management program used to protect underground sources of drinking water. The national WHPP was established under section 1428 of the 1986 Safe Drinking Water Act (SDWA) amendments. The law specified that certain program activities, such as delineation, contaminant source inventory, contingency planning, and source management, be incorporated into state WHPPs, which are

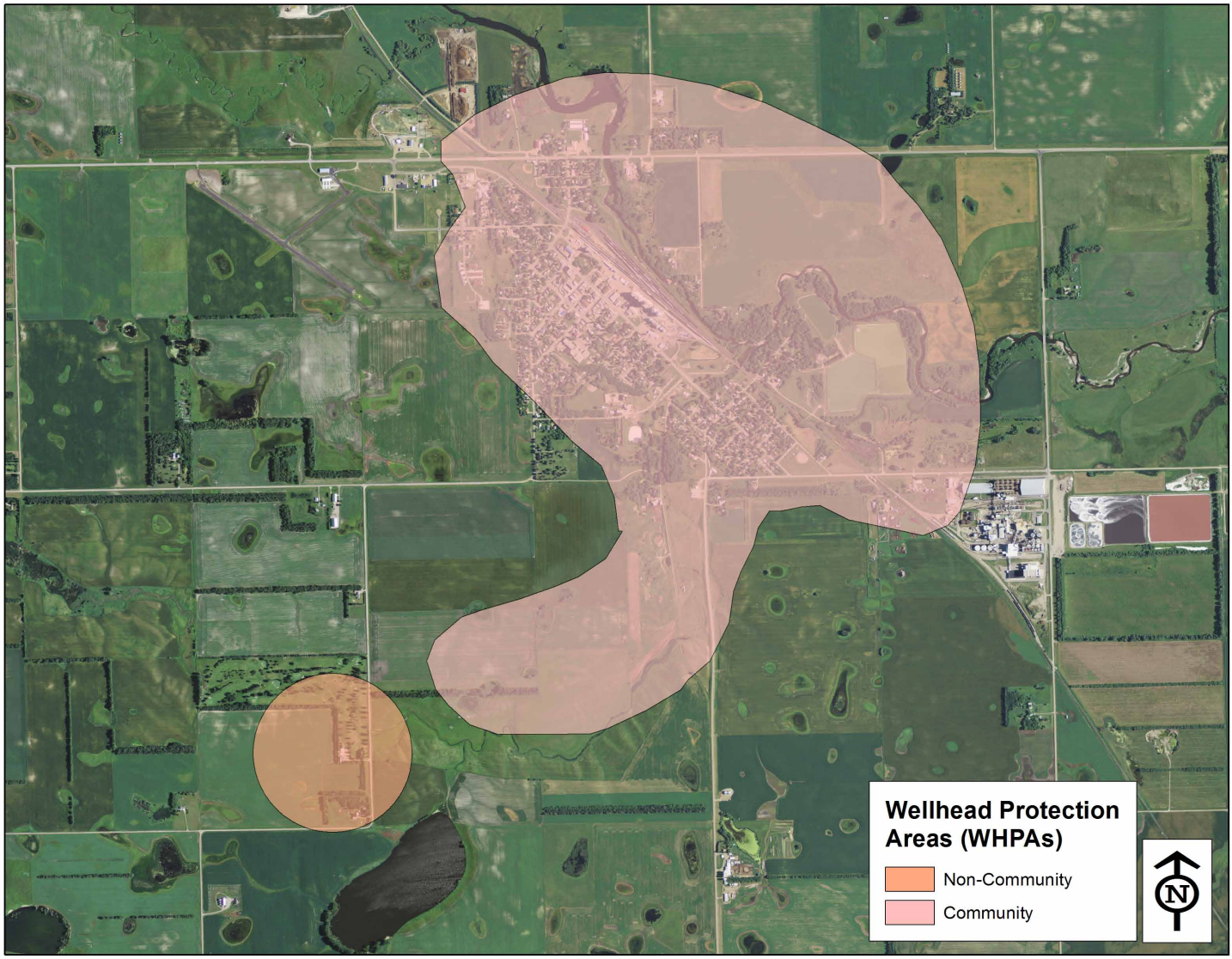

Figure 1. An example of a community and non-community wellhead protection area (WHPA). The Community WHPA is based on a model of the zone of contribution of the wells. Typically, model results are used for community water systems because there is enough geologic and hydrogeologic information to run a computer model. The non-community wellhead protection area shown is based on a fixed radius. In non-community water systems, the fixed-radius method is often used because there is limited information about the well and surrounding hydrogeologic environment.

approved by EPA prior to implementation. North Dakota has an EPA-approved state WHPP. WHPPs provided the foundation for many of the state source water assessment programs required under the 1996 SDWA amendments. The North Dakota Source Water Protection Program (SWPP) was developed in response to the 1996 Safe Drinking Water Act amendments that require all states to define and assess the source waters of public drinking water systems. All public water systems that have wells or intakes are participants in the SWPP. Although they are called by two different names, the goal is the same for both the Wellhead Protection Program and the Source Water Protection Program: encourage the protection of public water supplies, encourage the placement of certain activities in areas less likely to contaminate public water supplies, and raise awareness of water resources used for public water supplies.

Clean drinking water is an important public health concern. Protecting water at the source is the first critical step in a multiple-barrier approach that also includes treatment for contaminants, monitoring to ensure that health-based standards are met, and adequate infrastructure maintenance, especially of distribution pipes that carry water from the treatment plant to customers. An informed public with an understanding that everybody plays a role in water protection is critical to protecting our drinking water now and for the future. To learn how to view the community and non-community WHPA on the GIS hub, see the accompanying article, "How to use the ND GIS Hub Explorer to View Community and Non-Community Wellhead Protection Layers."

To learn more about North Dakota's Source Water Protection Program, see the source water protection status of public water systems, online maps or a list of direct public water contacts, visit http://www.ndhealth.gov/WQ/GW/sourcewater.htm or call the North Dakota Department of Health Division of Water Quality at (701) 328-5210. ♦

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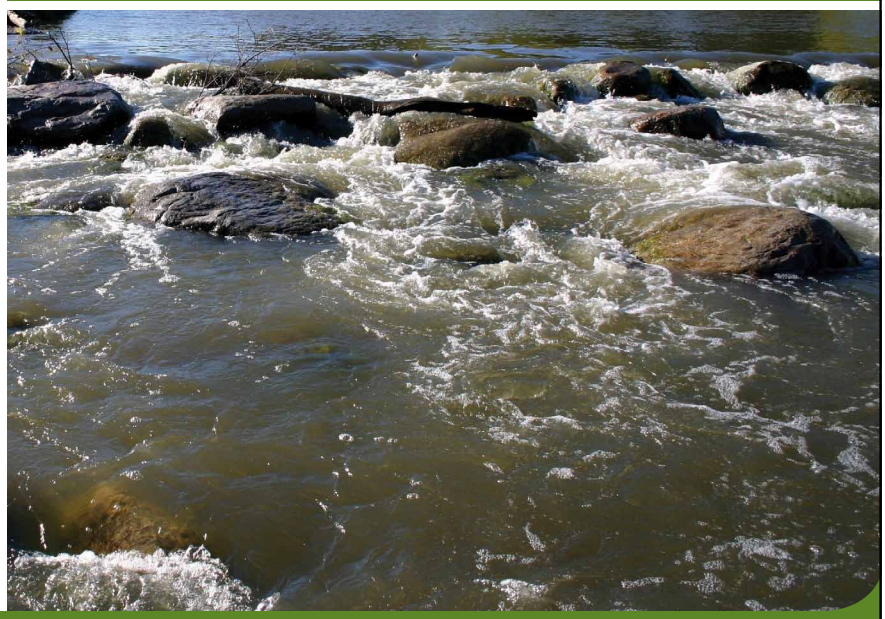

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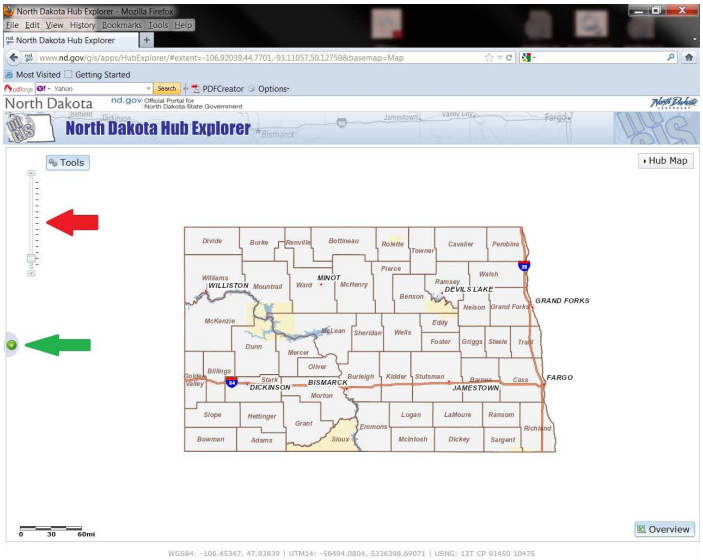
How to Use the ND GIS Hub Explorer to View Community and Non-Community Wellhead Protection Layers

Ann Fritz, North Dakota Department of Health, Division of Water Quality

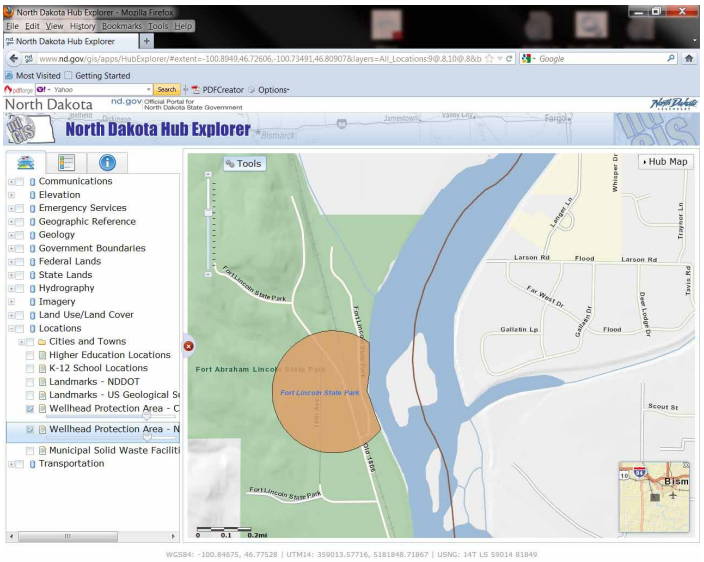
1. Start your internet browser and go to http://www.nd.gov/gis/apps/HubExplorer/. The new Hub Explorer has been tested on a number of browsers including Internet Explorer, Firefox, Chrome (limited testing on Opera and Safari). Please note that if you use Internet Explorer we highly recommend that you use Version 9 with Compatibility View turned off (located to the right of the URL field, it looks like a torn page, it should display as gray) as there are performance and other issues with versions prior to 9.



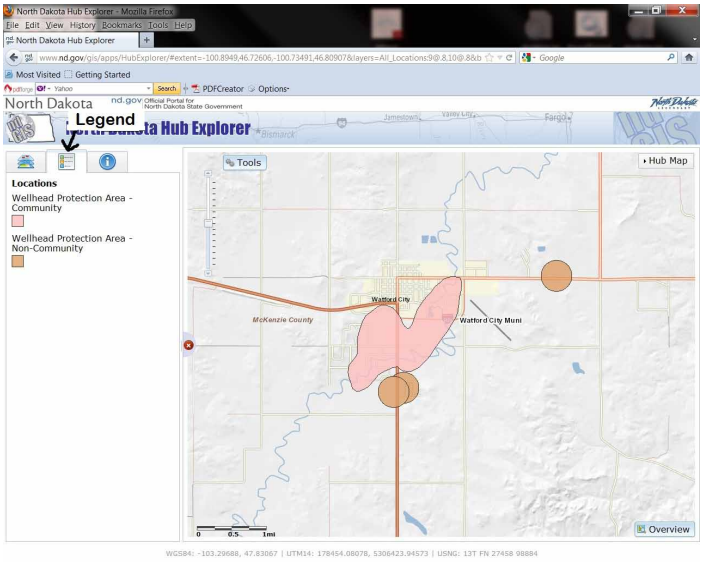
2. A map of North Dakota will appear when you first open the Hub Explorer. You can zoom in or out by either using the roller ball on your mouse or the slider bar (shown by red arrow above) on the left side of the screen. To re-center the map, click and drag to the point of interest. Additional features will appear as you zoom in on the map for a closer look.

3. Click on the green plus sign on the left of the screen (shown by green arrow) to show the list of available layers. The layers are organized in folders of similar data. Click on Locations then check the box next to Wellhead Protection Area-Community and Wellhead Protection Area-Non-Community.

NOTE: You can re-size the width of the Legend or Table of Contents to view the full layer name, or use the scroll bars to view the complete layer name.

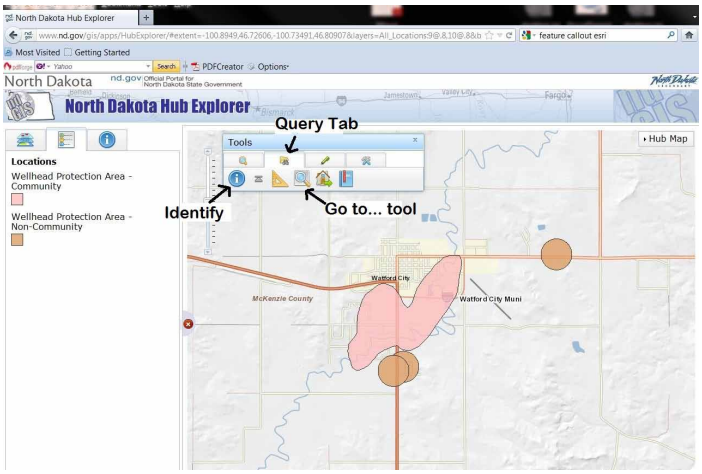


4. The WHPA layers will not be visible at the state level. As you zoom in, the WHPA layers will become visible. You can control the opacity of the layers by using the slider bar that is below the layer name.

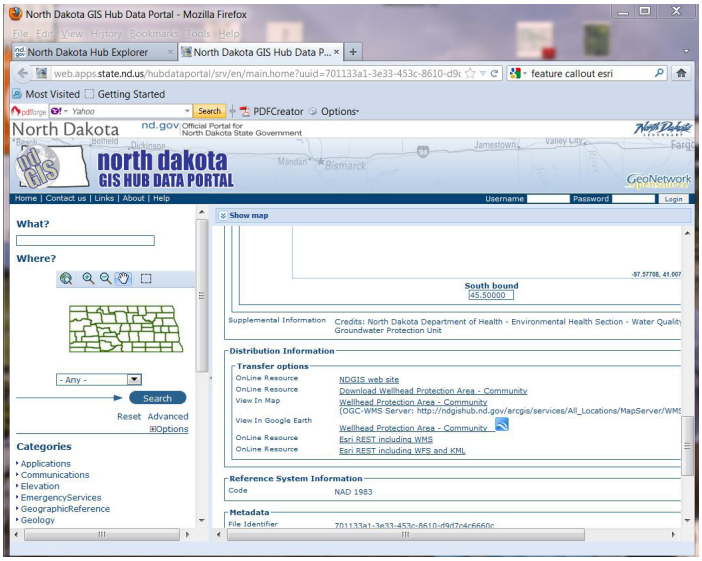


5. To see the legend, click on the Legend tab, which is the center tab as shown above.

NOTE: To see what a tool or tab does on the Hub Explorer, hover your mouse on the item in question and tips will appear.



6. You can search for a particular town by name using the Query Tools. Click on the Tools button, and then click on the Query tab (shown above). You can use the Identify tool to identify the particular wellhead protection layer that is shown or the Go To... tool to search for a particular city or location.



7. To download the Wellhead Protection layers for use in a GIS, click on the icon to the left of the layer name in the table of contents. A new window will open that shows the metadata or information about the data. The distribution information contains the transfer options to view the layers as an online resource, download information (as well as providing WMS and KML file information as shown).

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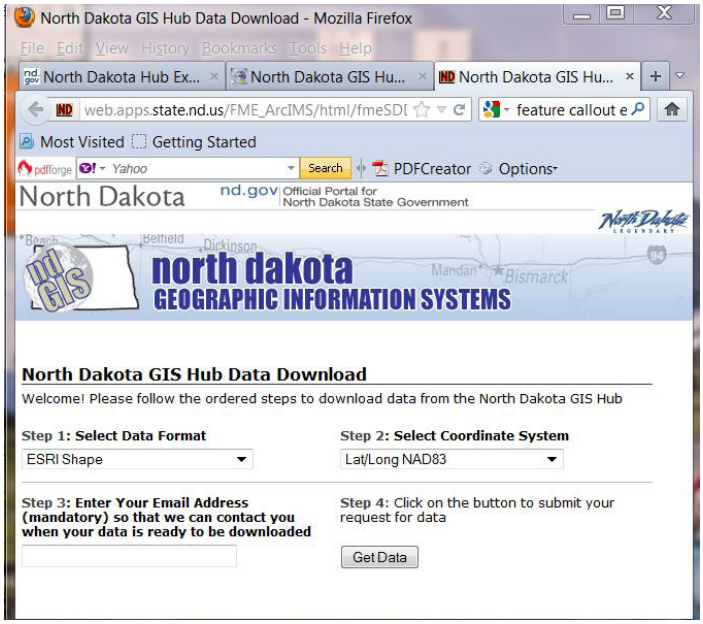

Files can be downloaded in a variety of formats, including ESRI Shapefile and AutoCAD. Simply enter the format desired, the coordinate system and your email address, and then click Get Data as shown above. You will receive an email and be directed to an ftp site when your data is ready to be downloaded.

Data are updated at least twice per year, in the first and third quarters of the year. Check the source date and currentness reference to make sure that you have the most recent data available. ♦

Print Shop Assembly Error

Roughly two percent of the copies of the 2011 winter issue of the *Official Bulletin* may have been assembled with pages 1-2 and 67-68 missing. If you received one of these please let us know and we will send you a replacement copy (contact Katie Luther at 701-328-5258 or kcluther@nd.gov). ♦

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2011 Flood

Missouri River Basin

Examining Source Water Total Organic Carbon And Total Trihalomethanes Data

Lydia Fewless and Bob Markhouse, North Dakota Department of Health, Division of Municipal Facilities

In the past two years, we have seen serious flooding, not just in the east but throughout the entire state. The 2011 Missouri River flooding impacted and challenged water systems receiving raw water from the Missouri River Basin.

