New Smithsonian Water/Ways Exhibit Debuts in Minnesota

The Minnesota Department of Health, in partnership with the Minnesota Humanities Center and state partners, including the Minnesota Pollution Control Agency, the Minnesota Historical Society, the Minnesota Department of Natural Resources, and the Minnesota Section of the American Water Works Association, is pleased to announce the debut of a new Smithsonian Institution exhibit – Water/Ways. The exhibit opened at Prairie Woods Environmental Learning Center near Spicer, Minnesota, on Saturday, June 25, 2016, and will be featured at five locations around Minnesota until April 9, 2017.

Water/Ways is a free traveling exhibit that focuses on the relationships between people and water—how water connects story, history, faith, ethics, the arts, and science. Water/Ways reveals the central nature of water in our lives. This is done by exploring how Americans use water, how water unites communities, how water affects every element of life, and how Americans care for our water and protect this valuable resource for the future, while seeking active solutions to current water problems.

As part of the Water/Ways exhibit, a companion exhibit, We are Water MN, has been developed to tell the Minnesota story and will accompany the traveling exhibit. We are Water MN is an interactive story-collecting exhibit that focuses on individuals’ relationships with, and responsibilities to, water. The exhibit raises awareness about the quantity and quality of Minnesota’s water, connecting exhibit-goers to active water solutions. The Minnesota Department of Health’s mission to protect, maintain and improve the health of all Minnesotans is weaved throughout the exhibit.
Minnesota is one of only five states chosen by the Smithsonian to launch this new traveling exhibit. This exhibit is specially designed for viewing in smaller, rural communities and will visit six Minnesota communities in 2016 and 2017. Through the *Water/Ways* traveling exhibit, each host community will tell its local water stories and envision the future of water. The Minnesota host sites for *Water/Ways* are:

- **St. Peter (Nicollet County)**, Nicollet County Historical Society. August 13-September 25, 2016
- **Red Wing (Goodhue County)**, Goodhue County Historical Society. October 1-November 13, 2016
- **Sandstone (Pine County)**, Audubon Center of the North Woods. November 19, 2016-January 1, 2017
- **Lanesboro (Fillmore County)**, Lanesboro Arts. January 7-February 19, 2017
- **Detroit Lakes (Becker County)**, Becker County Historical Society. February 25-April 9, 2017

The public can participate in the conversation to raise awareness of water on social media at #wearewatermn. For more information about exhibit host sites, tour dates, and community activities, visit Minnesota Humanities Center (mnhum.org/waterways). For other questions, you may contact Christi Shortridge, Communications Director, Minnesota Humanities Center, at: Christi@mnhum.org, 651-772-4251, cell: 651-278-2635.

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**Minnesota Plumbing Board Approves Use of Polyethylene Water-Supply Pipe Inside and Underneath Buildings**

Effective June 15, 2016, the Minnesota Plumbing Board approved the use of polyethylene pipe for building water supply, inside or under a building. This allows polyethylene pipe to be installed from the source of the water supply, usually a well or watermain, to the water meter or pressure tank. The materials and installation must be in accordance with the Minnesota Plumbing Code, Minnesota Rules, chapter 4714. The interpretation and rule do not limit the allowable distance inside a building to 2 feet as required by the previous Plumbing Code. Polyethylene is still prohibited for water distribution pipe — that is, piping downstream of the water meter or pressure tank.

The new Minnesota Plumbing Code, Minnesota Rules, chapter 4714, was adopted January 23, 2016, by the Minnesota Plumbing Board. The new Plumbing Code adopts large portions of the Uniform Plumbing code by reference, including installation standard IS7-2008, that prohibits polyethylene building supply and yard piping from being installed inside or under any building. On May 11, 2016, the Minnesota Plumbing Board issued a Notice of Final Interpretation interpreting that the pipe supplying water to a water meter or pressure tank inside a building is considered part of the “building supply.” On June 14, 2016, the Minnesota Plumbing Board heard a formal Request for Interpretation submitted by David Henrich and the Minnesota Water Well Association concerning installation standard IS7-2008, the requirements for building water-supply pipe in Chapter 6 of the Uniform Plumbing Code as adopted, and the May 11, 2016, Plumbing Board interpretation of the term “building supply.” On June 15, 2016, the Plumbing Board issued a final interpretation that polyethylene pipe, when used for building supply, may be installed inside and under buildings. The final interpretation can be found at: [Notice of Final Interpretation](www.doli.state.mn.us/PDF/pb/Interp/PB0085.pdf).
Sewer Materials, Testing Requirements, and the 20-foot Water-Supply Well Setback

