**DEPARTMENT OF HEALTH SERVICES (DHS)**

**FY2020 Highlights**

- DHS toxicologists and public health educators started reviewing technical information of 40 substances on request from the DNR as part of the 11th cycle of recommended NR 140 groundwater quality standards. DHS also supported DNR’s rulemaking efforts for the 10th cycle of groundwater standards.

- Multiple DHS programs including the Groundwater Program and the Site Evaluation Program provided technical assistance and health education related to several groundwater contamination sites in Wisconsin, including one in which per- and polyfluoroalkyl substances (PFAS) were the major contaminants in Marinette County. DHS toxicologists and health educators assessed the human health risk of PFAS exposure through multiple exposure pathways including groundwater, surface water, and biota such as fish consumption. The team has been providing technical assistance by reviewing private well water testing results and recommending proper actions to reduce or halt exposure to PFAS.

- The Wisconsin Environmental Public Health Tracking (Tracking) Program awards mini-grants to local public and tribal health agencies (LPTHAs) to increase environmental public health improvement initiatives throughout Wisconsin. In 2019-2020, three local public health agencies are wrapping up projects that address well water quality. In addition to providing funding, Tracking staff connected each mini-grantee with subject matter experts and provided technical assistance related to epidemiology, communications, and evaluation as requested.

- The Climate and Health Program is currently working on three flood-related tools – Flood Resilience Scorecard, Wisconsin Flood Toolkit updates, and Wisconsin Flood Risk Mapping Application updates – to help LPTHAs, local and tribal government, and emergency managers better understand flood-related health impacts in Wisconsin. These planning and response tools can help identify flood-prone areas of the state and help focus on the populations who are most at risk to drinking water contamination resulting from flooded wells.
Overview

DHS serves as a primary resource for information about the health risks posed by drinking water contaminants and is charged with investigating suspected cases of waterborne illness. Toxicologists, public health educators, epidemiologists, and environmental health specialists employed in the DHS Division of Public Health work together to:

- Develop recommendations for groundwater standards for the protection of public health upon request by the DNR.
- Present water quality information and human health implications of groundwater and drinking water issues to the public through town meetings and conferences, as well as a wide variety of informational materials.
- Provide direct assistance to families via home visits, letters to well owners, and telephone consultations.
- Educate residents with contaminated water supplies on the health effects of specific contaminants and recommend strategies for reducing exposure until a safe water supply can be established.
- Provide advice and assistance in cases of vapor intrusion when shallow groundwater is contaminated with volatile organic chemicals, such as benzene and vinyl chloride, which are released as vapors from groundwater directly into buildings through foundations.
- Improve understanding of current and potential groundwater and drinking water issues related to human health in Wisconsin through exposure biomonitoring, disease surveillance, health assessment, and capacity and vulnerability assessment. Information from these activities assists project development, focuses area prioritization, and supports academic research. This information also aids local and state agency work on groundwater-related public health issues.

Detail

Reviewing Scientific Information to Develop Public Health Recommendations for Groundwater Contaminants

Wisconsin Stat. ch. 160 directs DHS to recommend health-based standards for substances found in groundwater and specifies the protocol for developing these recommendations. Recommended standards are sent to the DNR and are submitted through the rule-making process as amendments to Wis. Admin. Code ch. NR 140.

In FY2018, DNR requested that DHS review the health information for 27 substances as part of the 10th cycle of NR 140 groundwater quality standards. DHS provided recommendations to the DNR in June 2019. In FY2020, DHS supported DNR’s rulemaking efforts for these standards including presenting at several public meetings. For more information on DHS’ cycle recommendations, please visit the DHS website.