Our focus and purpose of this article is to present an overview of total trihalomethane (TTHM) data that has been collected over the years, look for possible trends, and generate discussion to better understand disinfection byproducts (DBPs) formation. Specifically, we examined the 2011 Missouri River Basin flooding and its impact on TTHM formation. The data presented may give engineers, operators, and even regulators additional information to utilize when modifying and optimizing current water treatment processes or designing new water treatment facilities. For information on TTHM results for individual systems prior to 2010, there is an article in the January-June 2010 issue of the *Official Bulletin* (Vol.96). The article can be found at http://www.ndhealth.gov/MF/ under Publications.

A comprehensive understanding of the dynamics and the interactions involved in the DBP formation is complicated and difficult. Factors include disinfectant type and dose, pH, contact time, temperature, the complex nature of natural organic material (NOM) in the source water and TOC removal, disinfectant application points, and distribution system residence time.

Source Water	Number of Systems
Lake	4
Lake to a holding pond	1
River	5
River to a holding pond	2
GWUDI* (River)	1
Total Systems	13

*Figure 1. This table shows surface water systems' (community water systems and non-transient, non-community water systems) source water type. *GWUDI = ground water under the direct influence of surface water.*

With the future tightening of DBP standards, the Stage 2 Disinfectant/Disinfection Byproduct Rule (DBPR), due to be implemented between 2012 thru 2014, systems have and will continue to modify existing water treatment processes. These processes must either be enhanced or supplemented with an additional step(s) to remove a greater fraction of natural organic material (NOM) to reduce the level of DBPs formed and meet Stage 2 DBPR compliance. As the graphs (Figure 2, 3, and 4) illustrate, systems are selecting membrane technology: microfiltration (MF), ultrafiltration (UF), nanofiltration (NF), or reverse osmosis (RO), along with conversion to chloramines.

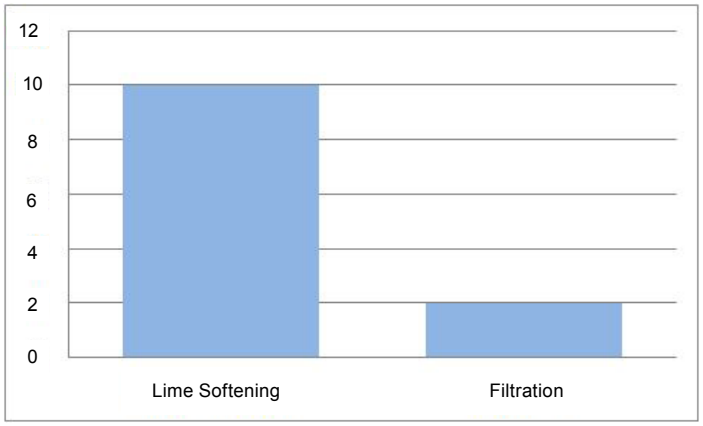

Figure 2. Treatment in place prior to 2000

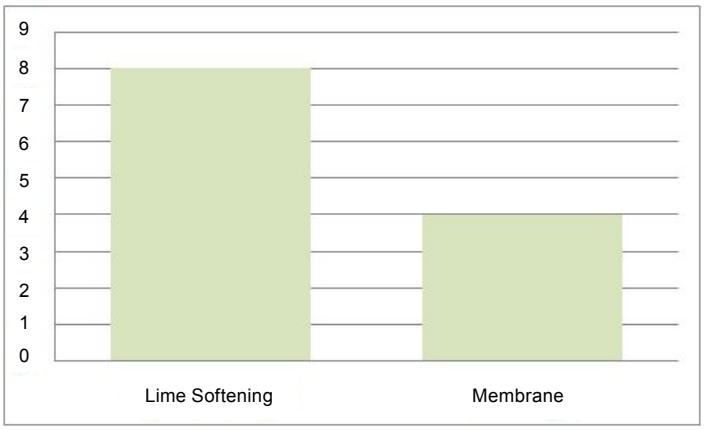

Figure 3. Treatment in place in 2012.

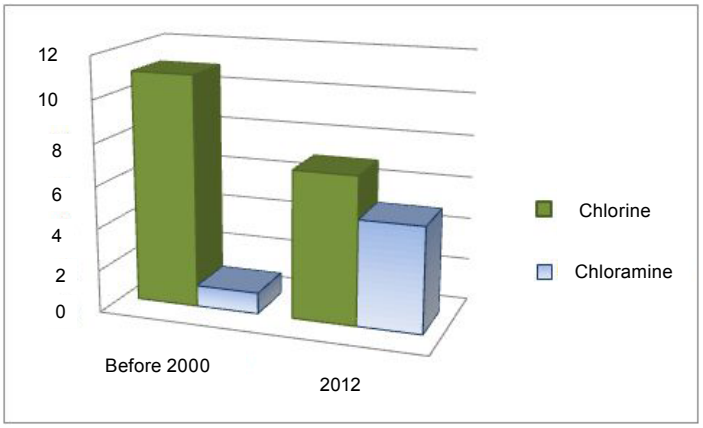

Figure 4. The number of systems using chlorine or chloramine prior to 2000 and during 2012.

Given more stringent byproduct regulations, Figure 4 illustrates that systems are switching to chloramination from free chlorine as a means of limiting DBP formation, especially total trihalomethanes (TTHMs). Chloramine is slower acting as a primary disinfectant versus chlorine and remains viable long after free chlorine has disappeared in the distribution system. The North Dakota Department of Health has not noted any increases in total coliform positive samples after systems start using chloramine as a disinfectant according to Jeni Walsh, Total Coliform Rule Manager.

Figure 5 shows that systems using chloramines have substantially lower TTHM formation versus systems using free chlorine. The figure also shows that all systems experienced large increases in TTHM formation during the flooding of 2011. Both free chlorine and chloramine systems experienced average TTHM sample results about 0.025 mg/L or 0.020 mg/L, respectively, above their long-term averages.

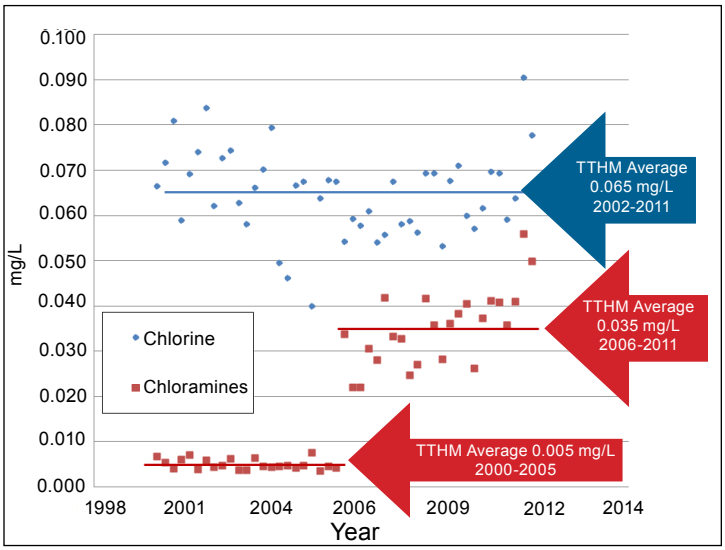

Figure 5. TTHM Averages for Chlorine and Chloramine

Scatter plots (Figure 5) show the comparison of disinfectant type used in treatment and average total trihalomethane levels found in the distribution system. The points on the graph represent average sample results for a designated period. Some systems may take one sample per quarter while other systems may take four samples per quarter.

Note: This is a correction to a previous graph used to compare chlorine and chloramines with TTHM data in the January-June 2010 *Official Bulletin* (Vol. 96).

TTHM average for 2000 through 2005 includes only one system for chloramines. None of the other 12 systems were using chloramines at this time.

Regardless of type of disinfectant used (free chlorine or chloramines), all systems experienced TTHM peaks during 2011. This variability in TTHM may be related to the changes in source water quality and possible increased temperature.

Much research and development has been published on DBP formation and control at the water treatment plant, but little is known about the source and movement of precursors through the watershed to the plant intake. At the present time, samples submitted to the Health Department include only the raw and finished total organic carbon (TOC) analysis, not the specific chemistry of the precursors in the river basin.

Given the small pool of systems and varied treatment technologies, it would be difficult to establish the relationship between raw water TOC concentrations at the plant and TTHM formation in the distribution system. Further investigation might better describe the exact nature of precursors and their relationship to disinfection practices and byproduct formation. It appears that if any correlations are to be made, it would be dependent on plant-specific conditions.

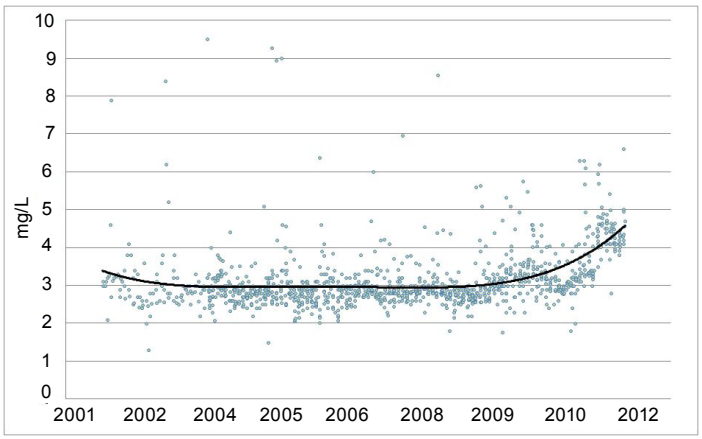

Figure 6. Influent Average TOC Results by Date

Scatter plots (Fig. 6) show the trend of raw water TOC data from 2002 through 2011 for surface water systems using Missouri River Basin water at their plant intakes. The points on the graph represent average sample results for a designated period. Some systems may take one sample per month while other systems may take one sample per quarter. Trend line is polynomial (order=4) using Microsoft Excel 2007.

For the most part, scatter plots show a flat line in the 3 mg/L concentration range. Data from 2009 indicates an upward TOC shift of 50 percent by 2012.

The 2011 record flooding produced observable erosion of the riverbed and banks and deposition of sediment,

a significant problem impacting Missouri River water quality. Systems were seeing higher TTHM levels (>0.080 mg/L MCL) with the higher flows of the Missouri River. Higher flows stirred up organics that reacted with the disinfectant to form elevated byproducts, in particular, TTHMs.

During the flooding, plant operators were required to deal with immediate problems such as increased turbidity and potential contamination in the distribution system that would have been reflected as positive total coliform samples. For some systems, increases in turbidity required changes to plant operations and changes in chemical dosages. These changes likely impacted the formation of TTHMs in the plant and distribution system.

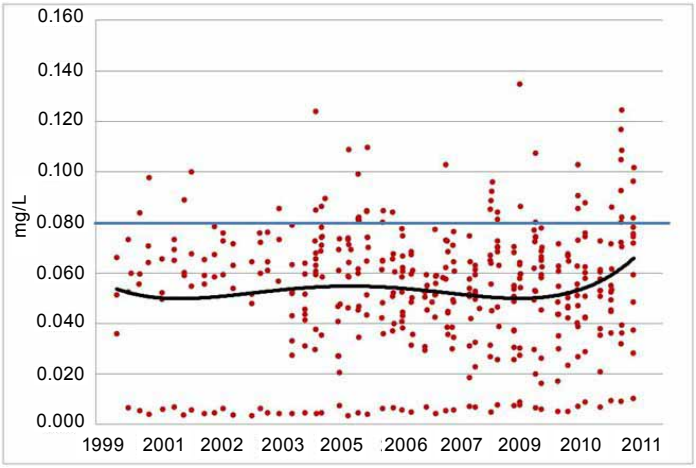

Figure 7. Average TTHM Results by Date

Scatter plots (Figure 7) show the trend of TTHM data from 2000 through 2011. The points on the graph represent average sample results for a designated period. Some systems may take one sample per quarter while other systems may take four samples per quarter.

Most observations fall below the Stage 1 DBPR MCLs (0.080 mg/L). However, two systems did exceed the 0.080 mg/L TTHM MCL for 2011.

Figures 6 and 7 demonstrate an increase in influent TOC and TTHM starting in 2009. This was evident regardless of the type of disinfectant or treatment technologies employed at the different plants.

The distribution system plays an important role in the emerging challenges for maintaining low disinfectant byproduct levels. One system that sees consistently low TTHM sample results utilizes best practices to achieve its goal of providing excellent water quality along, with low disinfectant byproducts. Some of these practices include:

1. Chloramination at the raw water intake
2. Optimization of the water treatment process
3. Regular flushing of the distribution system
4. Regular monitoring of chlorine residuals and ammonia in the distribution system
5. Periodic maintenance and cleaning of storage reservoirs and pump stations.

Figure 8 is a comparison of two lime softening systems and two ultrafiltration systems. The lime softening systems have lower TTHM results when compared to the 11 other Missouri River systems. The two membrane systems were the only systems of the 13 that were using ultrafiltration membranes.

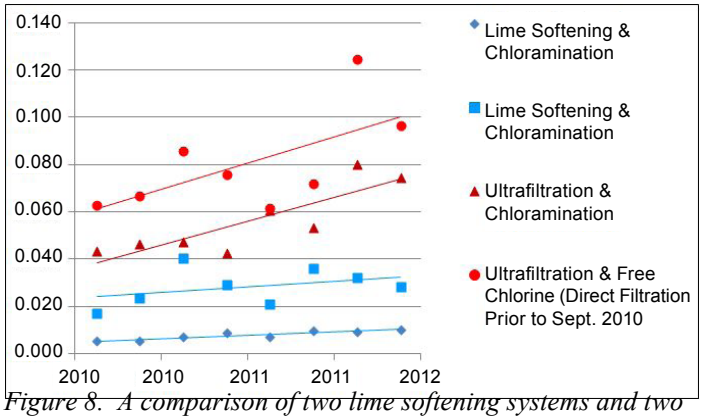

Figure 8. A comparison of two lime softening systems and two ultrafiltration systems. The ultrafiltration and free chlorine system changed from direct filtration to ultrafiltration in September 2010. Trend line is linear.

As Figure 8 shows, the two lime softening systems outperformed the ultrafiltration systems in reducing TTHM. The ultrafiltration membrane system using chloramines had reduced TTHM results when compared to the system using free chlorine.

The flooding of 2011 proved to be challenging to cities and water systems across the state. The 13 systems we examined in the article were all impacted to some degree by the flooding. Lessons were learned. Hopefully, we can move forward with better knowledge to meet the impact of the ever-changing Missouri River Basin. Water utilities must approach the future of water quality monitoring not only from the perspective of "What do I have to do today?" but also "What should I know now so I can be prepared for tomorrow?"

Special thanks to Barrett Brown (Safe Drinking Water Information System-SDWIS) Data Manager, Municipal Facilities-Drinking Water Program for data compilation.

Abbreviations

- DBP Precursors (Disinfection Byproduct Precursors)
- DBPs (Disinfection Byproducts)
- DOC (Dissolved Organic Carbon)
- MCL (Maximum Contaminant Level)
- mg/L (milligrams per liter)
- MRDL (Maximum Residual Disinfectant Level)
- Stage 2 DBPR (Stage 2 Disinfectants and Disinfection Byproduct Rule)
- TCR (Total Coliform Rule)
- TOC (Total Organic Carbon)
- TTHM (Total Trihalomethane)
- CWS (community water system)
- NTNCWS (non-transient non-community water system)

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The *Official Bulletin* Artwork of Wilfred M. Baska

Katie Luther, North Dakota Department of Health, Division of Municipal Facilities

For more than 40 years, the staff of the *Official Bulletin* of the North Dakota Water Pollution Control Conference (formerly the North Dakota Water and Sewage Works Conference) included artist Wilfred Baska.

Wilfred (Willie) M. Baska was born in Mohall, N.D. on January 17, 1917. He moved to Bottineau, N.D. in 1927 and graduated from high school there in 1935. He married Alida Schafer from Underwood, N.D. in 1942, and they had three daughters, Barbara, Gwendolyn, and Ruth.