The following building sewer, and underground drain, waste, and vent pipe materials approved by the new Minnesota plumbing code, Minnesota Rules, chapter 4714, are acceptable for the reduced 20-foot setback distance to water-supply wells as specified in Minnesota Rules, part 4725.4450, subpart 1, item G (5). The sewer must be successfully tested in accordance with the plumbing code requirements. The reduced setback distance allowance does not apply to community public water-supply wells.

- ABS (Schedule 40): ASTM D 1527, ASTM D 2661, ASTM D 2680,* ASTM F 628
- Cast Iron: ASTM A 74, ASTM A 888, CISPI 301
- Co-Extruded ABS (Schedule 40): ASTM F 1488
- Co-Extruded PVC (Schedule 40): ASTM F 891, ASTM F 1488
- Polyethylene: ASTM F 714*
- PVC (Schedule 40): ASTM D 1785, ASTM D 2665, ASTM D 3034,** ASTM F 794*

(Sewer materials approved under the old Plumbing Code, but not approved by the new Plumbing Code, are not eligible for the reduced 20-foot setback to a well, after January 23, 2016.)

*Allowed for building sewer, but not allowed for building drain, or underground drain, waste or vent piping.

**The Department of Labor and Industry (DLI) has approved the use of ASTM D 3034 pipe as an alternative material only for gravity building sewers and only if installed on a continuous granular bed. Local governments who administer the Plumbing Code may have restrictions. D3034 pipe will be allowed for the 20-foot well setback if installed in accordance with the DLI requirements and if approved by the local government where applicable. Other alternative materials, even if approved by DLI or local governments, do not qualify for the reduced setback.

Other important issues to note include:

1. In addition to standards for the sewer pipe, the Minnesota Plumbing Code requires fittings to meet a specified standard listed in Table 701.1 of the Plumbing Code.

2. A “building sewer” extends from the end of the building drain to the public sewer (usually a collector or municipal sewer), private sewer (usually the septic tank of a Subsurface Sewage Treatment System) or other point of disposal.

3. A “building drain” is the lowest part of the waste drainage system (drain, waste and vent) and ends at the building sewer, 2 feet outside the building wall.

4. A sewer connecting a septic tank to a sewage drainfield, absorption area, or a mound; or a publically-owned sewer such as a municipal or collector sewer, are not regulated by the Plumbing Code; however, the setback distance requirements in the Well Code still apply.

5. The Plumbing Code requires all plumbing, drainage, and venting systems including building sewers to be tested with water or air. The water test requires a 10-foot head of water to be maintained for 15 minutes without water leakage. The water test is no longer limited to plastic pipe. The air test requires 5 pounds per square inch (psi) of air pressure, or measured as 10 inches of mercury, to be maintained for 15 minutes without loss of air.
The water from the well at St. Anne’s Episcopal Church, in Sunfish Lake, Dakota County, Minnesota (formerly Church of the Good Shepherd), has had a long history of total coliform bacteria problems. The Minnesota Department of Health’s (MDH’s) Drinking Water Protection Section previously conducted investigations in response to total coliform bacteria contamination in the well in 1998, 2002, 2008, and 2011. During those investigations, the church responded by disinfecting the well with chlorine, re-sampling, and testing the water. In those cases, the bacteria was eliminated and the well was placed back into service. The most recent problem began in August 2015, and despite chlorinating the well numerous times, correcting minor plumbing issues, and redeveloping the well by air-lifting, the bacteria problem did not go away. MDH has collected over 40 water samples from the well, since August 2015, and all were positive for total coliform bacteria. E. coli bacteria were not detected in any of the water samples.

