



Water Resources Division Dewatering

Description

Dewatering is the removal of ground or surface water from a construction site to allow construction to be done "in the dry" (as opposed to under wet conditions). Water is usually removed using well points and power-driven pumps. Dewatering of cofferdams and trenches is a common practice during the construction of bridges, culverts, or public utilities (see the [Watercourse Crossings](#) best management practice [BMP]). The water removed from dewatering is often sediment-laden, and can contain other pollutants, all of which needs to be properly treated prior to discharge.

Pollutants Controlled

Proper techniques of treating dewatering flows remove sediment, nutrients, oil, and other chemicals.

Location

Apply on any appropriate transportation, utility, urban, or other construction sites, or anywhere else dewatering is needed. Dewatering is often necessary in areas with high groundwater tables, or inadequate drainage. Dewatering at a site continues for as long as it is necessary for the groundwater table to be lowered, for construction sites to remain dry, or until all utility ditches or cofferdams are no longer needed. Place dewatering structures or components such as bags in upland areas. Include all drainage and dewatering structures and locations on any soil erosion and sedimentation control plans developed for a project.

Companion & Alternate Practices

Dewatering is often implemented in conjunction with [Watercourse Crossings](#). Consider using [Sediment Basins](#), [Silt Fence](#), or [Storm Sewer Inlet Protection](#), to filter dewatering flow before it's discharged to any receiving water. [Polyacrylamide](#) can be used in conjunction with dewatering, for flocculating suspended solids, facilitating its removal from pumped water.

Design

1. Assure that dewatering discharge doesn't cause scouring of the receiving area. Base the design of any structural BMPs (i.e., basins or sumps) that are to receive dewatering discharge on the anticipated flow rate from the dewatered area.
2. Prior to discharging to any surface water, pump sediment-laden water from cofferdams, trenches, or any areas being dewatered through a geotextile material filter bag. Refer to the [Silt Fence](#) and [Storm Sewer Inlet Protection](#) BMPs. Dispose of the filter bag at an upland site.

3. Obtain permission from either the drain commissioner or drain board prior to discharging treated dewatering flows to any county or inter-county drains.
4. Refer to the guidance document [Dewatering FAQ](#) (MDEQ, 2007) for additional information regarding the subject, as it relates to county ordinances; the public health code; the well construction code; the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended; and other considerations.
5. The quality of the discharge from dewatering operations determines whether or not a National Pollutant Elimination Discharge Elimination System (NPDES) permit is required. In general, the discharge of clean water will not require an NPDES permit. Consult the appropriate Michigan Department of Environmental Quality (MDEQ) district office staff person with any questions regarding the need for an NPDES permit.
6. A discharge from dewatering operations to a regulated municipal separate storm sewer system (MS4) must comply with the illicit discharge definition (i.e., the discharge cannot be contaminated). Obtain approval from the MS4 owner or operator prior to discharging to their system from any dewatering operation.

Maintenance

Inspect the dewatering site several times daily to ensure that the pumping is adequately controlling the excess water and drawing from the top of the water column if possible, any filter bags are not clogged, ripped, or torn, that any vegetative filters are still retaining sediment, and that the discharge point to a wetland or water body, if applicable, is free of visible evidence of suspended sediment from the dewatering effort. If any filter bags become clogged, replace them with new ones. If sediment basins are used, follow maintenance procedures described in the [Sediment Basin](#) BMP.

Literature Cited

MDEQ. 2007. [Dewatering FAQ](#). Environmental Assistance Program.

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