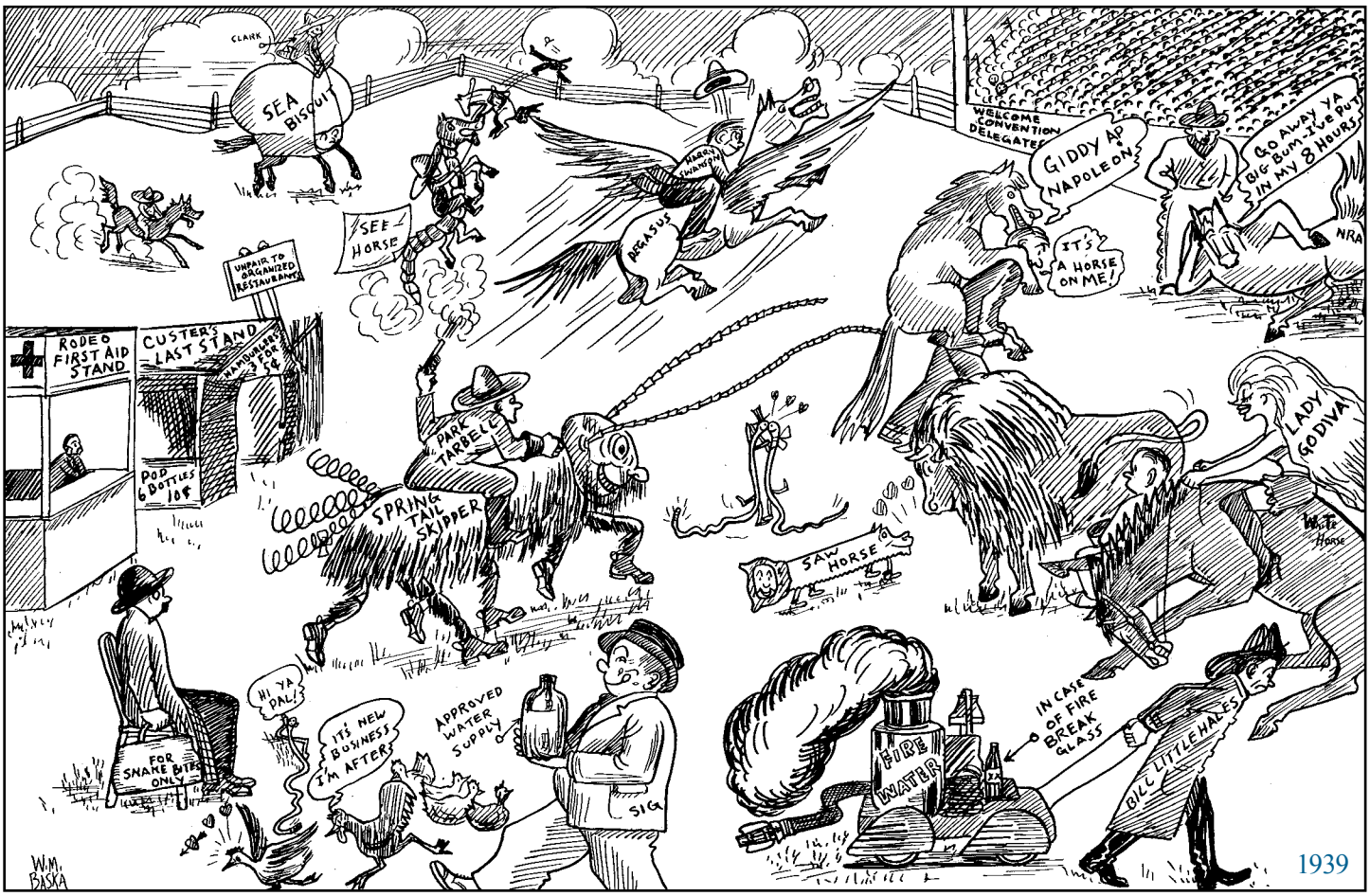
He received two diplomas in Art from the Art Institute of Minneapolis. He was employed for 43 years by the North Dakota State Department of Health, Division of Health Education as a film checker, offset printer, and artist.

As the "official" *Official Bulletin* artist, starting in 1939, he designed and drew portraits, covers, cartoons, and conference convention announcements.

In addition to his work for the *Official Bulletin,* Mr. Baska also did illustrations for a book called *Fur Bearers of North Dakota*, published by the North Dakota Fish and Game Department in 1961. There are surely countless other documented and undocumented illustrations drawn by Mr. Baska during his career.

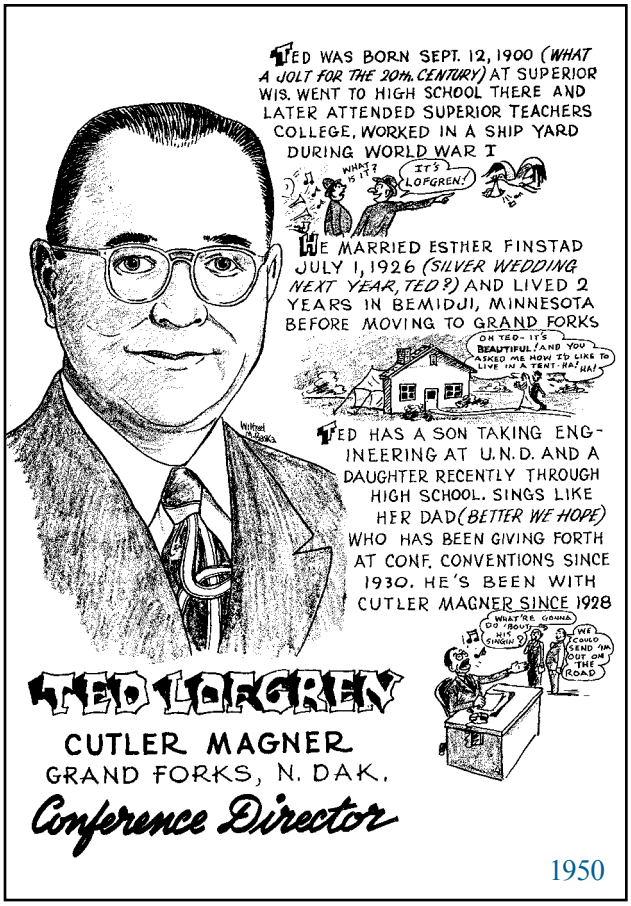
After his retirement in 1982, Mr. Baska lived in Bethany, Oklahoma until his death November 17, 2002.

Continued on page 16



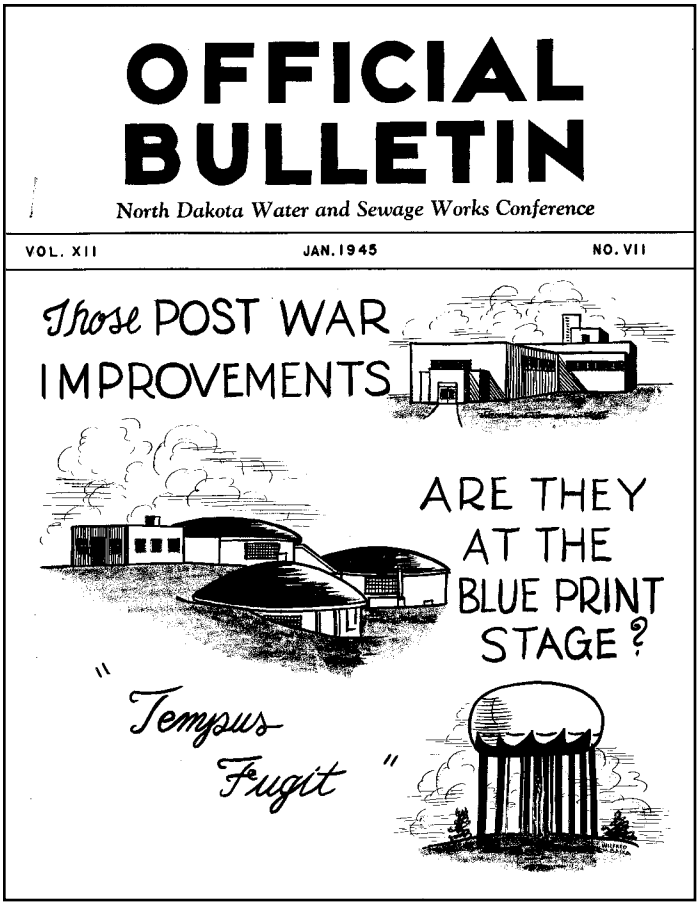
This is Wilfred Baska's first illustration to appear in the Official Bulletin (September 1939). Several active conference members were named and inside jokes referred to. Being an already established tradition for the Official Bulletin, this became a common theme of his work.

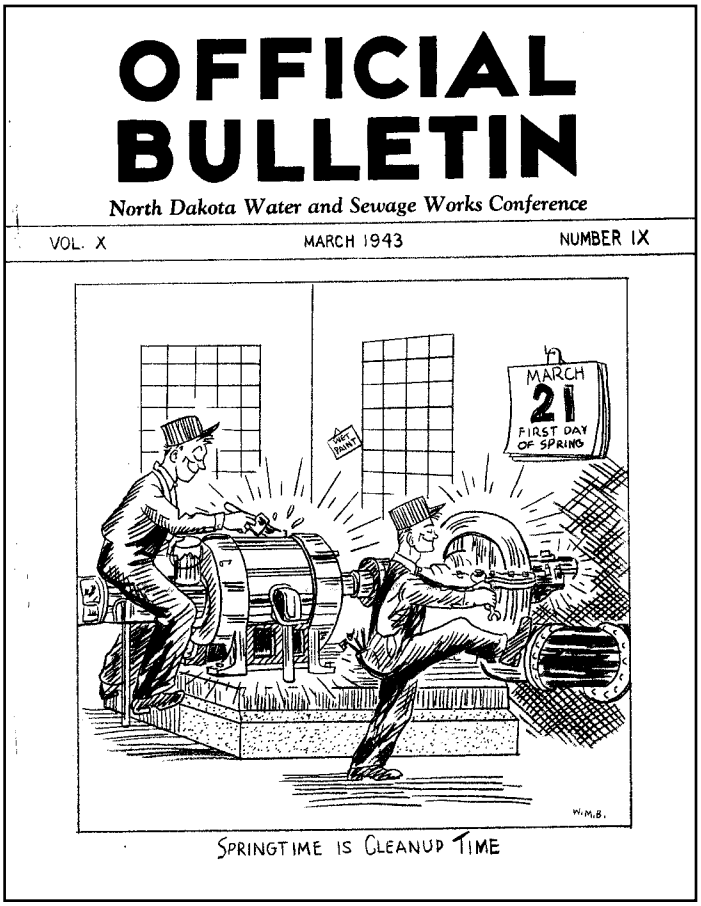
Continued from page 15

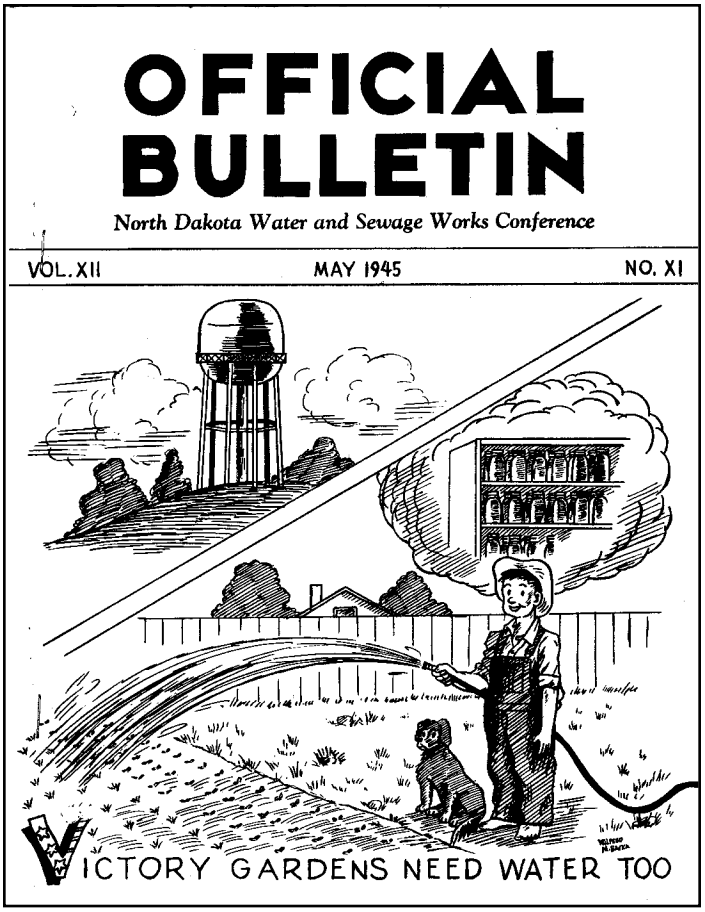


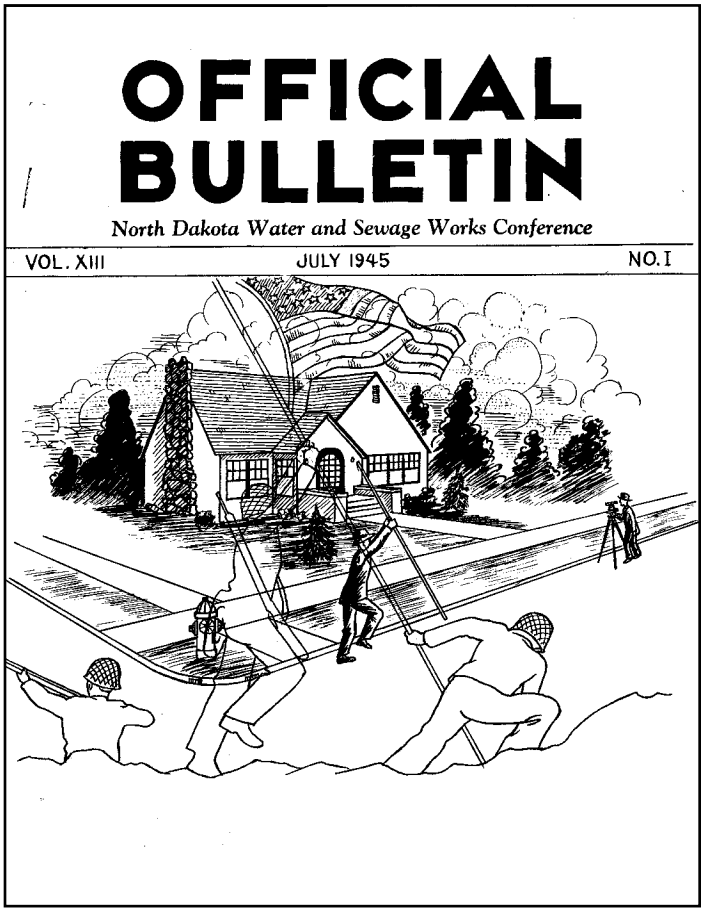
Starting in July 1945, Baska did many portraits with histories of key conference people. These tributes appeared as the last page of many issues, especially those printed in the 1940s and 1950s. One month he did the self-portrait below.

Mr. Baska did many *Official Bulletin* covers, especially in the mid-forties. Here are a few examples:

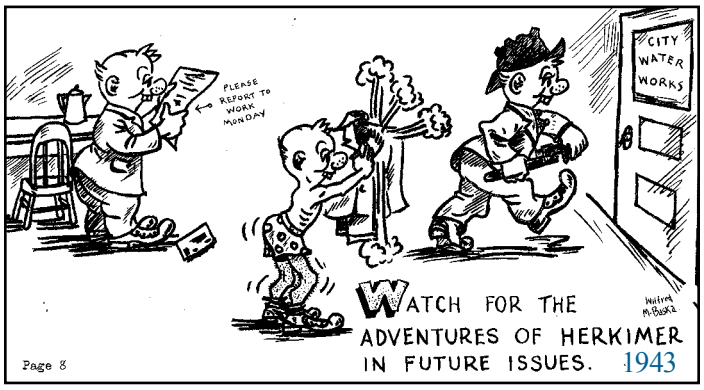


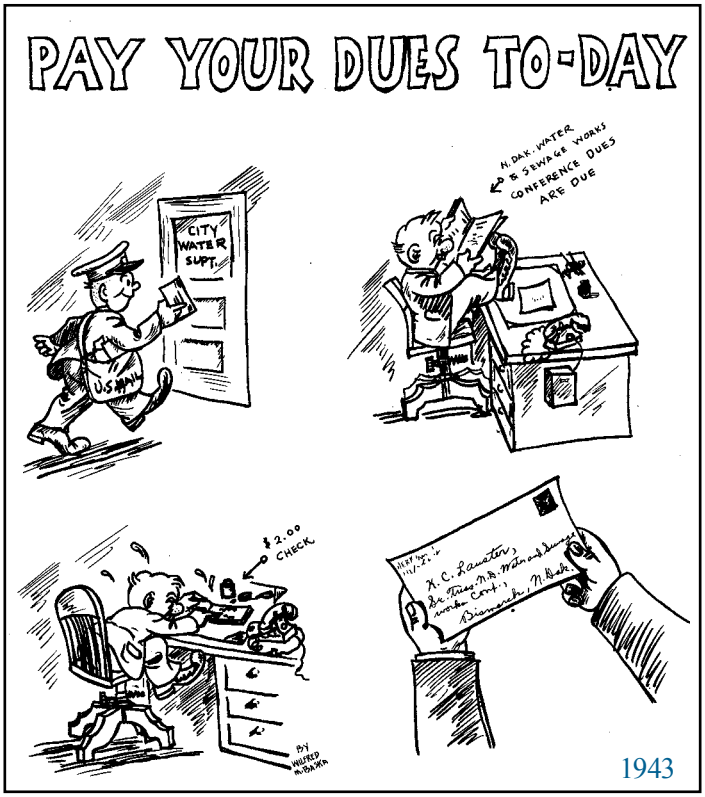


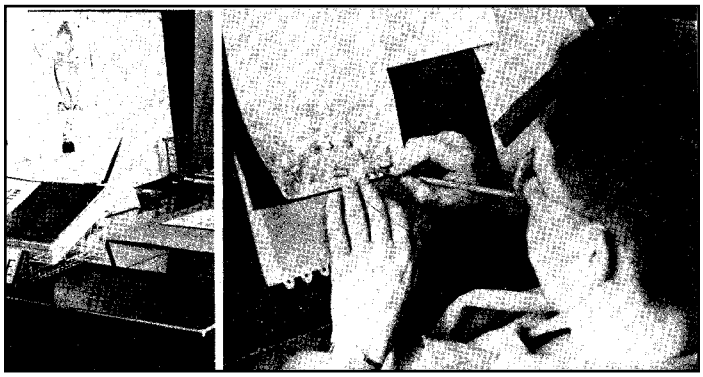




Baska's character Herkimer, the operator, always a straight shooter, was first introduced in November 1943. Herkimer and his faithful and hard-working dog Hector appeared in various formats until 1982, usually setting a good and often humorous example for operators and other members of the conference.