The 304 foot deep, double cased (10 inch x 6 inch) well was constructed in 1961. The 10-inch casing was set from the surface to the top of the Platteville limestone aquifer at 150 feet. The 6-inch casing was set from the surface to the lower St. Peter sandstone formation at 218 feet. Open bore hole in bedrock extended from 218 to 304 feet. Water was obtained from the St. Peter sandstone aquifer. The well had a 6-inch Duplex Pitless Unit. The casing extended over 12-inches above the ground surface, and the well had a complying well cap. The well construction record did not indicate if the well was grouted at the time of construction. The well contractor who constructed the well was not able to find grouting records for the well.

In January 2016, the church hired Kimmes-Bauer Well Co. from Hastings, Minnesota, to remove the pump from the well so that it could be inspected for any obvious leaks or defects that might explain the source of the bacteria. A down-hole video camera was used to inspect the well and it revealed a slow, but constant leak at the pitless unit connection 6 feet beneath the ground surface. No other defects, cracks, holes, or leaks were noted during the remainder of the video inspection. Drinking Water Protection staff collected water samples that same day, from a temporary, well-head discharge. Those samples were positive for total coliform bacteria. Drinking Water Protection Section staff returned five days later, after the well was re-assembled, chlorinated, and flushed. Again, all samples were positive for total coliform bacteria.

MDH and Dakota County staff concluded that surface water was likely entering the well, possibly at the pitless unit connection, or some other unidentified breech in the well casing. St. Anne’s Church leaders met and discussed their options. The church decided to have the contaminated well permanently sealed and a new well constructed, rather than spending more money for additional disinfection and troubleshooting. In March 2016, the church applied to MDH for a Legacy Fund grant to construct a new

St. Anne’s Episcopal Church Well, Sunfish Lake, Dakota County, Minnesota.
well. They also applied to Dakota County for a well sealing grant. Both requests were approved and the church moved forward and had a new, 8-inch x 4-inch, 420-foot deep well constructed to obtain water from the Prairie du Chien aquifer. Follow up water samples were collected on June 10, 2016, and then again on July 13, 2016. All follow up water samples were negative for total coliform bacteria.

Before sealing the old well, MDH and Dakota County requested that Kimmes-Bauer Well Drilling excavate around the contaminated well to expose the pitless unit and the well casings for leaks and for the presence of grout between the casings. After cleaning soil off the casings and pitless unit, two holes were found in the 6-inch casing, just below the pitless spool. There was also surface water in the excavation. It is likely that the source of the total coliform bacteria in the well was surface water entering the well through holes that had corroded through the 6-inch casing below the pitless spool. There was some evidence of neat-cement grout in the excavation around the pitless unit. Given the persistent bacteria problems, and without a grouting record or clear proof that the entire annular space between the casings was filled with grout, perforation of the 6-inch casing was required prior to permanent sealing. Kimmes-Bauer Well Company reported that the casing was successfully perforated, likely indicating a lack of grout between the casings.

This case shows that persistent coliform bacteria positive results in water samples collected from wells, despite repeated disinfection with chlorine and well development, may indicate problems with the well casing or pitless unit connection. It is important to note that this well was 55 years old when it was determined that holes had corroded through the steel well casing and serves to show that steel well casing does not last forever.

Follow the Minnesota Department of Health with Social Media

The Minnesota Department of Health (MDH) is social! You can follow MDH on Facebook, LinkedIn, Twitter, and Instagram. Follow @mnhealth to see photos and updates showing what MDH is up to! Keep an eye out for posts from Well Management Section.
MDH Issues Press Release Regarding New Federal Health Advisory Levels for Perfluorochemicals (PFCs) in Drinking Water

**Southern Washington County**

The Minnesota Department of Health (MDH) issued a news release on August 23, 2016, notifying the public that eighty homes in southern Washington County would soon be receiving bottled water for drinking and cooking in response to the release of new, federal health advisory levels for two perfluorochemicals; namely perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA).

