

What is dewatering? How does the Michigan Department of Environmental Quality (DEQ) regulate dewatering activities, and what practices can be employed to help protect neighboring wells and surface water quality during this activity?

Dewatering is the temporary removal of ground or surface water from a construction site to allow construction to be done under dry conditions. Dewatering of cofferdams and trenches is a common practice during the construction of bridges, culverts, and public utilities. While water is usually removed using well points, drilled wells, and power driven pumps, dewatering can also occur from shallow sumps (less than eight feet below the excavation elevation) that are installed for the purpose of removing underground water that collects in the sump. These structures (such as electric manholes and basements during construction) are often equipped with a low-lift pump to remove the water that would otherwise interfere with the construction work.

Dewatering activities are regulated by various laws and regulations.

COUNTY ORDINANCES:

County ordinances may require that a permit be obtained for the installation of dewatering wells. The contact in this regard is the county or district health department.

PUBLIC HEALTH CODE:

Part 127, Water Supply and Sewer Systems, of the Public Health Code, Public Act 368 of 1978, as amended requires that dewatering contractors be registered by the State of Michigan; these contractors must submit well construction records. More information about contractor registration can be found in [Chapter 3.4](#) of the [DEQ Permit and Licensing Guidebook](#), from www.michigan.gov/deq, select "Permits" from the menu bar and then within the page, select "DEQ Permit and Licensing Guidebook." In addition, [contractor registration](#) information can be found from www.michigan.gov/deqwater, select "Drinking Water" then "Water Well Construction."

WELL CONSTRUCTION CODE:

The Well Construction Code (Rules 325.1601 et seq. of the Michigan Administrative Code), regulates the construction, operation, and abandonment of dewatering wells. These rules include provisions such as actions necessary to prevent surface water from entering the well and screening requirements. The Well Construction Code exempts regulation of the shallow sumps so long as they are constructed within the limits of the excavation. In addition, wells with an inside casing diameter of 2 inches or less and where the total depth of the casing and well point is not more than 25 feet are exempt from the Well Construction Code.

The relevant portion of the [Well Construction Code](#) can be found online at www.michigan.gov/deqwater, select "Drinking Water," then "Water Well Construction," and finally "Part 4 - Dewatering Wells Administrative Rules."

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT:

If the groundwater is contaminated and is to be discharged on the site, then a wastewater discharge permit will likely be necessary from the Water Bureau of the DEQ (Section 324.3112, Part 31, Water Resources Protection of the Natural Resources and Environmental Protection Act [NREPA], PA 451 of 1994, as amended). In the alternative, arrangements can be made to dispose of contaminated groundwater by pumping and hauling it to a wastewater treatment

plant or by making arrangements with a licensed liquid industrial or hazardous waste hauler (depending upon the characteristics of the pollutants). More information about these disposal options can be found in [Chapter 3 \(Wastewater\)](#) of the [Michigan Manufacturers' Guide to Environmental, Health, and Safety Regulations](#).

Special requirements may also be identified within permits issued by DEQ. For example, dewatering activities that take place under the control of an Inland Lake and Stream Permit from the Land and Water Management Division (Part 301, Inland Lakes and Streams of the NREPA) often require controls to prevent the release of sediment into surface waters. In addition, dewatering activities must be addressed in the soil erosion and sedimentation control plans submitted to obtain permits under Part 91, Soil Erosion and Sedimentation Control, of the NREPA. More information about applicability of related DEQ permits can be found in the [Permit Information Checklist](#) and corresponding [DEQ Permit and Licensing Guidebook](#).

BEST MANAGEMENT PRACTICES:

The implementation of Best Management Practices (BMPs) is beneficial. BMPs help prevent effects on others such as impacts to neighboring wells and pollution of surface waters. BMPs also help dewatering contractors stay in compliance with relevant laws and rules.

Groundwater Quantity:

The temporary withdrawal of groundwater by a dewatering well can affect the operation of nearby water wells. The DEQ does not have authority to investigate these instances because Part 317, Aquifer Protection and Dispute Resolution, of NREPA exempts well failures caused by dewatering wells from the groundwater dispute resolution provisions. However, Rule 325.1755 of the Well Construction Code requires the minimization of impacts to others through the following actions:

- The pumping water level in a dewatering well shall be maintained at the minimum possible depth below the ground surface that will dewater the excavation.
- Duration of operation shall also be regulated by the contractor to minimize time of pumping to the period actually needed to dewater the excavation effectively.
- The contractor, consulting engineer, and the owner of the construction project for which the dewatering wells are being drilled shall give due consideration as to what effect lowering the groundwater table will exert on existing wells.

Surface Water Quality:

Several legal mandates provide surface water protection from dewatering activities. Rule 325.1755 of the Well Construction Code requires that water pumped from a dewatering well be conveyed to a natural watercourse in a manner that does not cause damage to abutting property, create a hazard, or cause silting in the receiving stream. Further, discharges of wastewater that can harm uses made of surface waters, such as turbid discharges, are also prohibited under our spill laws contained in Part 31, Water Resources Protection of NREPA (Section 324.3109).

The [Dewatering](#) chapter of the [Guidebook of BMPs for Michigan Watersheds*](#) specifies the following:

- Minimize dewatering discharge velocity to avoid scouring the receiving area. Design structural controls—such as basins or sumps—that receive discharge water to handle the anticipated discharge flow.
- Before releasing dewatering discharge to rivers, lakes, or wetlands, filter the discharge through bags made of geotextile fabric. For additional treatment, direct the discharge across onsite vegetated buffer/filter strips. Refer to the [Filters and Buffer/Filter Strips](#) *Guidebook** chapters.



- Obtain permission from the appropriate drain commission or drain board prior to releasing dewatering discharge to county or intercounty drains.
- Inspect the dewatering site regularly to ensure that the discharge is adequately controlled.
- Check geotextile filter fabric bags for clogging, replace if necessary, and properly dispose of full filter bags, preferably at an appropriate upland location.
- Make sure any vegetated buffer/filter strips are preventing sediment from leaving the site. Maintain sediment basins using guidelines from the [Sediment Basin Guidebook](#)* chapter.

*The [Guidebook](#) is available on the Web. Go to www.michigan.gov/deqwater, select "Surface Water" on the left-hand side, then "Nonpoint Source Pollution" in the middle right, and finally select "Technical Manuals" under the heading "Technical Assistance" in the middle left. This last Web page individually lists the *Guidebook* chapters.

For general questions or DEQ contact information, you may contact the Environmental Assistance Center at 800-662-9278.