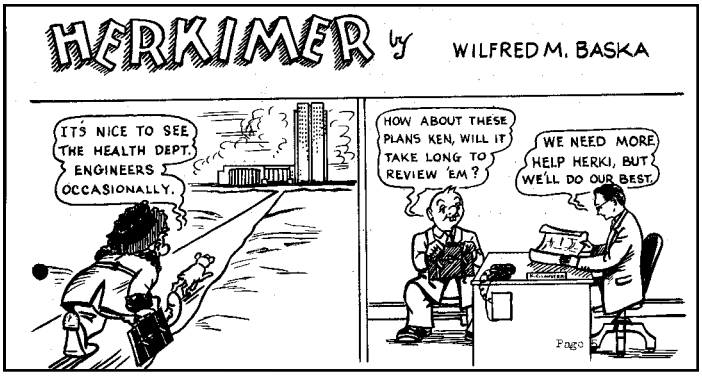


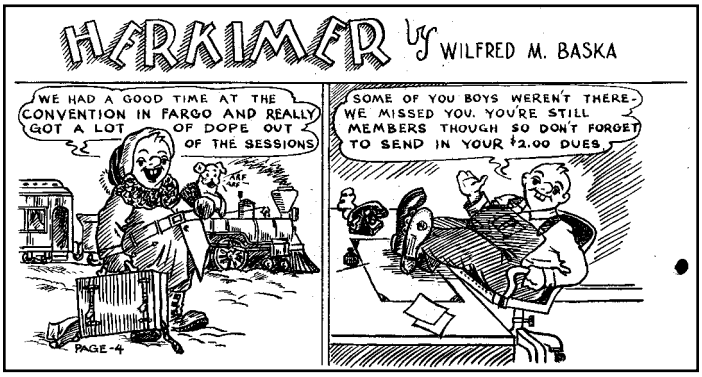


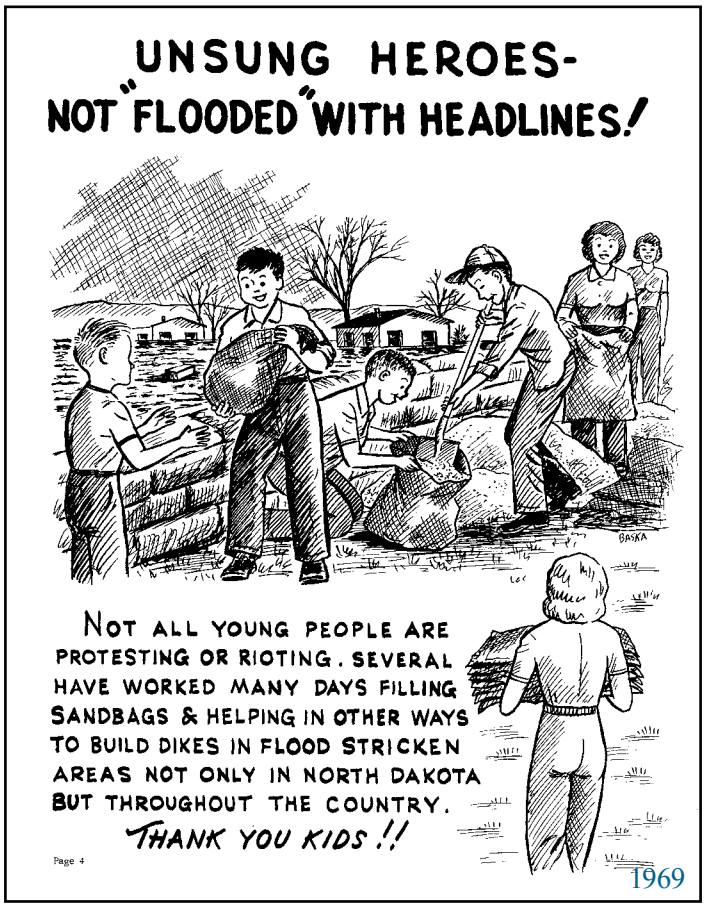


Artist Baska hard at work in 1944.

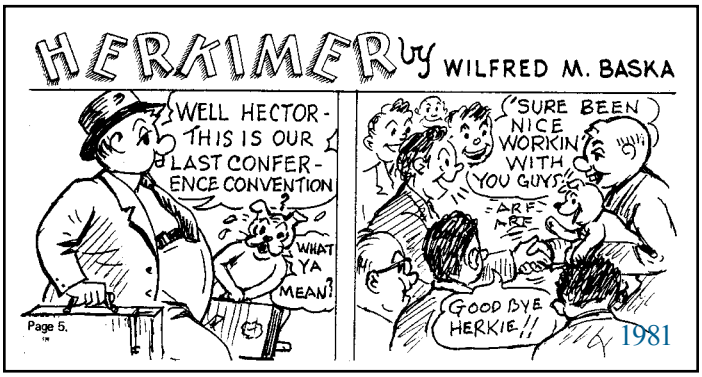
The payment of annual conference dues, review of plans and specifications, and attending the annual convention were just a few of the many relevant issues Herkimer illustrated throughout the years.







Herkie "attended" his final conference convention in 1981, and appeared together with Willie in the July-September 1982 issue of the *Official Bulletin*.



The following is a portion of an editorial by *Official Bulletin* Editor Norman Peterson, July-September 1982:

> "Well, the time has come. Wilfred Baska has retired and Herkimer along with his pooch, Hector, are following suit. Their final appearance is in this issue of the *Bulletin*. There is no doubt that Herkie and Hector's antics and down-to-earth actions in the cartoons probably have been one of the more popular features of the *Bulletin*. Many of us here in the office recall with pleasure the times we, along with Baska, discussed the next activities for Herkie and Hector. Incidentally, it took a long time to convince Herkimer that he should stop wearing the old traditional bib overalls, but he finally conceded to modern times.

However, he did hold firm against going on a diet as is evidenced in this edition's final cartoon.

> "And so an era passed. Certainly all of us are going to miss Herkie and his buddy Hector. I am sure I can speak for all of the *Official Bulletin* readers in wishing Wilfred Baska a very enjoyable and relaxing retirement and extending a sincere thanks from us for all the Herkimers and Hectors that have come to the *Bulletin* in the last 40 years. And to Herkie and Hector, well, to whatever plant you have retired, may the waters always be clean and sparkling, may your

city fathers be understanding and generous, and may your phone never ring except during working hours!"

The current editor of the *Official Bulletin* thinks that it may be time for Herkimer and Hector to come out of retirement. ♦

*Editor's Note: * Hank Ketcham was the creator of Dennis the Menace. "Red Tape" may have been a character in the cartoon series called Half Hitch.*

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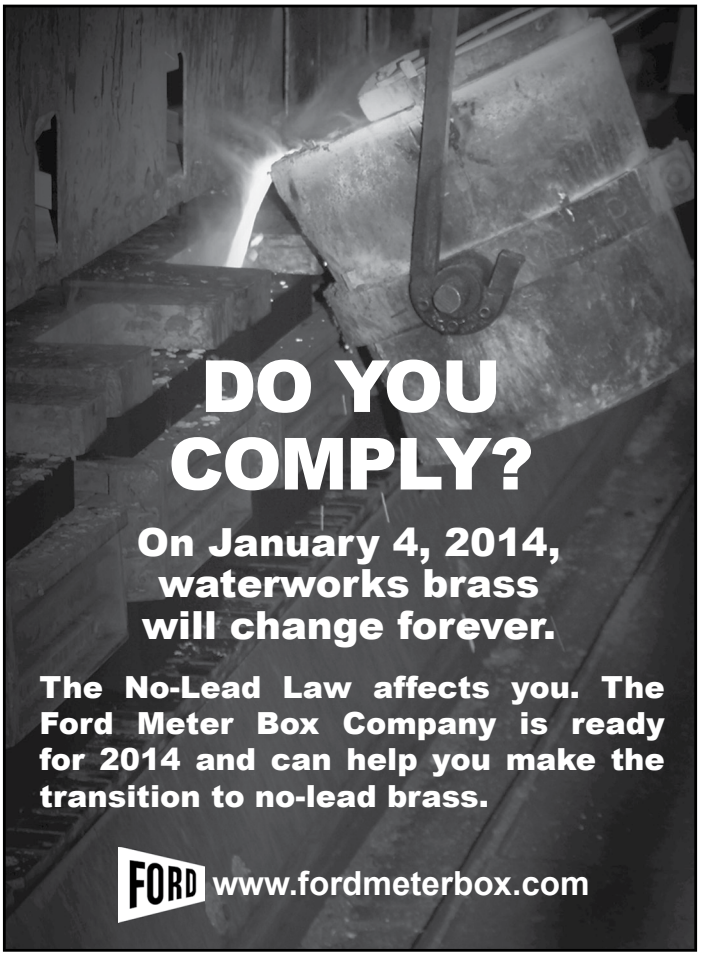

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Mapping Ground Water Rule Requirements

Consumer Confidence Report, Public Notification, and Special Notice

This is the fifth in a series of five short articles developed by U.S. Environmental Protection Agency (EPA), Office of Ground Water and Drinking Water (OGWDW) that summarize key components of the Ground Water Rule (GWR). As with all drinking water rules, please check with your primacy agency for specific state-related requirements.

The first four articles of this series focused on the other main requirements the GWR: Source Water Monitoring, Compliance Monitoring, Sanitary Surveys, and Corrective Action. This final article discusses the new requirements the GWR introduces regarding the Public Notification (PN) Rule, the Consumer Confidence Report (CCR) Rule, and Special Notice.

GWR and Public Notification

The PN Rule specifies how water system operators are to inform consumers of any potential adverse health effects related to the drinking water being supplied to them, and to identify steps that consumers can take to minimize the health impact. Public notification provisions have always been a part of the Safe Drinking Water Act. The GWR has additional PN requirements that apply to all types of ground water systems (GWSs), including consecutive and wholesale systems. Public notification is communicated via three tiers of delivery methods and timeframes depending on the severity of the violation or situation. A summary of the tiers and when GWSs might have to provide a notice under the GWR requirements is shown in Table 1.

As mentioned in the second article, the GWR utilizes the wholesale and consecutive system relationship. This mainly applies to GWSs that do not provide 4-log treatment for viruses and must comply with the GWR triggered and additional source water monitoring requirements. Under the GWR, consecutive systems are required to inform their wholesale system within 24 hours of any total coliform-positive (TC+) sample collected for Total Coliform Rule (TCR) monthly monitoring compliance. A wholesaler that is not conducting compliance monitoring must collect a triggered source water sample within 24 hours of learning of a TC+ sample either in the wholesaler's or consecutive system's distribution system. If the triggered source water monitoring sample is fecal indicator-positive (FI+), the

Table 1. Public Notification Requirements under the Ground Water Rule

Type of Tier	*Type of Action*	*GWR PN Requirement*
Tier 1	Notice as soon as practical but no later than 24 hours via radio, TV, hand delivery, posting or other state-approved media.	• Fecal indicator-positive source water sample.
Tier 2	Notice as soon as practical but no later than 14 days via mail, direct delivery or other state-approved media. Repeat notice every three months until violation is resolved.	• Failure to complete a corrective action or be in compliance with state-approved schedule. • Failure to maintain 4-log treatment of viruses.
Tier 3	Notice within 30 days via mail, direct delivery or as part of the CCR. Repeated annually for unresolved issues.	• Failure to conduct required source water monitoring (triggered, additional, or assessment) or compliance monitoring.

wholesaler is required to inform all the consecutive systems that are provided ground water from that source. In turn, both the wholesalers and the consecutive systems that delivered finished water from the FI+ ground water source must notify their consumers via the Tier 1 and Special Notice. For an example of the PN requirements under the GWR and the wholesale and consecutive relationship, please see Figure 1.

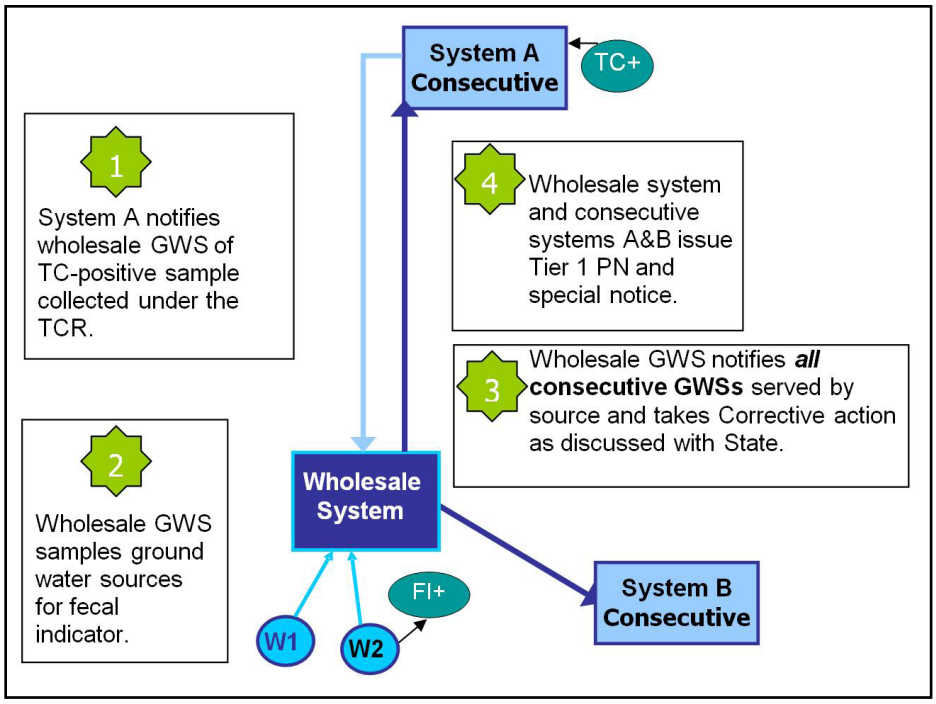

Figure 1. GWR Requirements for Public Notification and the Wholesale/Consecutive Relationship

GWR and CCR Requirements

The Consumer Confidence Rule requires Community Water Systems (CWSs) to provide consumer confidence reports (CCRs) to their customers. While the GWR does not require Non-Community Water Systems (NCWSs) to provide CCRs, they are required to issue special notice. In general, community GWSs must deliver their CCR to their consumers by July 1 of each year. The CCRs are based on the previous calendar-year data. This means that a CCR published in July reflects system status and data collected between January and December of the previous calendar year. Community GWSs are required to include any treatment technique violations, any failure to meet the GWR monitoring requirements, any fecal indicator-positive samples from source water monitoring results, and the range of the results for the chemical disinfectants and byproducts in their CCRs. GWR treatment technique violations are defined as failure to be in compliance with an approved corrective action plan (resulting from either a fecal indicator-positive sample or from a significant deficiency) and/or failure to maintain 4-log treatment of viruses for more than four hours. A GWS must provide an explanation of the treatment technique violations, the length of the violation(s), any potential adverse health effects, and a description of the steps the public water system took to address the violation(s) in the CCR.

It is recommended that this information be presented in a table adjacent to the Water Quality Data table. Please see the revised *Preparing Your Drinking Water Consumer Confidence Report* (April 2010) for guidance. Failure to monitor includes all monitoring required under triggered, additional, or assessment source water monitoring, as well as compliance monitoring.

All positive results from source water monitoring, as well as the range of the results for the chemical disinfectants and byproducts, must be included under the Water Quality Data table in the CCR. If you are reporting fecal indicator-positive sample results under the GWR list the maximum contaminant level (MCL) and maximum contaminant level goal (MCLG) as zero for *E. coli*; list "TT" in the column for MCL, and "N/A" (not applicable) in the column for MCLG for enterococci or coliphage; and enter the number of positive samples for the year in the column for MCL and zero in the column for MCLG for total coliform bacteria. A summary of the CCR and Special Notice requirements for CWSs and NCWSs is shown in Table 2.

GWR and Special Notice Requirements

Special Notice is a new type of notice introduced by the GWR. Special Notice is required for both community and non-community GWSs. A CWS is required to issue a Special Notice for any FI+ source water sample and all uncorrected significant deficiencies. CWSs must comply with the Special Notice requirement by including this information in their CCR. Unresolved significant deficiencies must be included in the CCR every year that a significant deficiency goes unaddressed or corrected. Special Notices prepared by community GWSs to address FI+ samples must include:

- Source of fecal contamination (if known)
- Date(s) of the positive sample(s)
- Whether the source of contamination has been addressed and the date of such action
- State-approved corrective action plan schedule if the fecal contamination has *not* been addressed
- Potential health effects language as indicated by the rule

NCWSs are only required to do Special Notices if they have uncorrected significant deficiencies. However, since NCWSs are not required to publish yearly CCRs they will need to inform the public in a manner approved by the State. The non-community GWS must continue to notify the public annually until the significant deficiency has been corrected. Special Notices prepared by non-community GWSs to address uncorrected significant deficiencies must include:

- Nature of the significant deficiency
- Date the significant deficiency that was identified by the state
- Description of state-approved plan
- Schedule for correction of the significant deficiency, including interim measures, progress to date, and any interim measures completed
- Information in the appropriate language(s) regarding the importance of the notice for GWSs with a large community of non-English speaking consumers

Please check with your state or primacy agency to ensure that your notices meet their requirements.

Table 2: CCR and Special Notice Requirements for CWS & NCWS

Community Water Systems	
CCR	**Special Notice***
• All fecal indicator-positive samples from source water monitoring • Range of results from chemical disinfectants • Special Notice*	• Uncorrected Significant Deficiencies • FI+ Source Water Sample (until corrective action is complete) * *CWS can include Special Notices in their CCR*
Non-Community Water Systems	
CCR	**Special Notice****
No CCR Requirements	• Uncorrected significant deficiencies ** *State-approved method, annually until significant deficiency addressed.*

Frequently Asked Questions

Question #1: Does an FI+ source water sample result require a confirmation sample before Tier 1 Public Notification?

Answer #1: No. Every FI+ source water sample result (whether from triggered, additional, or assessment monitoring) requires Tier 1 public notification.

Question #2: If a consecutive system collects a TC+ sample, does it need to notify the wholesaler?

Answer #2: Yes. If a consecutive GWS learns of a TC+ in the distribution system, the GWS is required to inform the wholesaler under the GWR. Failure to notify the wholesaler within 24 hours is a violation requiring Tier 3 PN.

Question #3: Will the CCRiWriter and the PNiwriter address GWR requirements?

Answer #3: Yes. The EPA has updated these tools to reflect GWR requirements.

Training Opportunities

EPA has concluded conducting its workshops and webcast trainings on the GWR at this time; however, there still may be trainings sponsored by your state, EPA Region, or technical assistance providers. Contact your EPA Region or state for more information on workshops or trainings that might be conducted near you. For more information on the GWR, please visit the GWR homepage at: www.epa.gov/safewater/disinfection/gwr. ♦

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Stage 2 D/DBP Rule

Compliance Deadlines Approaching

Lydia Fewless, North Dakota Department of Health, Division of Municipal Facilities

The Stage 2 Disinfectants/Disinfection Byproducts (DBP) Rule will modify existing monitoring for total trihalomethanes (TTHM) and haloacetic acids five (HAA5). The rule attempts to further limit potential health effects from disinfectants and their byproducts in the distribution system.