PFOA and PFOS have been used in the manufacture of carpets, clothing, fabrics, furniture, paper packaging for food, and other materials such as cookware that resists water, grease, or stains. They are also used in some products used for firefighting at airfields and in a number of industrial processes. In Washington County, PFC contamination in groundwater was first discovered in 2002. From the late 1940s until as recently as the 1970s, the 3M Company disposed of products containing PFCs, including PFOA and PFOS, in one landfill and three other dump sites in Washington County.

The MDH sent letters to 80 residents known to have PFOS and/or PFOA in their drinking water wells, in exceedance of the new federal Environmental Protection Agency (EPA) lifetime health advisory levels of 70 parts per trillion (ppt) for both PFOS and PFOA. Residents can choose to receive bottled water until whole house, granular activate carbon (GAC) filtration systems can be installed in their homes.

In the coming months, the Minnesota Pollution Control Agency (MPCA) and the MDH will be sampling approximately 400-500 other wells in the affected areas to see if PFOS and/or PFOA are detected above the new, federal health advisory levels. Those residents with well water above the advisory levels will be offered bottled water until filters can be installed.

The EPA set the new health advisory levels based on recent studies in laboratory animals which indicated new, lower values, would better protect developing fetuses and infants. *(The previous interim health advisory levels were 200 ppt for PFOS and 400 ppt for PFOA.)* Studies indicate exposure to PFOA and PFOS at high levels may result in an increased risk of adverse health effects, including developmental effects (such as low birth weight, accelerated puberty, skeletal variations); some cancers (testicular, kidney), liver damage, interference with immune system function; thyroid effects; or cholesterol changes. *(MDH Health Risk Limit [HRL] values for PFOA and for PFOS are currently set at 300 ppt for each chemical, and are currently under review for revision.)*

MDH Commissioner Ed Ehlinger commented, “While we believe the immediate health risks for most people exposed to PFCs are low, the latest information from EPA indicates a risk for developing fetuses and infants. This additional information prompted us to take action now to reduce the risk of exposure from drinking water. People are exposed to PFCs, including PFOA and PFOS, from a wide variety of substances and consumer products in our everyday lives. Eliminating a significant source over which we have some control makes good public health sense.”

MDH reports that 81 homes in Washington County already have GAC filters in place to remove PFC contamination to acceptable levels. Several other homes are provided bottled water, instead of filters, at the homeowners’ request. MDH and MPCA are currently monitoring more than 1,500 private wells for PFCs in Washington County. The city of Oakdale, Minnesota, has four municipal wells that exceed the EPA advisory level. Their finished water is blended or treated so that finished water does not exceed the EPA advisory levels.
Water with PFC levels above health advisory levels should not be used for drinking or cooking; but is considered safe for bathing, showering, cleaning, and washing clothes. Until all wells in the target areas are sampled, residents with concerns about the safety of their drinking water, can take steps to reduce potential exposure to PFCs. Information about point-of-use filters and other steps people can take to minimize exposure, can be found on MDH website at: Perfluorochemicals (PDFs) and Health (www.health.state.mn.us/divs/eh/hazardous/topics/pfcshhealth.html.)

For more information and a map of the affected areas, go to MDH website at: MDH Response to EPA Health Advisory for PFOS and PFOA (www.health.state.mn.us/divs/eh/hazardous/topics/pfcs/current.html).

For questions regarding GAC filter installation, contact Mr. Gary Krueger at MPCA at 651-757-2509.

For questions about water sample results, contact Ms. Virginia Yingling at MDH at 651-201-4930.

For questions about health concerns or more information about PFCs, contact the Site Assessment and Consultation Unit at MDH at 651-201-4897.

Obituaries

Rickey D. Nash, age 59, from Waverly, Minnesota, passed away on March 23, 2016. Rick was formerly with Bergerson-Caswell, Inc. and Dedicated Geothermal, LLC. Rick served on the Minnesota Department of Health’s Advisory Council on Wells and Borings as the Vertical Heat Exchanger Contractor Representative for 12 years, from 2003 until 2015.

