

# Water WoRDs

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## Michigan's Water Use Program

While many are preparing for next week's Thanksgiving holiday, the Water Resources Division (WRD) would like to give thanks for the water resources that we Michiganders enjoy. Many of our prior posts have focused on the WRD's role with regard to water quality in our state, yet in recent years water quantity issues have drawn increasing attention. Though not without controversy, the WRD takes pride in the role that it plays in assuring that this resource- that many mistakenly view as limitless- is carefully managed for the use and enjoyment of generations to come.

The WRD's Water Use Program regulates large quantity surface water or groundwater withdrawals by way of an assessment and registration process for all new or increased withdrawals, and an annual reporting program for existing withdrawals. The program fulfills Michigan's commitment under the Great Lakes-St. Lawrence River Basin Water Resources Compact signed in 2008. Preservation of the Great Lakes and all water resources within the Great Lakes basin is the core purpose of the program.

Part 327, Great Lakes Preservation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Part 327), requires any owner of property or a facility with the capacity to make a large quantity withdrawal to register the facility with the DEQ and report water use on an annual basis. So what constitutes a large quantity withdrawal (LQW) in Michigan? "LQW means one or more cumulative total withdrawals of over 100,000 gallons of water per day average in any consecutive 30-day period for a common distribution system." Put another way, pumps rated at 70 gallons per minute or more have the capacity to make a large quantity withdrawal and are, therefore, required to be registered.

## Water Withdrawal Assessment Tool

One of the primary functions of the Water Use Program is to assess new and increased LQW proposals based upon their predicted impact to surface water resources. Part 327 prohibits a new or increased LQW from causing an "adverse resource impact" or impairing a lake or stream beyond the limit where it can support its characteristic and thriving fish populations. The Water Withdrawal Assessment Tool (WWAT) (<http://www.miwwat.org>) is an internet-based screening tool designed to estimate the likely impact of a proposed water withdrawal on nearby streams and rivers. The WWAT, and an accounting database of the cumulative impact of all new withdrawals on the statewide water resources, is maintained by the Water Use Program. As of July 9, 2009, every new or increased LQW must be evaluated and registered using the WWAT to determine if the withdrawal is likely to cause an adverse resource impact before the withdrawal can begin.



Proposed LQWs are authorized if the predicted reduction in streamflow in nearby surface water resources does not exceed specific statutory thresholds. The WWAT calculates depletions to nearby streams and rivers as a result of a proposed withdrawal, and predicts the likelihood of an adverse resource impact. It provides the user with a result indicating the relative risk of impact, given as "Zones" A, B, C, or D; with Zone A being the

least likely to cause an adverse resource impact, and Zone D being likely to cause an impact. Authorization can be gained through the WWAT by the user for a withdrawal that is predicted to be a Zone A or in some cases a Zone B as long as the user completes the online registration process.

Withdrawals predicted by the WWAT to have an increased likelihood of adverse impact are subject to a Site-Specific Review performed by Water Use Program staff. This review is required when the WWAT assesses a withdrawal as Zone C, D, or B in a cold transitional watershed. A request for a review is made by completing and submitting a request form via the WWAT and there is a 10 working-day deadline for WRD authorization and/or response to the request. Site-Specific Reviews involve an examination of data available for the local setting, including hydrogeological and hydrologic characteristics that may provide a more refined estimation of the withdrawal's impact. During a review, Water Use Program Staff also examine the affected watershed(s) for previously registered LQWs to confirm that registrations are representative of actual construction and usage. If a proposed withdrawal is still deemed likely to cause an adverse resource impact after the review is complete, a Zone D determination is issued by the WRD and the proposed withdrawal is not authorized to proceed.

Most withdrawal requests are authorized by the WWAT or the Site-Specific Review process; however, authorization for a LQW may also take place through the Water Withdrawal Permit process. A Part 327 Water Withdrawal Permit is reserved for LQWs with over 2 million gallons per day capacity, or as a final appeal for withdrawals that have not been authorized through the WWAT and Site-Specific Review.

### Water Use Reporting

The Water Use Program also operates an annual water use reporting program that is required of all LQW facilities in the state. Forms are mailed to each facility requiring basic information including: location, source, pumping capacity and volume and consumptive use rates on a monthly basis. Water Use Reporting Forms are to be submitted to the DEQ by April 1 of each year. In recent years an online reporting system has been made available to these facilities and can be found at <https://www.egle.state.mi.us/wur/>.



Facilities that use water for an agricultural purpose report this same information to the Michigan Department of Agriculture and Rural Development, and community water supplies report similarly to the Department of Environmental Quality's Community Water Supply Program. Coordination between programs for sharing of this data is critical to the management of the program. Water use data is assembled by its category of use, source, watershed, and consumptive use rate. The data is used for the following purposes to meet Great Lakes Compact obligations:

Michigan's data is consolidated with other states and provinces under the Compact and housed at the Great Lakes Commission in Ann Arbor; the Great Lakes Water Use Database Repository provides a centralized source of information on withdrawals, diversions, and consumptive uses of water in the Great Lakes Basin. Data informs Great Lakes Basin resource management initiatives, including the Water Resources Management Decision Support System for the Great Lakes, and supporting Great Lakes Compact directives for Michigan's water management program, and water conservation and efficiency programs. Integration with the water withdrawal assessment process to provide a feedback loop of the actual reported withdrawal associated with registered withdrawal capacity.

Additional information on the DEQ's Water Use Program can be found at [www.michigan.gov/wateruse](http://www.michigan.gov/wateruse).

## What do you do in the WRD? Meet the Water Use Program Staff

### *Andy LeBaron*

Andy has worked for the DEQ since 2000. He earned his B.S. in Geography at Michigan State University, and began his career doing GIS work in the DEQ's drinking water programs. Since 2005, he has helped administer the Water Use Program which involves large quantity water withdrawal reporting and regulation, Great Lakes Compact compliance, and water rights issues.



### *Penny Holt*

Penny is a geographer with a B.S. from MSU. She hired into the DNR in 1984 working in the High Risk Erosion Area Program, eventually adding the Critical Dune Area Program to her responsibilities. After more than a quarter century working along the Great Lakes coastlines she felt the urge for a change and in 2011, transferred into the Water Use Program. She has the lead in developing the program's compliance and enforcement strategy.

### *Jill Van Dyke*

Jill Van Dyke has a M.S. in Geology-Hydrogeology from Western Michigan University, an M.S. in Geophysics from the University of Minnesota, and a B.A. in geophysics from Hope College. For the past two years, Jill has worked in the WRD's Water Use Program where she is responsible for conducting site-specific reviews for large quantity water withdrawal requests under Part 327, functioning as lead for DEQ aquifer dispute resolutions under Part 317; providing hydrogeological/groundwater modeling support for aquifer disputes under Part 317 received by MDARD, and creating 3D and 2D groundwater drawdown and flow models for complex site-specific reviews.

### *Leah Clark*

Leah began with the DEQ in April 2013 and is the newest addition to the Water Use Program. Leah earned a B.S. in Environmental Studies and an M.S. in Geology from Michigan State University. Leah primarily conducts Site-Specific Reviews of proposed LQWs and collects Stream flow measurements in support of the WWAT and SSR review process.