TTHM and HAA5 continue to form in the distribution system, and concentrations in the drinking water can vary significantly from one location to another. TTHM and HAA5 levels are typically higher in surface water systems because surface waters frequently contain higher DBP precursor levels and require stronger disinfection. Limiting the levels of DBPs in a water system may require adjustments to current operations, such as: (1) making operational improvements at the treatment plant or in the distribution system, (2) modifying current treatment operations to achieve greater DBP precursors, or (3) upgrading or installing treatment.

Community and non-transient non-community water systems that receive or deliver water that has been treated with a primary or residual disinfectant other than ultraviolet (UV) light must meet Stage 2 DPB Rule compliance requirements.

Stage 2 DBP Rule Implementation Timeframe:

Public Water System Population	**Begin Stage 2 Routine Monitoring**
>100,000	**April 1, 2012**
50,000 – 99,999	**October 1, 2012**
10,000 – 49,999	October 1, 2013
<10,000	October 1, 2013

The number of sampling locations and frequency of monitoring is based on source water type and your system's population.

Monitoring locations for TTHM and HAA5 were chosen as part of the reporting process for systems that submitted an Initial Distribution System Evaluation (IDSE) report. Water systems that did not submit an IDSE report or that received an IDSE waiver (either a very small system waiver or 40/30 certification) submitted a compliance monitoring plan to determine monitoring locations for Stage 2 sampling requirements.

All public water systems must develop and maintain a sample monitoring plan. Sampling plans and any changes to your system's plan must be submitted to the state for review and final approval. Minimum information required as part of the plan includes monitoring locations and dates.

Quarterly monitoring must be spaced every 90 days. The term "every 90 days" was included to eliminate the possibility that a system would take samples at the end of one quarter and then immediately sample again at the beginning of the next quarter. Regular sample collection provides a more accurate representation of the water quality. However, it is expected that the state will use its discretion to account for various circumstances. The intent is to have samples taken approximately every 90 days.

All samples for TTHM and HAA5 must be collected under normal operating conditions, meaning conditions representative of the water quality typically delivered to customers.

An early warning system to alert water systems to a potential maximum contaminant level (MCL) exceedance, referred to as Operational Evaluation Levels (OELs), was included as part of the Stage 2 DBP Rule. OELs are based on the results of three quarters of monitoring and allow water systems to make operational adjustments before an MCL is exceeded. Additional information regarding OELs is found in the article on page 26.

This is the second in a series of articles that summarizes key components of the Stage 2 Disinfectants and Disinfection Byproduct Rule. For additional information on the DBP Rule, visit the EPA web site at http://www.epa.gov/safewater/disinfection/stage2/compliance.html or contact Lydia Fewless, Stage 2 DBP Rule Manager, North Dakota Department of Health, Division of Municipal Facilities 701-328-5221. ♦

Lydia Fewless, North Dakota Department of Health, Division of Municipal Facilities

An early warning system to alert water systems to a potential maximum contaminant level (MCL) exceedance, referred to as Operational Evaluation Levels (OELs), is included as part of the Stage 2 Disinfectant/Disinfection Byproducts Rule (DBPR). OELs are based on the results of three quarters of monitoring and will allow water systems to make operational adjustments before an MCL is exceeded.

All community and non-transient non-community water systems that use a primary or residual disinfectant other than ultraviolet light (UV), or that deliver water that has been treated with a primary or residual disinfectant other than UV, must comply with the Stage 2 DBPR MCLs for total trihalomethanes (TTHM) and haloacetic acids five (HAA5) **and** the Stage 2 DBPR operational evaluation requirements. This includes consecutive systems delivering water that has been treated with a primary or residual disinfectant other than UV.

The Operational Evaluation Level requirement of the Stage 2 DBPR provides an early warning of possible future MCL violations, which allows systems to take proactive steps to remain in compliance.

Systems must comply with the OEL requirement if they **meet both** of the following criteria:

1. Required to conduct Stage 2 DBPR compliance monitoring; **and**
2. Collects Stage 2 DBPR compliance samples **quarterly**.

If a system conducts annual monitoring, it is not subject to the OEL requirement; however, if a system is required to increase Stage 2 monitoring to quarterly, it is also required to meet the OEL requirements.

The rule establishes OELs of 0.080 milligrams per liter (mg/L) for TTHM and 0.060 mg/L for HAA5.

The OELs are determined by calculating the sum of the two previous quarters results plus twice the current quarters results divided by 4. This locational running annual average (LRAA) threshold should help systems identify if they are likely to exceed the MCL in the next quarter and gives them a chance to make operational changes. The first determination of OELs would be after the completion of the first three quarterly monitoring periods. The determination of OELs should be completed each quarter when new monitoring results are available.

If the OEL value is > 0.080 mg/L for TTHM, it is an OEL exceedance. If the OEL value is > 0.060 mg/L for HAA5, it is an OEL exceedance.

A system that exceeds the OEL must conduct an OEL evaluation and submit a written report of the evaluation to the state Drinking Water Program **no later than 90 days** after being notified of the high TTHM or HAA5 sample result that caused the OEL exceedance at any location in the distribution system.

The system may request, and the state may allow, a limited scope OEL if a system is able to identify the cause of the OEL exceedance to the state's satisfaction. The state Drinking Water Program **must** approve the limited scope OEL **in writing**. Requesting approval to limit the scope of the OEL does not extend the schedule for submitting the operational evaluation report, which is still due 90 days after notification of the high analytical result.

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An OEL exceedance **is not** a violation of the Stage 2 DBPR; however, failure to conduct and submit an OEL evaluation and report to the state within 90 days is a violation.

Your operational evaluation report must include:

- An examination of system treatment and distribution operational practices including:
  - storage tank operations
  - excess storage capacity
  - distribution system flushing
  - changes in sources or source water quality
  - treatment changes
  - any problems that may contribute to TTHM and HAA5 formation
- Steps to be considered to minimize future exceedances.

This is the third in a series of articles that summarizes key components of the Stage 2 DBPR. For additional information, please contact Lydia Fewless at lfewless@nd.gov or by phone 701-328-5221. Additional information is also available on the EPA web site at http://www.epa.gov/safewater/disinfection/stage2/compliance.html ♦

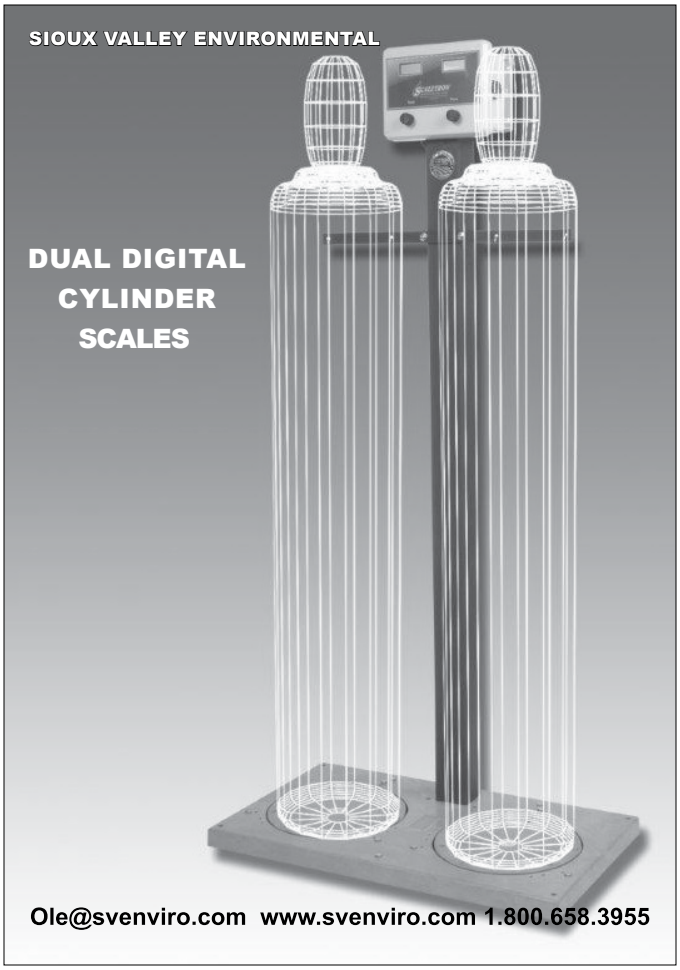
Stage 2 DBPR Guidance Manual for Consecutive Systems

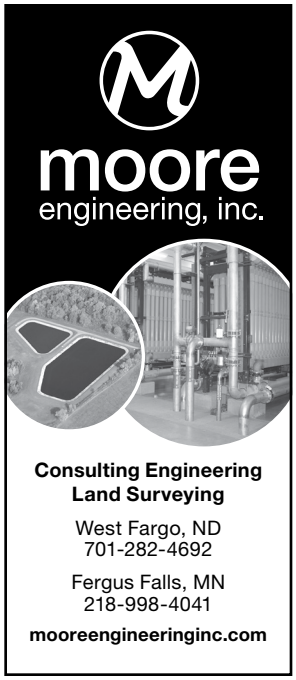
The Environmental Protection Agency (EPA) has released the *Consecutive Systems Guidance Manual* to assist consecutive systems in complying with the Stage 2 Disinfectants and Disinfection Byproducts Rule (Stage 2 D/DBPR).

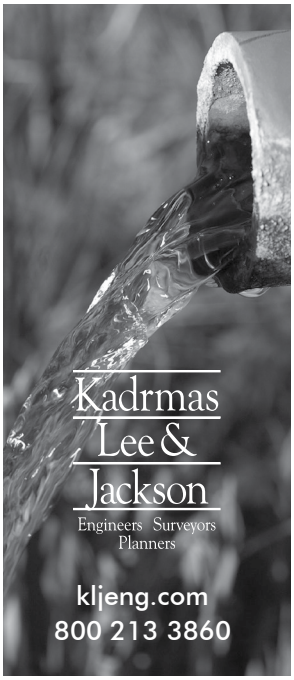
The guidance manual provides an explanation of specific requirements in the Stage 2 Rule as they apply to consecutive systems. The rule applies to any system with water containing a disinfectant, such as chlorine, and includes those systems which have no chlorination system of their own but simply buy wholesale water containing a chlorine residual from another system. Under the Stage 2 Rule, systems must meet the maximum contaminant levels (MCLs) for total trihalomethanes and haloacetic acid as determined by a locational running annual average (LRAA), as well as other monitoring and reporting requirements of the rule.

The manual addresses flexibilities in the rule and explains the various compliance technologies and other compliance approaches available to consecutive systems. It also provides information on how to coordinate with wholesale systems to achieve compliance, including an example agreement between a wholesale and a consecutive system.

The manual is available at EPA's website: www.epa.gov/safewater/disinfection/stage2/compliance.html.







52nd Annual Water and Wastewater Operator Training Program

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

This past March, April, and May, 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 52nd Annual Water and Wastewater Operator Training Program.

There were six sessions offered with a total of 309 attendants.* 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 30, and May 1-2.

Training Sessions	Number of Attendants
Water Treatment and Distribution	
March 5, 6, 7	52
March 12, 13, 14	51
March 26, 27, 28	55
April 2, 3, 4	63
Wastewater Treatment and Collection	
April 16, 17, 18	46
April 30, May 1, 2	42
Total number of attendants:	309*
* 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 about 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 229 examinations this year, with a passage rate of 70 percent.

Examination Session	Number of Examinations Written
March 7	35
March 14	27
March 28	36
April 4	47
April 18	29
May 2	55
Total number of examinations written:	229

The following is a breakdown of the certification examinations that were written during the 2012 operator training sessions:

Examination Classification	**IA**	**I**	**II**	**III**	**IV**	**Totals**
Water Treatment	10	28	15	8	2	63
Water Distribution	28	42	18	2	1	91
Wastewater Treatment	2	18	7	2	3	32
Wastewater Collection	6	23	12	1	1	43
Totals:	46	111	52	13	7	229

Operators Pass Certification Examinations (March-April 2012)

Congratulations to the Operators

Operator	Employer	Certification Type/Grade
Aasen, Jeremy	Thompson	Wastewater Collection 01
Aaseth, Dewey	South Central Regional Water District	Water Treatment 02
Albrecht, James	Casselton	Wastewater Treatment 01
Alvira, Nikomaldeus	Jamestown	Wastewater Treatment 02
Aman, Clark	South Central Regional Water District	Water Distribution 01
Amondson, Mark	Williston	Water Distribution 1A
Anderson, Dean	Grand Forks	Water Treatment 03
Andre, Justin	North Prairie RWD-System III	Water Treatment 01
Annala, Brooks	LB Trailer Park	Water Distribution 1A
Bakke, Jason	Larimore	Wastewater Collection 01, Water Treatment 02
Belstad, Lorrie	LB Trailer Park	Water Distribution 1A
Bergstrom, Kenny	Williston	Wastewater Collection 03
Birnbaum, Dan	West Fargo	Water Distribution 01
Blessum, Chad	Tri-County Water District	Water Treatment 1A
Bolton, Steven G	Grand Forks	Water Treatment 01
Bondley, Douglas M	University Of Mary	Wastewater Collection 01, Wastewater Treatment 01
Burkland, Kim	Lakota	Wastewater Collection 02, Wastewater Treatment 02
Dockter, Jon	Imperial Valley Water Co	Water Distribution 1A
Engbrecht, Wade	Zap	Water Distribution 1A
Ferdon, Stacey	Grand Forks	Wastewater Treatment 03
Folden, Tim	Sawyer	Wastewater Collection 1A, Water Distribution 1A
Gange, Sean	Drake	Water Distribution 1A, Water Treatment 1A
Goetz, Doug	Grand Forks	Wastewater Treatment 04
Hagen, Kyle	Bismarck	Wastewater Collection 02, Water Distribution 02
Hans, Steven	Davenport	Water Distribution 1A
Hanson, Daniel	Grand Forks	Water Distribution 04
Haring, Kevin	Oakes	Water Distribution 01, Water Treatment 01
Hoffman, Gary	Watford City	Water Distribution 01
Hoy, Micah	Sharon	Water Distribution 1A
Hubrig, Ron	Hankinson	Wastewater Treatment 01
Beatty, Joshua A	North Prairie RWD-System 1&2	Water Distribution 1A, Water Treatment 1A
Boucher, Gregory	Rugby	Wastewater Collection 02
Brinegar, Bryan	Langdon	Wastewater Collection 02, Wastewater Treatment 02, Water Distribution 02, Water Treatment 02
Clarys, Ben	Williams Rural Water District	Water Distribution 02
Cole, Adam	Grand Forks	Water Treatment 01
Deitz, Jeremy	Grand Forks	Wastewater Collection 04
Demaray, Maynard R	Fort Berthold Rural Water	Water Distribution 01, Water Treatment 01
Frey, Curtis	Bismarck	Wastewater Collection 02, Water Distribution 02
Gardner, James	Towner	Wastewater Collection 01, Water Distribution 01
Hall, Mike	Lake Metigoshe Recreation	Wastewater Treatment 01
Hallanger, Thomas	Grand Forks Air Force Base	Wastewater Collection 01, Wastewater Treatment 01
Hartman, Don	Wildrose	Water Distribution 1A
Haskin, Chad	Cass Rural Water District-Phase I	Water Distribution 01
Helbling, Dale	South Central Regional Water District	Water Distribution 03
Heuer, Leslie	Cass Rural Water District-Phase I	Water Treatment 03
Hicks, Dan	Benedict	Water Distribution 1A
Hodgkinson, Mike	Fort Union Trading Post NHS	Wastewater Collection 1A, Water Distribution 1A
James, Ryan	West Fargo	Wastewater Collection 01
Johnson, Chad	Cooperstown	Water Distribution 1A, Water Treatment 1A
Keller, Eric	Minot	Wastewater Treatment 01
Klabo, Travis	Jamestown	Wastewater Treatment 01
Klatt Jr, Duane	Mapleton	Wastewater Collection 01, Water Distribution 01
Koropatnicki, Greg	Pembina	Wastewater Collection 01, Wastewater Treatment 01, Water Distribution 01

Operator	Employer	Certification Type/Grade
Marier, Gary	Casselton	Water Treatment 01
Markey, James A	Casselton	Wastewater Collection 02, Water Distribution 01
Munyer, Troy	Rugby	Water Distribution 01, Water Treatment 01
Rowell, Joe	Jamestown	Water Treatment 03
Salhus, Craig D	Underwood	Water Distribution 1A
Jacobs, Harley	Alexander	Wastewater Collection 01, Wastewater Treatment 01, Water Distribution 01, Water Treatment 01
Johnson, Ryan	McVille	Water Treatment 02
Kalvoda, Anthony	Dakota Gasification Co	Water Distribution 01, Water Treatment 02
Knutson, Aaron	Antelope Valley Station	Water Distribution 1A
Kolb, Joel	Grand Forks Air Force Base	Wastewater Treatment 01
Kolrud, Greg	West Fargo	Wastewater Collection 1A, Water Treatment 1A
Kujala, Brian	Casselton	Wastewater Collection 01
Lang, Troy	Minot	Water Distribution 02
Larson, Blaine	Cooperstown	Water Treatment 01
Lavoi, Joshua	Grand Forks	Wastewater Collection 02
Lockwood, Diadijishwana	Fort Berthold Rural Water	Water Treatment 1A
Mack, Kelvin	Page	Wastewater Treatment 1A, Water Distribution 1A
Martin, Timothy Jon	Dakota Gasification Co	Water Distribution 01
McCollum, Michael	Cass Rural Water District-Phase I	Water Treatment 04
McDonald, Adam	Dakota Gasification Co	Water Distribution 01
Miller, Leo	Southwest Water Authority	Water Distribution 02
Moody, Robert R	Antelope Valley Station	Water Distribution 1A
Moon, Eric	Neche	Water Distribution 1A
Morrow, Mike	Grand Forks	Wastewater Collection 01
Moszer, Mark	Bismarck	Wastewater Collection 02, Water Distribution 02
Mutschelknaus, Bruce	Southwest Water Authority	Water Distribution 03
Myers, Ralph A	R & R Trailer Court	Water Distribution 1A
Nagel, Nathan	Hettinger	Water Distribution 01
Nohr, Selina	Omar Farms TC	Water Distribution 1A
Olson, Christopher M	Casselton	Water Treatment 01
Olson, Jay T	Cargill Sweeteners	Wastewater Treatment 01
Olson, Roger	Surrey	Water Distribution 1A
Randash, Brian	Minot	Water Distribution 01
Reimche, Keith	Minot	Water Treatment 04
Reinhart, KJ	Barnes Rural Water District	Water Distribution 02
Rensland, Brandon	Minot	Water Treatment 02
Rosenlund, Page	Watford City	Water Distribution 01, Water Treatment 01
Schlittenhard, Cody	Langdon Rural Water District	Water Distribution 01
Schlosser, Gary	Prairie Learning Center	Water Distribution 1A
Seelig, Trevor	Lisbon	Wastewater Collection 01