In FY2019, DNR requested that DHS review the health information for an additional 40 substances as part of the 11th cycle of standards (see table below for a list of substances). In FY2020, DHS worked on developing these recommendations. DHS estimates the recommendations for cycle 11 will be finished in Fall 2020.
Cycle 11 Substances

- Metalaxyl
- Chlorantraniliprole
- Flumetsulam
- Fomesafen
- Hexazinone
- Saflufenacil
- Perfluorotridecanoic acid
- Perfluorotetradecanoic acid
- Perfluorobutanoic acid
- Perfluorodecane sulfonic acid
- 4:2 Fluorotelomer sulfonic acid
- 8:2 Fluorotelomer sulfonic acid
- Perfluorooctane sulfonamide
- Perfluorodecanoic acid
- GenX
- 6:2 Fluorotelomer sulfonic acid
- 8:2 Fluorotelomer sulfonic acid
- Perfluorododecanesulfonic acid
- Perfluorotetradecanoic acid
- Perfluorodecanoic acid
- Dodecafluoro-3H-4,8-dioxanonanoate
- 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate
- Perfluorodecane sulfonic acid
- Perfluorooctane sulfonamide
- N-Methyl perfluoroctane sulfonamido acetic acid
- N-Methyl perfluoroctane sulfonamidoethanol
- N-Ethyl perfluoroctane sulfonamidoacetic acid
- N-Ethyl perfluoroctane sulfonamidoethanol
- Perfluorocaprylic acid
- Perfluorononanoic acid
- Perfluoropentanoic acid
- Perfluorododecanesulfonic acid
- Perfluorododecanoic acid
- Perfluorobutane sulfonic acid
- Perfluorohexane sulfonic acid
- Perfluorohexadecanoic acid
- GenX

Working with Partners to Address Drinking Water Concerns

DHS’ Groundwater Program works with other DHS programs (e.g., On-Call Chemical and Natural Disasters Emergency Response Team; Site Evaluation Program) to support citizens, LPTHAs, and other partners responding to a broad range of groundwater contamination issues (e.g., manure spills, nitrate, PFAS).

We work directly with members of the public to address issues affecting their drinking water. In FY2020, the Groundwater Program provided advisory letters to residents with concerns about their water quality. We also work closely with partners to respond to issues that affect groundwater and drinking water. This often involves facilitating communication between LPTHAs and state partners (for example, DNR and DATCP).

Occasionally, DHS provides well water testing capacity through the Basic Agreement with the Wisconsin State Laboratory of Hygiene for LPTHAs conducting public health investigations in affected communities. For example, in FY2020, the Groundwater Program worked with the Dunn County Health Department and DNR to investigate uranium levels in wells in Ridgeland, Wisconsin. In December 2019, DNR learned that a public water system in the area had high levels of uranium in their water. Uranium is a naturally radioactive element that can be found in groundwater from certain types of rocks underground. At high levels, uranium may cause kidney problems. DNR hypothesized that this uranium was caused by fissures in bedrock. Due to limited knowledge of depth of other wells in the community, DHS provided fee-exempt testing at a number of private residences in this area. DHS also assisted the local health
department in developing a press release and participated in a public meeting to inform residents about the testing program.

DHS’ Groundwater Program consistently works to increase public awareness of groundwater and drinking water health issues. In FY2020, DHS created an infographic detailing the health effects of nitrate in drinking water and an infographic describing steps that homeowners can take to reduce their risk to lead from drinking water. Additionally, we updated several drinking-water-related websites to improve clarity and access to resources and presented at public meetings and scientific conferences on the health effects of nitrate, PFAS, and lead.

DHS continues to build relationships with state, local, and community partners. For instance, in FY2020, the Groundwater Program worked closely with Wisconsin Land+Water to design and lead a roundtable on nitrate health effects at a County Conservation meeting. We also surveyed attendees about their knowledge on nitrate and shared this information with Wisconsin Land+Water. Our goal is to use this information to develop future trainings and target appropriate audiences.