Rexford D. Singer, age 83, from Falcon Heights, Minnesota, passed away on July 30, 2016. Rex Singer was a professor in the School of Public Health at the University of Minnesota and taught several environmental health classes on topics including “Drinking Water and Health” and “Well Construction.” He advised and mentored many students who are now public health professionals. He co-authored the book “Water Well Manual,” published in 1971. He served on the Minnesota Department of Health’s Advisory Council on Wells and Borings, as a “Public Member” representative for 27 years. Rex’s primary interests were in providing safe, adequate, public and private drinking water supplies, both in the United States, and abroad. Rex’s family noted that he enjoyed his service on the advisory council and enjoyed the people he met and served with on the council. Attendees at his funeral reflected and reminisced on his gentleness, kindness, and dry wit. Rex was a consummate drinking water and public health professional who will truly be missed!
Kelly Jorgensen, Well Standards Representative with the Minnesota Department of Health (MDH) Well Management Section, retired from state service on August 9, 2016.

Kelly was one of the original group of well inspectors hired by MDH in 1990. One of the best things the well program did was to hire inspectors who were formerly employed in the well drilling industry. Prior to coming to MDH, Kelly worked for Northstar Well Drilling Company in Brainerd, Minnesota.

Kelly began his career with MDH working from the St. Cloud District Office. He was promoted from Well Inspector to Well Standards Representative in 1996. In 2001, Kelly transferred to the Bemidji District Office and worked from there until his recent retirement. Kelly worked closely with well contractors, local governments, septic system installers, real estate agents, and the public on many well construction, well sealing, well disclosure, and water quality projects over the years. He also provided valuable insight and guidance for well code rule revisions in 1991 and 2008. Kelly was well liked and respected by his coworkers. His contributions to the protection of public health, safety, groundwater quality, and the environment, particularly his efforts to ensure safe drinking water and the support he provided to the well industry are immeasurable. Minnesotans will benefit from his excellent work for years to come.

Kelly said that he will truly miss the friendship and camaraderie with his coworkers at MDH. He is looking forward to building a new home and workshop and spending more time with his family. In addition, Kelly plans to spend more time pursuing hobbies including collecting and working on antique snowmobiles and watching wildlife on his property.
2016 Appointments to Advisory Council on Wells and Borings

On April 18, 2016, Minnesota Department of Health (MDH) Commissioner Edward Ehlinger, M.D., M.S.P.H., appointed two new members to the Advisory Council on Wells and Borings: Nathan Gruman of Braun Intertec Corp. and Troy Kuck of Searles Well Drilling, Inc. (Nathan Gruman has since resigned from his monitoring well contractor position, to pursue other opportunities.) The commissioner also reappointed four currently serving members to new terms: David Kill, Dennis Koepp, Haden Shipman, and Brian Stangret. In addition, two state agency representatives were reappointed by their respective commissioners: Michael Liljegren of the Minnesota Department of Natural Resources, and Richard Lamb of the Minnesota Department of Transportation.

The current membership of the council is as follows:

**Well Contractors:**
David Henrich, Bergerson-Caswell, Inc., Maple Plain, Minnesota
Dennis Koepp, Denny’s Drilling, Inc., Saginaw, Minnesota
Troy Kuck, Searles Well Drilling, Inc., New Ulm, Minnesota
Danny Nubbe, Mineral Service Plus, LLC, Green Isle, Minnesota
Haden Shipman, Antonsen Well Drilling, Inc., Dent, Minnesota
Mark Thein, Thein Well Rochester, Inc., Rochester, Minnesota

**Elevator Boring Contractor:**
Brian Stangret, Midwest Elevator and Drilling, Inc., Waconia, Minnesota

**Explorer:**
Daniel England, P.G., Eveleth Fee Office, Eveleth, Minnesota

**Monitoring Well Contractor:**
Vacant

**Bored Geothermal Heat Exchanger Contractor:**
Vacant

**Public Members:**
Roy Forsstrom, Bloomington, Minnesota
David Kill, P.E., Shoreview, Minnesota

**State Agency Members:**
Eric Mohring, Minnesota Board of Water and Soil Resources
Chris Elvrum, P.G., Minnesota Department of Health
Michael Liljegren, Minnesota Department of Natural Resources
Richard Lamb, P.E., Minnesota Department of Transportation
Bruce Bloomgren, Minnesota Geological Survey
Vacant, Minnesota Pollution Control Agency