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Minot (701) 852-0338
Email: wold@woldengr.com

Operator	Employer	Certification Type/Grade
Seibel, Todd	Antelope Valley Station	Water Distribution 1A, Water Treatment 02
Smith, Justin	Watford City	Water Distribution 01, Water Treatment 01
Strelow, Sidney	Fordville Public School	Water Distribution 1A
Subart, Kraig	Dickinson	Wastewater Collection 01, Wastewater Treatment 01
Trostad, Jonathon	McVille	Water Distribution 01, Water Treatment 01
West, Robert R	Apple Valley Coop	Water Distribution 1A
Westergaard, Steve	Minot	Water Distribution 01
Winson, Keith	Maddock	Water Distribution 02
Wintermute, Darrell	All Seasons WD-System I	Water Distribution 02, Water Treatment 02
Wolf, Jordan	Carrington	Water Treatment 1A
Salseg, Scott L	North Prairie RWD-System III	Wastewater Collection 1A
Sather, David A	Barnes Rural Water District	Water Distribution 02, Water Treatment 02
Setterlund, Mike	Antelope Valley Station	Water Treatment 1A
Shaw, Kent	Beach	Water Distribution 01
Smith, David	New England	Wastewater Collection 01, Water Distribution 01
Soberg, Tom	Regent	Water Distribution 1A
Sterzinger, Jordan	Cargill Sweeteners	Wastewater Collection 01, Wastewater Treatment 01
Thomas, Adam	Washburn	Wastewater Treatment 02
Thomas, Eric	Belcourt Rural Water	Wastewater Collection 01
Thompson, Michael D	Kenmare	Water Distribution 01
Trosen, Dan	Carrington	Wastewater Collection 01, Wastewater Treatment 01
Turner, Toby	Southwest Water Authority	Water Distribution 02
Wallman, Donald	Bowman	Wastewater Collection 02
Weiner, Chris	Grand Forks	Water Distribution 1A
Weishaar, Dustin	Minot Air Force Base	Wastewater Collection 02, Water Distribution 02
Wold, Brett	Watford City	Wastewater Collection 01, Wastewater Treatment 02

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Summer Operator Testing Scheduled

The summer operator certification exam session will be held on Wednesday, August 8, 2012 at the Environmental Training Center located at 2639 East Main Avenue in Bismarck. Examination times will be from 8:00 a.m. to 4:00 p.m. **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 application, you can print one by visiting: http://www.ndhealth.gov/mf/forms/Operator_Certification_Application.pdf. Renewal and exam fees must be paid prior to testing.

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

Attendance Roster: 52nd Annual Water and Wastewater Operator Training Sessions

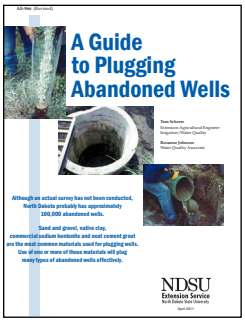
Environmental Training Center, Bismarck – Training Credits Issued

Jeremy Aasen ..... Thompson
Dewey Aaseth ..... South Central Regional WD
Gary Ackerson ..... Grand Forks Air Force Base
James Albrecht..... Casselton
Kenneth A Albrecht Jr ..... Mandan
Nikomaldeus Alvira..... Jamestown
Clark Aman..... South Central Regional WD
Mark Amondson ..... Williston
Carl Anderson..... Williams Rural Water District
Dale A Anderson ..... Edmore
Brooks Annala ..... LB Trailer Park
Lonnie Arp..... Grand Forks Air Force Base
Gary Barker ..... Inactive
James Bauer ..... Minot Air Force Base
Jim Baumgartner ..... Inactive
Joshua A Beatty ..... North Prairie Rwd-System 1&2
Lorrie Belstad ..... LB Trailer Park
Travis Bercier..... Inactive
Kenny Bergstrom..... Williston
Dan Birnbaum..... West Fargo
Chad Blessum ..... Tri-County Water District
Michael Bloom..... Inactive
Douglas M Bondley ..... University of Mary
Frank Bosch Jr ..... Strasburg
Gregory Boucher..... Rugby
Gerald Bousson..... Garrison
Bradley Brandt..... Glenburn
Dean Breske ..... Valley City
Bryan Brinegar ..... Langdon
Brent Brinkman ..... Cass Rural Water District-Phase I
Alfred Buchholz..... Country Club Coop
Kim Burkland ..... Lakota
Gerald Cain ..... Garrison
Ross Carter..... Sherwood
Gregg Christensen ..... Cass Rural Water District-Phase I
Shawn W Christensen..... South Central Regional WD
Kurt Christianson ..... Minot
Ben Clarys ..... Williams Rural Water District
Clayton Cook ..... Grand Forks Air Force Base
Kevin Corey..... Dakota Rural Water District N
Keith Degenstein..... Mohall
Leon Degenstein ..... Harvey
Jeremy Deitz ..... Grand Forks
Darwin Demaray ..... Tappen Public School
Maynard R Demaray..... Fort Berthold Rural Water
Joel Devillers ..... Carrington
Jeff Differding..... Valley City
William Dirk..... Crown Butte Coop
Jon Dockter ..... Imperial Valley Water Co
Gary Doepke..... Antelope Valley Station
Allan J Doll ..... Inactive
Anton (Tony) J. Doll ..... Napoleon
Tristin Dorschner ..... Leland Olds Station
Josh Duchsherer ..... Minot
Maureen Ellingson..... Berlin
Lance Elmer..... Inactive
Wade Engbrecht ..... Zap
Kenny Erickson..... Harvey
Andrew Erickson, Jr ..... Southwest Water Authority
Kelly Everson..... Inactive
Dave Feakes ..... Central Plains Water District
Jon K Finnson ..... Langdon
Rodney Fischer ..... Stanton
Darcy Fitterer..... Inactive
Tim Folden ..... Sawyer
Charles Folk ..... Knife River Indian Village
Curtis Frey ..... Bismarck
Glen Fuhrman ..... Enderlin
John Fulsebakke..... Bottineau
Sean Gange ..... Drake
James Gardner ..... Towner
Paul Gilbert..... Southeast WUD (East)
Rick Gillund..... Enderlin
Stacy L Goehring..... Missouri River CC
Larry A Gruenberg ..... Great River Energy - Stanton
Shannon Gunville ..... Belcourt Rural Water
Kyle Hagen..... Bismarck
Gary Hager..... Upper Souris WUA-System I
Mike Hall ..... Lake Metigoshe Recreation
Thomas Hallanger..... Grand Forks Air Force Base
Steven Hans ..... Davenport
Charles D Hanson ..... JR Simplot
Daniel Hanson..... Grand Forks
Sheldon Hanson-Molina .. Grand Forks Air Force Base
Jeffery L Harildstad ..... North Valley WD-System II Akra
Kevin Haring ..... Oakes
Don Hartman ..... Wildrose
Chad Haskin..... Cass Rural Water District-Phase I
Dale Helbling ..... South Central Regional WD
Dennis J Hendricks..... R & T Water System
Arthur H Hendrix ..... Leland Olds Station
Kevin Herrmann ..... Antelope Valley Station
Leslie Heuer ..... Cass Rural Water District-Phase I
Dan Hicks ..... Benedict
Steve Hicks ..... Inactive
Mike Hodgkinson ..... Fort Union Trading Post NHS
Larry Hofer ..... Maple River Hutterian Assoc.
Gary Hoffman..... Watford City
Dennis Hottman..... Napoleon
Dana Howard ..... Fort Berthold Rural Water
Dennis Howey..... Gwinner
Ron Hubrig..... Hankinson
Trent Huston..... Inactive
Terry Hutslar..... Wilton
Brent Isaak ..... Inactive
Kurt Isakson..... LaMoure
Harley Jacobs ..... Alexander
Kevin Jacobson ..... Valley City

Ryan James ..... West Fargo
Ramon Jasso ..... Knife River Indian Village
Nick Jesz ..... Minot
Robert F Job ..... Linton
Allen M Johnson ..... Minot
Chad Johnson ..... Cooperstown
Robert Johnson ..... Inactive
Ryan Johnson ..... McVille
Wade Kalgard ..... Inactive
Anthony Kalvoda ..... Dakota Gasification Co
Eric Keller ..... Minot
John Keller ..... Inactive
Sherry Renee Keys ..... Valley City
Del Kindelspire ..... LaMoure
Travis Klabo ..... Jamestown
Duane Klatt Jr ..... Mapleton
Linda Klein ..... Leland Olds Station
James Klingbeil ..... Bottineau
Rodney Knoll ..... Inactive
Aaron Knutson ..... Antelope Valley Station
Joel Kolb ..... Grand Forks Air Force Base
Greg Kolrud ..... West Fargo
Greg Koropatnicki ..... Pembina
Christopher Koval ..... Cargill Sweeteners
Robert Krueger ..... Central Plains Water District
Tony Kub ..... Wahpeton
Brian Kujala ..... Casselton
Roy J Kupfer ..... Edgeley
Devin Kvernum ..... Williams Rural Water District
Philip A Landman ..... Fargo (WWT)
Troy Lang ..... Minot
Blaine Larson ..... Cooperstown
Greg Larson ..... R & T Water System
Darin Laverdure ..... Inactive
Joshua Lavoi ..... Grand Forks
Terry Leingang ..... Parshall
Greg K Lemer ..... R & T Water System
Stefan W Linstad ..... Park River
Tyler Livingston ..... Inactive
Diadijishwana Lockwood . Fort Berthold Rural Water
Benjamin Lokken ..... Inactive
Glen Lueck ..... Inactive
Raymond Macbeth ..... Columbus
Kelvin Mack ..... Page
Ryan Malsam ..... Inactive
Gary Marier ..... Casselton
James A Markey ..... Casselton
Timothy Jon Martin ..... Dakota Gasification Co
Steve Martinson ..... Inactive
Michael McCollum ..... Cass Rural Water District-Phase I
Adam McCormick ..... Grand Forks Air Force Base
Adam McDonald ..... Dakota Gasification Co
Simon Meidinger ..... South Central Regional WD
Bill Middleton ..... Inactive
Dale Miller ..... Grandin
Kerry Miller ..... Stanton
Leo Miller ..... Southwest Water Authority
Roger Miller ..... Medora
Stanley Miller ..... Grand Forks Air Force Base
Stephen A Miller ..... Antelope Valley Station
Jim Monroe ..... Ellendale
Robert R Moody ..... Antelope Valley Station
Eric Moon ..... Neche
Matthew Morris ..... Inactive
Mike Morrow ..... Grand Forks
Frank Mosser ..... Maddock
Mark Moszer ..... Bismarck
Troy Munyer ..... Rugby
Leo Murr ..... Wahpeton
Steven H Murray ..... McClusky
Bruce Mutschelknaus ..... Southwest Water Authority
Myron Mutzenberger ..... Great River Energy - Stanton
Ralph A Myers ..... R & R Trailer Court
Nathan Nagel ..... Hettinger
Justin Nelsen ..... Inactive
Patrick Nelson ..... Oakes
Wayne Nelson ..... Valley City
Jason Newman ..... Valley City
Marshall Nielsen ..... Belcourt Rural Water
Lyle Niemann ..... Grafton
Selina Nohr ..... Omar Farms TC
Dean O'Clair ..... Mohall
Tim Oliger ..... Antelope Valley Station
Charles Olson ..... Cargill Sweeteners
Christopher M Olson ..... Casselton
Jay T Olson ..... Cargill Sweeteners
Roger Olson ..... Surrey
Ronald D Olson ..... Jamestown
Dan Overmoe ..... Mayville
Bearstar Perkins ..... Fort Berthold Rural Water
Rodney Phelps ..... St John
Vickie Poland ..... Inactive
Kyle Price ..... Dickinson
Douglas Quast ..... Milton R Young Station
Brian Randash ..... Minot
Wesley Rasmussen ..... Minot
Jamie Rath ..... Mandan
Keith Reimche ..... Minot
KJ Reinhart ..... Barnes Rural Water District
Marcus Renke ..... Barnes Rural Water District
Brandon Rensland ..... Minot
Duane Rode ..... Inactive
Lee Roy Roller ..... Belfield
Page Rosenlund ..... Watford City
Damon Ross ..... Belfield
Bryan L Rothmann ..... Washburn
Joe Rowell ..... Jamestown
Craig D Salhus ..... Underwood
David A Sather ..... Barnes Rural Water District
Tom Sayler ..... Leland Olds Station

Erick Schantz ..... Mandan
Wade Scheidt..... Pick City
Andrew Schiele..... Karlsruhe
Gary Schlosser..... Prairie Learning Center
Gary A Schmidt..... Mandan
Theodore Schulz ..... Watford City
Gerald Schwarz..... Leland Olds Station
Trevor Seelig..... Lisbon
Todd Seibel..... Antelope Valley Station
Eric Seibold..... Wahpeton
Mike Setterlund ..... Antelope Valley Station
Kent Shaw ..... Beach
John E Silvernail..... Lisbon
Duane Skramstad..... Enderlin
David Smith ..... New England
Dean Smith ..... R & T Water System
Douglas Smith..... South Central Regional WD
Justin Smith ..... Watford City
Tom Soberg..... Regent
Dallas Sommer..... Inactive
Jordan Sterzinger ..... Cargill Sweeteners
Don Stockert ..... Steele
Sidney Strelow ..... Fordville Public School
Kraig Subart..... Dickinson
Richard Swenson ..... New Rockford
Michael Tank ..... Medora
Adam Thomas..... Washburn
Eric Thomas..... Belcourt Rural Water
Michael D Thompson ..... Kenmare
Tyler Tingwald..... Grand Forks Air Force Base
Terry Tobin ..... Inactive
Dan Trosen..... Carrington
Marc Troska..... All Seasons WD-System I
Jonathon Trostad..... McVille
Eric Trottier..... Belcourt Rural Water
Jerry Tufte..... Glenfield
Toby Turner..... Southwest Water Authority
Wynne Unruh ..... South Central Regional WD
Frank Vavrosky..... Fargo (WWT)
Charles Volk..... Baker Boy Supply
Ronald M Wald ..... Edgeley
Donald Wallman ..... Bowman
Tim Wangler ..... Sleepy Hollow Water Company
Chris Weiner..... Grand Forks
Jamey Weinmann..... Harvey
Dustin Weishaar..... Minot Air Force Base
Robert R West..... Apple Valley Coop
Steve Westergaard..... Minot
Dell Widmer..... Kulm
Kathy Wiedrich..... Inactive
Terry Wika..... Inactive
Keith Winson ..... Maddock
Darrell Wintermute..... All Seasons WD-System I
Matthew Wipf..... Fairview Colony
Brett Wold..... Watford City
Jordan Wolf..... Carrington
Phil Wolverton ..... Selfridge
Duane Zastoupil..... Inactive
Mason Zimmerman ..... Inactive

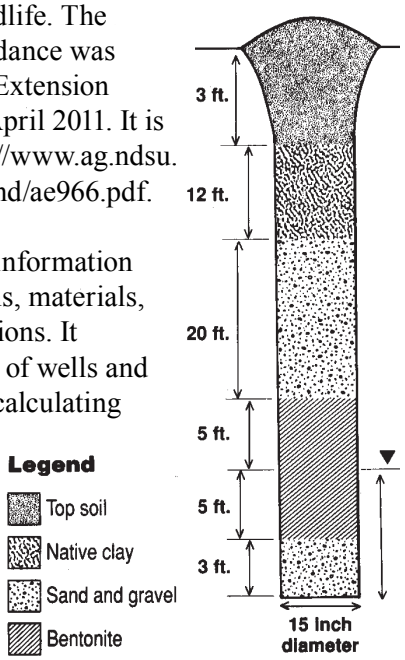
A Guide to Plugging Abandoned Wells Available Online



In most cases, wells that are no longer in use should be plugged and abandoned. The main reason to plug an open well is to stop pollutants from entering and contaminating the entire aquifer. In addition, large diameter wells left unattended are a hazard to humans, livestock, and wildlife. The guidance was published by the NDSU Extension Service and updated in April 2011. It is available online at: http://www.ag.ndsu.edu/pubs/h2oqual/watgrnd/ae966.pdf.

This document includes information about hazards, regulations, materials, and step-by-step instructions. It addresses different types of wells and provides worksheets for calculating what is needed to plug a particular well.

For a paper copy, call the Extension Service at 701-231-7882.



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Governor Dalrymple Proclaims Drinking Water Week

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

Governor Jack Dalrymple has declared May 6 through 12, 2012, 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 source water protection and water 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, the North Dakota Water Environment Association, and the North Dakota Rural Water Systems Association.

Drinking Water Week 2012

Proclamation: Drinking Water Week May 6-12, 2012

WHEREAS, the citizens of North Dakota recognize that our health, comfort and standard of living 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 businesses 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 Governor of the State of North Dakota, I do hereby proclaim May 6-12, 2012, DRINKING WATER WEEK in the state of North Dakota.

Jack Dalrymple
Governor

Front row (L to R): Larry Thelen, Drinking Water Program Manager, North Dakota Department of Health; Governor Jack Dalrymple; Chuck Abel, Past-President, North Dakota Water and Pollution Control Conference. Back row (L to R): Joe LaFave, Treasurer, North Dakota Rural Water Systems Association; Lisa Ansley, Director, North Dakota Section of the American Water Works Association; Don Tucker, Chair, North Dakota Water Environment Association; Dan Jonasson, President, North Dakota Chapter of the American Public Works Association.