Participating in Water Quality Task Force Hearings
As a part of our work addressing water quality issues in Wisconsin, the Speaker’s Task Force on Water Quality was created in 2019 to gather information and make policy recommendations to better assess and improve the quality of both surface water and ground water in Wisconsin. This task force held a series of hearings in both Madison and across the state. DHS presented a list of recommendations for legislative action that focused on enhancing community and statewide capacity to protect and promote public health by addressing water quality issues. DHS recommended:

- Enhancing our collective ability to develop timely and relevant guidelines, standards, and policies that inform public health advice and assure water quality-related policies protect public health.
- Building public awareness and knowledge of water quality issues to empower individuals and communities to make informed decisions.
- Promoting better understanding of the occurrence of water-quality-related human health hazards.
- Taking action to address water quality issues for which there are known solutions.

These recommendations reflect the need for multidisciplinary approaches to make meaningful progress toward improving water quality. For more information on DHS recommendations please visit the Speaker’s Task Force on Water Quality website.

Environmental Cleanups
DHS receives hundreds of inquiries each year regarding various environmental health concerns. Many of these inquiries are specifically related to groundwater and drinking water concerns. The spectrum of inquiries varies from issues in individual households to large community-level concern related to chemical discharge or historical contamination. For contaminated areas, the Site Evaluation Program at DHS assists with the site investigation process by reviewing environmental data and determines the health risk to residents and visitors by conducting risk assessments. For sites where groundwater contamination is a concern, the Site Evaluation Program works closely with the Groundwater Program to ensure that proper recommendations are provided to the community to reduce their exposure to harmful substances, and to support LPTHAs with outreach. One example of this effort is the ongoing
investigation at Starkweather Creek, Truax Field, 4000 International Lane, Madison, WI (BRRTS Activity No. 02-13-584369), where PFAS were detected in surface waters and a nearby municipal well.

**Taking Action with Data: Use of the Environmental Public Health Data to Improve Environmental Health in a Community**

DHS continually seeks to provide data and resources to local public and tribal health agencies (LPTHAs) to assist them in making positive public health improvements in their communities. The Wisconsin Tracking Program continued its successful mini-grant program and issued a request for applications for LPTHAs in 2019 for the fifth round of funding. Funds are used by grantees to explore data from the County Environmental Health Profiles and the Tracking data portal to identify an environmental health concern in their jurisdiction. LPTHAs developed and implemented environmental health initiatives within their communities, based on these data. Out of the seven LPTHAs funded in the current round (2019-2020), three addressed private well water quality. In the previous round of funding (2018-2019), three of eight LPTHAs addressed private well water quality.

The Wisconsin Tracking Program and other DHS staff provide ongoing support, technical assistance, and guidance to LPTHAs on epidemiology, communications, and evaluation throughout the project period. LPTHAs are empowered to carry out their projects with support and assistance from the Tracking Program as needed. Some examples of technical assistance the Tracking Program provided LPTHAs include sharing examples of work completed by grantees working on water topics during past grant years; reviewing and providing feedback on surveys and data visualization; and assisting in writing up success stories.

While the current mini-grantees are still wrapping up their projects from this year, an example of a previous project that a local public health agency carried out in this area involved specifically addressing nitrate contamination in private wells. Results from this project were shared at the 2019 Wisconsin Public Health Association Conference.

**Clark County: Increasing Well Water Testing and Identifying Contamination Sources**

Clark County noticed that nitrate contamination in private well water had increased over time. In 2010, about 6% of wells had unsafe nitrate levels, which increased to 20% by 2017. Clark County staff worked with partners to aggregate well testing data from four sources into one cohesive database. Using geospatial analysis on the database, higher risk areas were identified on the database and the county targeted outreach and education in these areas. Furthermore, staff encouraged well testing through five community events. Over 120 well water tests were collected and over a quarter of them were either unsafe to drink because of nitrate contamination (≥ 10

5
Wisconsin Groundwater Coordinating Council Report to the Legislature

mg/L) or were at-risk of becoming unsafe in near future (between 8.0-9.9 mg/L). Health department staff worked with partners to correct issues associated with possible contamination sources and referrals were made to eliminate other groundwater hazards. Seven homeowners installed reverse osmosis systems to correct nitrate issues and two other homeowners were connected with grant resources to eliminate public health hazards on their properties.