The council advises the commissioner and the department on issues regarding the regulation of wells and borings. The council assists in the examination of well contractor license applicants; makes recommendations on Well Management Section policies, rulemaking, and statutory initiatives; and provides technical review and information to the section. The council also provides a forum for all well and boring contractors to raise industry concerns.
The Minnesota Department of Health (MDH) is seeking qualified individuals to fill the vacant monitoring well contractor and bored geothermal heat exchanger contractor member positions on the Advisory Council on Wells and Borings. The council advises MDH on technical matters related to the construction, maintenance, and sealing of wells and borings, and on the licensure/registration of well and boring contractors. The council meets quarterly (usually on the first Wednesday of March, June, September, and December). As established in Minnesota Statutes, section 103I.105, the council consists of 18 members, including six well contractors, four limited or specialized well/boring contractors (elevator, explorer, monitoring well, bored geothermal heat exchanger), two public members, and six representatives of various state agencies. Terms of appointment are for four years. More information on the council can be found at: Advisory Council on Wells and Borings (www.health.state.mn.us/divs/eh/wells/lwcinfo/advisory.html).

Persons interested in serving on the council must submit an application to the Secretary of State, who handles applications for open appointment to state boards, councils, commissions, and other groups. The MDH Commissioner makes the actual appointments to the council. Members receive a $55 per diem for each meeting attended. Expenses for lodging, meals, and travel are reimbursed. State agency representatives are assigned by their respective Commissioners and do not receive per diem.

Application forms and related information can be obtained by contacting the Secretary of State at:

Secretary of State – Open Appointments
State Office Building, Room 180
100 Rev. Dr. Martin Luther King Jr. Boulevard
St. Paul, Minnesota 55155-1299
Phone: 651-297-5845
Email: open.appointments@state.mn.us
Website: www.sos.state.mn.us/boards-commissions/current-vacancies/

Individuals may also contact Mr. Ed Schneider of MDH at 651-201-4586 or ed.schneider@state.mn.us for information on the council or to request an application form.
Continuing Education Calendar

The Internet link to the Minnesota Department of Health (MDH), Well Management Section’s, Continuing Education Programs (www.health.state.mn.us/divs/eh/wells/lwcinfo/training.html).

This calendar lists the upcoming continuing education courses that have been approved for renewal of certification for representatives of Minnesota licensed and registered well and boring contractors. The calendar also lists the number of credits available for each course. The calendar is updated monthly and, if you subscribe, you will be notified by email when this page changes (new classes added, changes to existing classes).

For additional information about any of these training opportunities, call the contact person listed for the program of interest. For general information about continuing education, more current CEU listings, or to request approval for other continuing education activities not listed, contact Norm Mofjeld, MDH, Well Management Section at 651-201-4593, or norman.mofjeld@state.mn.us.
New Contractor Certifications*

**Well Contractor**
Kyle Waskosky  
Waskosky Well Drilling Contractors, Inc.  
Elbow Lake, Minnesota

Thomas Spartz  
Spartz and Sons Well Co.  
Iona, Minnesota

**Monitoring Well Contractor**
Jarod Miller  
American Engineering Testing, Inc.  
Inver Grove Heights, Minnesota

**Dewatering Well Contractor**
Brian McShane  
Northern Dewatering, Inc.  
Albertville, Minnesota

**Pump Installer**
James Bockman  
JDMR, Inc., d.b.a. Milford Well Service  
Milford, Iowa

*List includes new Contractor Certifications Issued by the Minnesota Department of Health Well Management Section since publication of the *Fall 2015/Winter 2016 Minnesota Well Management News*, and is current as of July 5, 2016.