Governor Proclaims Public Works Week in North Dakota

Governor Jack Dalrymple has proclaimed May 20 through 26, 2012, 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," said State Health Officer Terry Dwelle, M.D. "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, executive secretary of the North Dakota Chapter of the American Public Works Association, at 701-328-5207.

Proclamation: Public Works Week May 20-26, 2012

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, 2012, PUBLIC WORKS WEEK in the state of North Dakota.

Jack Dalrymple
Governor

Dan Jonasson, President, North Dakota Chapter of the American Public Works Association; Governor Jack Dalrymple; Chuck Abel, Executive Secretary, North Dakota Chapter of the American Public Works Association.

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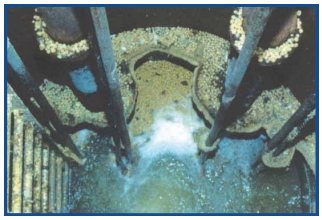

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Project Safe Send Scheduled for July

Jeremiah Lien, North Dakota Department of Agriculture

The North Dakota Department of Agriculture is planning 12 Project Safe Send sites, and is encouraging anyone with banned or unusable pesticides to schedule a trip to Project Safe Send this July.

This program is for everyone – farmers, ranchers, pesticide dealers and applicators, government agencies, and homeowners. It's a safe, simple, and non-regulatory program to help you safely and legally get rid of unusable pesticides free of charge.

The program accepts any pesticides (i.e., herbicides, insecticides, rodenticides, and fungicides) that are old, unusable, or banned. Participants can bring their unusable pesticides to a scheduled collection site. They are asked to complete a voluntary survey and inventory form. A contractor unloads the wastes for participants and collects any paperwork. The whole process usually takes just a few minutes. After the collections, pesticides are carefully packed and shipped out of state for incineration.

People with more than 1,000 pounds of pesticides should preregister by contacting the North Dakota Department of Agriculture. No other preregistration is required. A maximum of 20,000 pounds of pesticide per participant will be accepted. Pesticide rinse water also will be accepted at any of the 12 collection sites. The first 100 pounds of rinse water will be taken free of charge; a fee of $1.00 per pound will be applied for each additional pound of rinse water.

Please check your storage areas for any unusable pesticides and set them aside for Project Safe Send. In the meantime, keep pesticides locked up safely. If you have deteriorating or leaking containers, overpack them in larger containers and add absorbent materials. Free heavy-duty plastic bags are available from the North Dakota Department of Agriculture.

If you would like to preregister more than 1,000 pounds of pesticides, receive heavy duty plastic bags, or if you have questions about Project Safe Send, please call Jeremiah Lien at the North Dakota Department of Agriculture at 701-328-1504 or jjlien@nd.gov .

Call the Department of Agriculture or go to its website: www.nd.gov/ndda/ for the schedule and directions to the sites. ♦

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NDWPCC Joint Board Meeting Minutes

January 18, 2012, 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 18, 2012, in the Cutty Sark Room of the Seven Seas Inn, Mandan, N.D. The meeting was called to order at 10:34 a.m. by NDWPCC President Karla Olson. Copies of the meeting agenda and 2011 NDWPCC financial report were provided to those in attendance. The following board members and guests were present: Chuck Abel, Lisa Ansley, Terry Boehm, Mike Brisben, David Bruschwein, Bill Gefroh, Rick Gillund, Tracy Eslinger, Joe Ferguson, Jeff Heintz, Dan Jonasson, Dennis Larson, Lance Meyer, Wayne Offerdahl, Karla Olson, Meredith Quinn, Terry Rust, Walt Smith, Shawn Soehren, Jason Sorenson, Gregg Stewart, Larry Thelen, Don Tucker, Eric Volk, Greg Wavra, Rachel Wolff, and Chad Zander.

President Olson called for a motion to dispense with the reading of the minutes from the October 11, 2011 joint board meeting and the October 13, 2011 NDWPCC business meeting in Bismarck and approve the minutes as published in the *Official Bulletin* or the copy mailed to all board members. Terry Rust so moved, Rick Gillund seconded, and the motion carried.

President Olson next called for the Treasurer's Report. Mike Brisben reported that the conference had a net gain of $21,473.06 in fiscal year 2011 and total assets of $96,613.85. President Olson called for a motion to approve the Treasurer's Report. Dan Jonasson so moved, Chuck Abel seconded, and the motion carried.

For the next order of business, President Olson called for the Auditing Committee Report. Bill Gefroh reported that he and Meredith Quinn had completed an audit of the NDWPCC books, and the finances were found to be in good order.

President Olson called for any other old business. Hearing none, President Olson called for a report on the 2012 conference arrangements in Minot. Mr. Brisben reported that 309 rooms had been secured throughout Minot with the convention center being the Grand International Inn. Dan Jonasson and Lance Meyer noted that six new hotels and an additional 680 apartments would be available in the summer of 2012 and rooms should not be an issue. Mr. Brisben indicated he would continue to work with the Minot Convention and Visitor's Bureau to secure additional rooms as they become available. Further discussion included room costs and hotel locations.

Next, President Olson asked board members to provide Mr. Brisben a list of topics and presenters for the fall conference by the May 16, 2012 joint board meeting.

President Olson called on Mr. Brisben for a report on the 2012 Spring Water and Wastewater Operator Training Program. Mr. Brisben announced the dates for this year's sessions and noted that training announcements had been mailed and could also be found in the winter issue of the *Official Bulletin* or on the Division of Municipal Facilities website.

Mr. Brisben next reported on the 2011 conference in Bismarck noting that 377 preregistered and 371 were able to attend. Attendance for business meetings and luncheons were 174 Tuesday, 234 Wednesday, and 131 Thursday. The Tuesday buffet served 170. Three hundred and twenty six6 attended the Wednesday breakfast, and 245 attended the awards banquet. Mr. Brisben also noted that there was a good turnout for the student/young professionals social.

Next, President Olson called for a report on the upcoming Surface Water Workshop. Meredith Quinn reported that the workshop would be at the Moorhead Marriott, April 24-26, 2012 and that a tentative agenda and registration form could be found in the *Official Bulletin*.

President Olson called for any other new business. Hearing none, President Olson called for a motion to close the meeting. Terry Rust so moved, Jason Sorenson seconded, and the motion carried. The meeting was adjourned at 10:50 a.m.

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

Respectfully submitted,

Mike Brisben
Secretary/Treasurer

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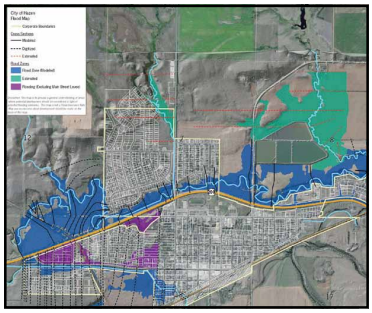

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Minutes of the Board of Trustees Meeting North Dakota Section of AWWA

January 18, 2012

The winter meeting of the North Dakota Section of the American Water Works Association (AWWA) was held at the Seven Seas Inn of Mandan, N.D. on January 18, 2012. Present at the meeting were Chair-elect Eric Volk; Director Lisa Ansley; Director-elect Larry Thelen; Trustees Dennis Larson, Jason Sorenson, and Meredith Quinn; Secretary/Treasurer David Bruschwein; and Assistant Secretary Treasurer Greg Wavra. Joe Fergusson also attended the meeting.

The meeting was called to order by Mr. Volk at 8:10 a.m.

The Secretary's Report was presented by Mr. Bruschwein. Mr. Sorenson moved to approve the minutes of the October 11, 2011 board meeting, as corrected. Ms. Ansley seconded, and the motion passed.

Mr. Wavra presented the Treasurer's Report. As of December 31, 2011, the section had income of $30,024.94 and expenses of $27,653.05. The section has $24,455.35 in the checking and money market accounts. The section also has $83,481.39 in scholarship endowments and reserve accounts. There was discussion on the fact that even though there was a profit for 2011, this is misleading as payments from the NDWPCC for the 2010 and 2011 conferences were both received in 2011. In addition, the student chapters did not use their allocated funds in 2011. Ms. Quinn moved to accept the Treasurer's Report. Mr. Sorenson seconded, and the motion carried.

Committee Reports:

Education and Research Committee

Ms. Quinn presented the Education Committee report. There were no applicants for the Water Utility Management Training Scholarship. The awards for the state science fair this year will be $75 to the winners. The regional winners will receive certificates and water bottles.

Water for People (WFP)

Mr. Bruschwein reported the total donation to WFP from the section in 2011 was $5,600. This included $1,800 raised through the raffle, $300 raised through mulligans at the golf tournament, $2,500 raised through sponsorships for the golf tournament, and a $1,000 donation from the section.

Water Utility Council (WUC)

Ms. Ansley reported that Mr. Brett Jochim and Mr. Mark Peterson plan to represent the North Dakota section at the AWWA Fly-In.

Membership

Ms. Quinn stated that the section was able to get seven new Young Professionals (YP) to join the association during the YP Challenge so the section will receive one free registration for the upcoming YP summit.

Student Chapter

Ms. Quinn reported that the student chapters did send teams to the Water Environment Federation Technical Exhibition and Conference (WEFTEC) last fall. Currently, there are around 35 student members. Both chapters will be represented at the strategic planning session.

Directors Report

Ms. Ansley presented the Directors Report. Both she and Director-elect Larry Thelen will be leaving soon for the Board of Directors meeting. The more interesting agenda items at the next directors meeting include election of the new president-elect, four vice-presidents, and one director-at-large position. The budget is still a huge issue with membership numbers continuing to fall. Ms. Ansley continues to serve on the strategic planning committee and the program quality committee.

Old Business

Mr. Wavra led the discussion on the 2012 budget. He distributed a revised draft budget with a deficit of approximately $6,030.

Changes to the budget include removing the scholarship for the management institute and the section sending the incoming chair to the annual conference and exposition (ACE). Additions to the budget included covering part of the cost of the poster session winner attending the ACE and the cost of holding a strategic planning session. Most of the $6,030 loss is the result of having to send the director and the director-elect to two meetings and holding a strategic planning session.

Ms. Ansley wondered if there is a need to change the scholarship endowment CDs fund since there are no longer any scholarships. It was pointed out that Bismarck State College will start an on-line operator training course next year, and there is the possibility of the section offering a scholarship for that course.

There was also discussion about the need to continue to send two people to the AWWA Fly-In. The group felt that it may be hard to find an operator to attend on his own. While this year is already set, it could be just as effective to just visit the congressional offices in Bismarck in the future.

Mr. Sorenson moved to accept the budget as presented, and Mr. Larson seconded the motion. The motion passed.

According to Ms. Quinn, the Surface Water Workshop registration is published, and the agenda has been set. The selected speakers are being notified. The next committee meeting will address advertising and refining the budget.

Ms. Ansley covered the upcoming strategic planning session. Arrangements have been made, and it is ready to go.

Ms. Ansley sent letters to venders asking if there is interest in forming a Manufacturers/Associates Council (MAC) and also asking for donations to help support the section. Responses were received from nine vendors and $1050 was received for the section. Several more responses are expected. She expects input from the vendors at the conference.

New Business
Mr. Volk appointed the following committees:
Fuller - Ms. Quinn (chair)
Trustee - Mr. Ferguson (chair), Mr. Volk, Mr. Sorenson, and Ms. Ansley
Operator Meritorious – Mr. Thelen (chair), Mr. Volk, and Mr. Larson

The regional meeting of section officers (RMSO) is April 27 and 28 in Indianapolis this year. Mr. Sorenson expressed an interest in attending.

There were no applicants for the Water Utility Management Course Scholarship. Discussion centered on the difficulty of finding applicants for the scholarship. Ms. Quinn moved to dissolve the Water Utility Management Course Scholarship until there is a higher demand. The motion was seconded by Ms. Ansley. The section can still pass on the information for the course and, if desired, the scholarship can be brought back in the future. The motion passed.

Ms. Ansley will check with Brett Jochim to confirm the status of the Fly-In for this year. This should be a topic for the strategic planning session, and the WUC needs to come up with a long-term plan.

There was discussion on how to handle donations to organizations this year. The group had a strong desire to continue supporting the organizations in the state that we have been supported in the past. There was talk as to if the WFP donation should be set to cover the difference between what is raised at the conference and $5,000. Mr. Sorenson moved to give the same amounts in donations as in 2011. The motion was seconded by Ms. Ansley, and the motion carried.

Mr. Bruschwein discussed Drinking Water Week and the plan is to continue as we have in the past.

There was discussion on who was attending the ACE this year in Dallas. It was decided to give the free registration to Larry Thelen.

Ms. Ansley talked about consideration of additional assessments. These are fees collected with the annual dues and are on top of what is paid for the association's annual fees. The lowest level is 5 percent. The Alaska section, which is similar in size, receives $1,800 yearly from this. A by-law amendment is needed if this is to be pursued.

Mr. Volk inquired about interest in a "Water Day" at the state fair this year. There is interest but more information should be available by the next board meeting.

The merits of having a section Facebook page were discussed. Some discussion centered on having a Facebook page instead of a website. Currently, the cost is $500 for every two years to have a website plus the need to have a person trained to keep the site updated and current. Ms. Quinn thought it might be possible to find a student to set up a Facebook page for the section to try it out. Ms Quinn moved to try a Facebook page for 2012. Mr. Sorenson seconded the motion, and the motion carried.

Ms. Ansley's motion to adjourn was seconded by Ms. Quinn. The meeting adjourned at 10:15 a.m.

Respectfully submitted,
David Bruschwein
Secretary-Treasurer

North Dakota Water Environment Association 52nd Annual Meeting Minutes

October 12, 2011

The North Dakota Water Environment Association (NDWEA) held its annual business meeting on Wednesday October 12, 2011, at the Ramkota in Bismarck North Dakota. Karla Olson called the meeting to order at the 11:45 a.m. business luncheon with 234 people present.

The minutes for last year's meeting were published in the *Official Bulletin*. President Olson asked if there were any objections to dispensing with the reading of the minutes. There were no objections. Tom Welle moved that the minutes be approved as published. Terry Rust seconded the motion. There was no further discussion on the minutes, and the motion passed.

Bill Gefroh was called upon by President Olson to present the Secretary-Treasurer's Report. As of September 30, 2011, the association has a general fund balance of $4,116.87. Last year on August 31, 2010, the balance was $4,940.78, a decrease of $823.91 from last year. The NDWEA membership is at 143, the same as last year at this time. Mel Bullinger made a motion to approve the Secretary-Treasurer's Report. Hazel Fetters-Sletten seconded it, and the motion passed.

The NDWEA promotes advancing the fundamental knowledge and education of the water environment. NDWEA expenditures are aimed at environmental activities that promote pollution prevention, resource recovery, preservation, and conservation.

In 2011, the NDWEA contributed monetary support to:

- The North Dakota State Science Fair by providing two award checks for $75.00, one to Mathias Larson with Oak Grove Lutheran in the junior division and one to Gage Metzen with Hankinson School District in the senior division for outstanding water quality projects.
- Gage Metzen and his teacher Marcus Friskop from Hankinson High School: $714.80 for the cost of the airline tickets to participate at the national Stockholm Junior Water Prize in Chicago, Illinois.
- The Student Chapter at the North Dakota State University in Fargo and the University of North Dakota in Grand Fords for their activities funds: $500 to help with expenses that occur with their participation in the student design competition at the Water Environment Federation Technical Exhibition and Conference (WEFTEC) that will be held in Los Angeles Calif. October 15 – 19, 2011.
- The Gateway to Science Center in Bismarck, Environmental Festival, $500
- The River Keeper in Fargo, Environmental Festival, $500
- Drinking Water Week ad, $470.59
- The Water Environment Research Foundation, $100
- Awards that were sponsored by the NDWEA in 2011 included two high school awards (one each for the junior and senior divisions for outstanding water quality projects at the North Dakota State Science and Engineering Fair), the Water Environment Federation (WEF) Hatfield Award, and the NDWEA President Service Award.

President Olson introduced the guest speaker, Ms. Sandra Ralston – Board of Trustee for the WEF. Ms. Ralston is currently a Senior Associate and Client Services Manager at Malcolm Pirnie in Charleston, S.C. She indicated that this is her first trip to North Dakota, and she is enjoying the weather, hospitality, reception, and the high enthusiasm and energy of the conference attendees. She talked about the importance of our jobs and that without water professionals, life would be far less livable and enjoyable. WEF is here to help us at work and to make our jobs easier and better. Some topics that the WEF is working on:

- "Water is Life and Infrastructure Makes it Happen" teaches the value of water infrastructure and the importance of investing in its long-term stability.
- "Value of Water" with AWWA – Tap water delivers for a one-message approach;
- Nutrient Management as a national issue
- Energy – such as renewal energy at a wastewater treatment plant

Training is especially important with the increase in technology. WEF has webcasts, (old ones are archived), publications and journals, and online learning opportunities. At the WEFTEC, WEF has 12 tracks of continuing education to help focus on training needs. Tracks include collection systems, government affairs, utility management, facility operations, and more. To get a list of technical sessions, workshops, and meetings for any of the 12 educational paths, or to discover what technical content will be covered, go to www.weftec.org.

President Olson called upon Seth Lynne from the nominating committee to present the NDWEA nominations. The nominating committee members were Seth Lynne and Eric Dodds. Mr. Lynne reported that the nominating committee has nominated Jessica Wagner for NDWEA vice president. President Olson asked if there were any further nominations from the floor. No nominations were offered.

Mr. Lynne nominated the following NDWEA slate of officers for 2011/2012:
President: Don Tucker
President-Elect: Wei Lin

Vice President: Jessica Wagner
Secretary-Treasurer: Bill Gefroh
Delegate: Bill Gefroh, second year of three-year term
Professional Wastewater Operations: Wayne Offerdahl, second year of three-year term
Past President: Karla Olson
Past President: Skip Rapp
Past President: Eric Dodds
Dan Stephan moved that the nominations be closed and a unanimous ballot be cast for the nominated slate of announced officers. Miranda Kleven seconded the motion, and the motion passed.

At this time, President Don Tucker became the chief officer of the NDWEA. His first duty as president was to present Karla Olson with the President's Service Award. With no further business, President Tucker asked for a motion to adjourn. Hazel Fetters-Sletten so moved, Terry Rust seconded, and President Tucker adjourned the meeting.