Climate and Extreme Weather Vulnerability Assessment

The DHS Climate and Health Program (CHP), funded by the Centers for Disease Control and Prevention, works to enhance statewide capacity to prepare for and respond to the public health impacts of climate change, including impacts to private wells from heavy rainfall and flood events.

Gaps identified previously by the Wisconsin Climate and Health Profile Report have led to the development of several flood-related projects, with the goal of enhancing understanding of flood risk in specific watersheds and populations vulnerable to flooding events. Flooding events can have negative effects on groundwater quality and public health, such as well contamination and impacts to aquifers from chemical releases and flood runoff that contains nutrients and other chemical pollutants from both urban and agricultural sources. These projects involve partnerships within DHS and with the University of Wisconsin Center for Climatic Research, Wisconsin Sea Grant, the Association of State Flood Plain Managers, Wisconsin Emergency Management (WEM), and a number of LPHAs and tribal health centers. The findings from these flood-related projects have helped inform LPTHAs and local emergency management planning processes.

CHP is currently working on two flood-related tools to help LPTHAs, local emergency management, tribal emergency management, and municipal government officials and planners better understand flood vulnerability in Wisconsin:

- A Flood Resilience Scorecard is in the final stages of development and field testing before dissemination later this year. The tool has been created to aid communities in flood vulnerability assessment. The scorecard identifies institutional, social, environmental, and infrastructure vulnerabilities that could hinder a municipality’s ability to prepare for and respond to flood events. The scorecard will provide recommendations for improvements that will reduce the negative health impacts from flooding events.
- The Wisconsin Flood Toolkit is currently being revised to include specific considerations for priority populations, those who are particularly susceptible or vulnerable to flooding events. This update will help municipalities better tailor their response and messaging to those most in need during a flooding event. This tool will eventually be translated into Spanish.

A third flood-related tool was launched in March 2019 and is undergoing continuous updates. The Wisconsin Flood Risk Mapping Application (WFRMA) provides an online customizable graphic interface for assessing a community’s risk and vulnerability during a flood event in real time. This tool helps local emergency management, local emergency preparedness, tribal health centers, and LPHAs plan and prepare for flooding events. It will also inform future outreach efforts targeted at private well owners in vulnerable areas.

Environmental Radiation Monitoring

Wisconsin Stat. ch. 254 directs the DHS Environmental Monitoring (EM) Program to collect various types of samples for environmental radiation monitoring, including surface and well water from selected
locations at planned sampling intervals near nuclear power plants. The EM Program provides an ongoing baseline of radioactivity measurements to assess any Wisconsin health concerns from the operation of nuclear power generating facilities in or near Wisconsin, or other radiological incidents that may occur within Wisconsin or worldwide. These monitoring programs show the following:

- Environmental radioactivity levels have been trending downward in the time period since the 1950s-1960s’ atmospheric nuclear testing and such radiological incidents as the Chernobyl nuclear reactor incident of 1986.
- During FY2018 additional environmental monitoring occurred around the decommissioning of La Crosse Boiling Water Reactor due to tritium concentrations detected in site groundwater. No elevated levels were detected in off-site samples taken by the DHS EM program.

DHS’s ongoing EM Program will provide assurances to the citizens of Wisconsin that the environment surrounding nuclear power facilities and other monitoring areas will continue to be evaluated.

For more information
Visit the [DHS Water Quality](#) webpage.
Contact:
Jonathan Meiman, 608-266-1253
Sarah Yang, 608-266-9337
Department of Health Services
Bureau of Environmental and Occupational Health
1 W. Wilson St., Rm. 150
Madison, Wisconsin 53701