Respectfully submitted,
Bill Gefroh
Secretary-Treasurer

North Dakota Water Environment Association Executive Committee Meeting Minutes

January 18, 2012

The Executive Committee for the North Dakota Water Environment Association (NDWEA) met at the Seven Seas in Mandan, North Dakota on January 18, 2012. Present were President Don Tucker, Past President Karla Olson, Professional Wastewater Operations Representative Wayne Offerdahl, and Secretary/Treasurer and Delegate Bill Gefroh. Terry Rust, NDWEA Operations and Safety Committee member, also attended.

President Tucker called the meeting to order at 11:00 a.m. President Tucker requested a motion to dispense with the reading and approval of the May 15, 2011meeting minutes, as distributed to the Executive Committee members. Karla Olson so moved. Don Tucker seconded the motion. Without a quorum, a vote by the NDWEA Executive Committee members was taken through email on 2/6/2012, and the motion passed.

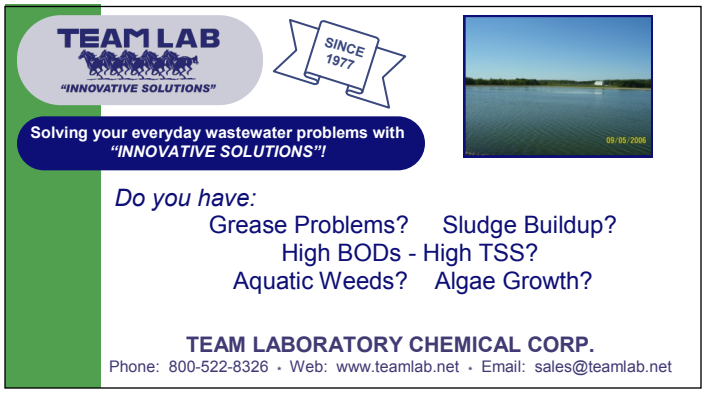
Bill Gefroh presented the Treasurer's Report, which reviewed in detail the receipts and expenses from January 1, 2011 through December 31, 2011. The NDWEA net worth, as recorded in the report was $6,122.42 as compared to $5,986.67 last year at this time. President Tucker requested a motion to approve the report as presented. Wayne Offerdahl so moved. Karla Olson seconded the motion. A vote by the NDWEA Executive Committee members was taken through email on 2/6/2012, and the motion passed. Bill Gefroh reported that the current NDWEA membership is at 124 compared to 143 this time last year.

New Business:
Potential topics and speakers were discussed for the 2012 North Dakota Water and Pollution Control Conference (NDWPCC). Topics suggested were:

- University of North Dakota (UND) student group – Biosolids Disposal Options, as will be presented at the Water Environment Federation Technical Exposition Conference (WEFTEC)
- North Dakota State University student group – classic wastewater topic as will be presented at the WEFTEC.
- Regulatory Update – North Dakota Department of Health
- Wastewater Collections, Treatment, and Lagoons Panel Discussion - Karla Olson, Don Tucker, Wayne Offerdahl, and Rick Gillund
- Industrial Pretreatment Panel Discussion – Bill Gefroh, Don Tucker, Terry Rust, William Sukalski, and Jeff Roerick
- EPA Energy Star Benchmark Ratings for Water and Wastewater Systems
- Planning Infrastructure for Future Growth – Williston, Minot, Dickinson, and Watford City representatives
- Flooding in North Dakota Panel Discussion – Keith Demke, Dan Jonasson, and a Fargo representative
- Minot Water and Wastewater Infrastructure Improvements – Dan Jonasson and Larry Meyers

Committee members will further investigate these presentation topics, presenters, and other topics, and bring their findings to the next NDWEA meeting in May 2012.

The NDWEA will continue its support for the North Dakota Science Fair (NDSF) by providing awards and judges. The NDSF will be in Grand Forks March 29-30, 2012. A plaque and a $75 cash prize will be presented to the best water quality project for both the junior and senior divisions. NDWEA will also provide travel expenses (up



to $1,000) for a worthy project for one student and his or her teacher to compete nationally at the Stockholm Junior Water Prize (SJWP) competition to be held in Boston, Mass., June 14-16, 2012. NDWEA members who have volunteered to be judges at the 2012 NDSF: Jessica Wagner, Dan Stephan, James Norberg, and Don Tucker.

NDWEA Committee Members discussed educational support for 2012. Karla Olson made a motion that NDWEA provide:

- $250 to the Gateway to Science in Bismarck
- $250 to the River Keepers in Fargo
- $100 to the Water Environment Research Foundation
- $100.00 for science fair plaques and $150 for cash prizes
- Up to $1,000 to be used for transportation for a science fair student and teacher to compete for the national SJWP
- $500 to the NDSU Student Chapter activity fund to be used for expenses incurred for attending the 2012 WEFTEC in New Orleans to participate in the student design competition. Included is $1000 for reimbursement for finishing 3rd place at WEFTEC 2011 in the Design Competition Environmental Design Division.
- $500 to the UND Student Chapter activity fund to be used for expenses incurred for attending WEFTEC 2012 to participate in the student design competition
- $500 for co-sponsoring the Drinking Water Week ad with the North Dakota American Water Works Association, North Dakota Rural Water Systems Association, North Dakota American Public Works Association, and the NDWPCC

Wayne Offerdahl seconded the motion. A vote by the NDWEA Executive Committee members was taken through email on 2/6/2012, and the motion passed.

The NDWEA will request that the Awards Committee members make the determination for solicitation of the Burke and Peterson Safety Awards and make the selection for the 2012 WEF awards (Hatfield, Bedell, Laboratory Analyst Excellence, and Burke) .

With no further business, President Tucker adjourned the meeting at 1:50 p.m.

Respectfully submitted,
Bill Gefroh
NDWEA Secretary/Treasurer

MINUTES: APWA ND Chapter Executive Committee Meeting

January 18, 2012, Mandan, North Dakota

Call to Order: Dan Jonasson-President

Minutes: Approved
Motion: Lance Meyer
Second: Rick Gillund

Treasurer's Report:
Checking Acct: Total revenue of $6335.00, total expenses of $4727.00 for annual net assets of $1608. Total checking assets of $15,563.00.
Merrill Lynch: Beginning of 2011 of $15,022.28. Ending 2011 of $15,250.33.
Total assets of $30,585.15
Motion: Chad Zander
Second: Jeff Heintz
All approved.

Delegate Report: Lance reported on national convention which he could not attend. Lance is planning to go this year.

Committee Reports:
Audit Committee: Chuck stated that a committee needs to be appointed. This year there is a new form that needs to be submitted to national. Walt Smith and Chad Zander will volunteer for audit to be completed after the meeting.

Student Chapter Membership: Nothing new. Chapter will pay a portion of the student fee.

Old Business:
Nothing

New Business:
Awards Nomination Process Webcast: January 26, 2011 at 2:00 CT. All project nominations must be submitted electronically.

Chapter Membership Manager: National is trying to encourage growth. Everyone can promote growth with new members. Chuck will continue to be chapter membership manager.

2012 Project of the Year Awards: Nominations due May 11, 2012: Shawn Soehren will be recruiting projects. Chuck will provide list of all engineering firms working in the state along with an example form of the request for projects. Prefer three hard copies, no electronic copies due to printing costs. Once projects are selected to go to national, then we will get electronic files.

NDWPCC 2012 Conference Sessions: Convention is in Minot. The *Official Bulletin* will be mostly on the Minot

flood of 2011. Need topics by meeting on May 16, 2012. Need nine hours of topics for the conference sessions.

Possible topics:

- Minot flood one year later.
- Drinking Water Week - May 6-12, 2012/Joint venture with other groups. $500 cost per organization. Approved to go ahead with same donation as previous years.
- National Public Works Week - May 20-26, 2012: Good opportunity to promote public works throughout the communities. Local Chapter could assist in costs of handouts, advertising, photos, press releases, etc. Let Chuck know so we can offer assistance with costs. Photo with Governor is tentative to governor's schedule and will be published in the *Official Bulletin*.

Gateway to Science - 2012 Annual Sponsorship:
Historically done in previous years for $1200 sponsoring 1000 5th grade students throughout the state at Bismarck State College. APWA gets credit for festival sponsor and underwriting a class. All approved to continue this good program.

Introduced Walt Smith to everyone.

Adjourn:
Motion: Lance Meyer
Second: Chad Zander

Submitted by:
Terry Boehm, Secretary Treasurer

Formation of Nitrosamines During Drinking Water Treatment

Tanush Wadhawan, North Dakota State University

Presence of biodegradable organics in effluents of drinking water treatment plants (WTPs) can support bacterial growth in the water distribution system. The bacterial growth can lead to undesirable clogging of the distribution system and/or an outbreak of a pathogenic bacterium. To prevent bacterial growth in the distribution system, the majority of WTPs all across the United States rely on the use of disinfectants such as chlorine or chloramine. These disinfectants are known to react with dissolved organic matter to produce toxic disinfection byproducts (DBPs). Trihalomethanes and haloacetic acids are the common regulated DBPs. Recent studies on DBPs have focused on understanding the formation of unregulated nitrogen containing disinfectant byproducts (N-DBPs) which include haloacetonitriles, halonitromethanes, haloacetamide, and nitrosoamines.[1] Dissolved organic nitrogen (DON) is identified as a precursor for these carcinogenic N-DBPs in drinking water. N-DBPs comparative to DBPs is a newer area which needs a lot of attention.[2]

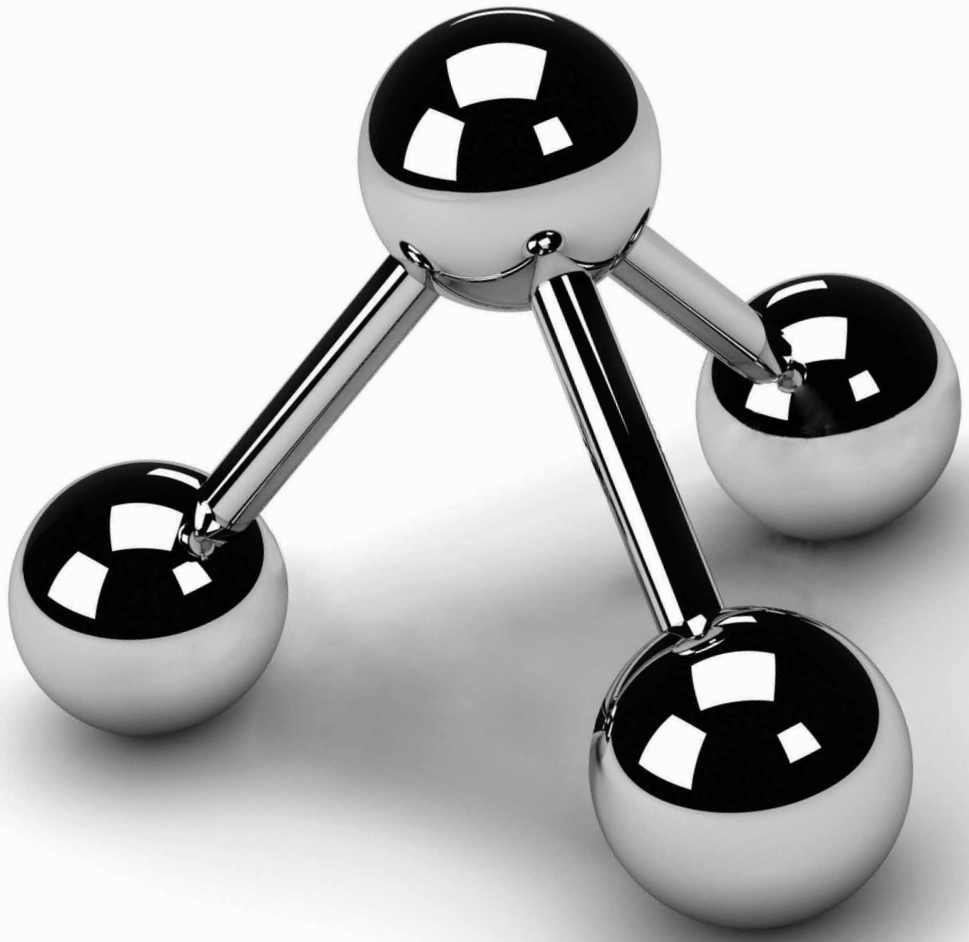
Here, the focus is on nitrosamines. Both conventional and advanced treatment approaches have shown to either increase or decrease nitrosamine concentration in water. Treatment processes such as coagulation, filtration, oxidation and disinfection, and certain physical and chemical parameters of the water can result in the formation of nitrosamines. Amount and type of organic precursors (DON and total organic carbon), temperature, pH, dissolved oxygen, inorganics (such as bromide and nitrogen species), and other chlorine scavengers have been shown to influence nitrosamine formation. For example, presence of bromide in water can catalyze the reactions between amines and chloramines to form n-nitrosodimethylamine (NDMA).[3] Lowering the concentration of dissolved oxygen in water has been shown to contribute lower concentrations of NDMA from the dimethylamine. In addition, chlorine scavengers other than nitrosamine precursors in water can reduce the amount of NDMA formed.

Exact parameters and conditions resulting in the formation of nitrosamines are not clear, and it is necessary to identify the processes which may generate nitrosamines. Identifying these conditions will help in preventing formation of nitrosamines during water treatment. In a treatment process, contact time (along with types and the sequence of treatment processes) can affect nitrosamine removal, and it is important to identify the correct characteristics. Even after treatment, if the treated effluent carries organics, monochloramine and nitrite, nitrosamine formation can take place in the distribution system. As the formation of nitrosamine is slow, it can result in lower amounts of NDMA formation during the treatment process but may increase NDMA formation within the water distribution system. ♦

[1] Mitch, W.A., Gerecke, A.C., Sedlak, D.L., 2003, A n-nitrosodimethylamine (NDMA) precursor analysis for chlorination of water and wastewater, Water Research, 37, p. 3733-3741.

[2] Muellner, M.G., Wagner, E.D., Mccalla, K., Richardson, S.D., Woo, Y-T., Plewa, M.J., 2007, Haloacetonitriles vs. regulated haloacetic acids: Are nitrogen-containing DBPs more toxic? Environmental Science and Technology, 41, p. 645-651.

[3] Choi, J., Valentine, R.L., 2002, Formation of N-nitrosodimethylamine (NDMA) from reaction of monochloramine: a new disinfection by-product, Water Research, 36, p. 817-824.



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Drinking Water Program Directory		
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Acrylamide and Epichlorohydrin Rule	Gary Stefanovsky	701-328-5287
Arsenic Rule	Katie Luther	701-328-5258
Consumer Confidence Reports	LeeAnn Tillotson	701-328-5293
Disinfectant/Disinfection Byproducts Rule (TTHM, HAA5) Stage 1 and Stage 2 Rule	Lydia Fewless	701-328-5221
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	Justin Feld	701-328-6624
Inspections: Southeast	Rachel Wolff	701-328-6375
Inspections: Southwest	Bob Markhouse	701-328-6623
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)	Gary Stefanovsky	701-328-5287
Nitrate/Nitrite Program	Katie Luther	701-328-5258
Operator Certification	Craig Bartholomay	701-328-6626
Operator Expense Reimbursement	LeeAnn Tillotson	701-328-5293
Operator Training	Mike Brisben	701-328-6622
Pesticides (SOCs)	Lydia Fewless	701-328-5221
Primary and Secondary Inorganics	Lydia Fewless	701-328-5221
Public Notice Rule	LeeAnn Tillotson	701-328-5293
Public Water System Updates (changes to source, treatment, contact, etc.)	Tammy Lamphear	701-328-5295
Radionuclide Rule: Gross Alpha, Total Radium, Uranium	Lydia Fewless	701-328-5221
Total Coliform Rule	Jeni Walsh	701-328-5231
Unregulated Contaminant Monitoring	LeeAnn Tillotson	701-328-5293
Volatile Organic Chemicals (VOCs)	Lydia Fewless	701-328-5221
Central Phone: 701-328-5211		**Fax: 701-328-5200**

North Dakota Pollutant Discharge Elimination System Program Directory		
Program Administrator	Karl Rockeman	701-328-5225
Animal Feeding Operations	Brady Espe Jeremy Lang	701-328-5228 701-328-5219
Biosolids	Marty Haroldson Karl Rockeman	701-328-5234 701-328-5225
Construction Stormwater	Dallas Grossman Luci Snowden Amanda Cross	701-328-5242 701-328-5239 701-328-5244
Dewatering and Hydrostatic Testing	Marty Haroldson	701-328-5234
Discharge Monitoring Reports (DMRs)	Curt Steier Marty Haroldson	701-328-5260 701-328-5234
DMR Quality Assurance (QA) Study	Marty Haroldson	701-328-5234
Industrial Pretreatment	Jeff Roerick	701-328-5240
Industrial Stormwater	Dallas Grossman Luci Snowden Amanda Cross	701-328-5242 701-328-5239 701-328-5244
Inspections	All Staff	701-328-5210
Lagoon Overflows/Releases/Spills	All Staff	701-328-5210
MS4 Stormwater	Dallas Grossman Luci Snowden Amanda Cross	701-328-5242 701-328-5239 701-328-5244
Public Notices/NDPDES Permits	Curt Steier	701-328-5260
Septic Pumper	Marty Haroldson	701-328-5234
Wastewater Discharge Approvals	Curt Steier Marty Haroldson	701-328-5260 701-328-5234
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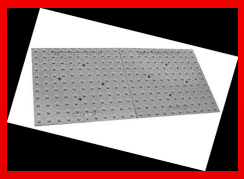
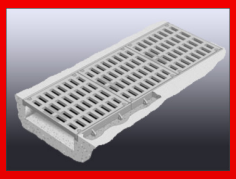


Trench Grating



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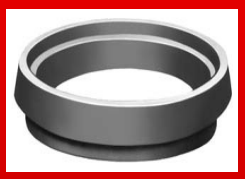
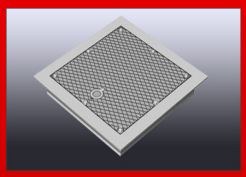


Tree Grating

Access Hatches



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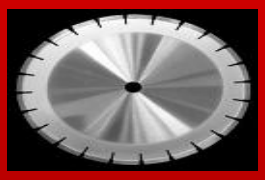

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