

Distinction between discharges subject to regulation under state law and those subject to regulation under state and federal law

Within this fact sheet, the term “discharge” can have several meanings. The intended meaning will be denoted as follows:

- Discharge(H) – (Hydrologic definition): The flow of water, including any suspended solids, dissolved chemicals, and or biological materials from one water body or aquifer to another, or through a given cross-sectional area. This includes movement through **both surface water and ground water**.
- Discharge(NPDES) – (NPDES - CWA definition): Federal law requires a permit for any addition of a pollutant to **navigable waters** from any point source. Navigable waters means waters of the United States, including the territorial seas. State law applies the permit requirement to **surface waters** of the state under Minn. R. 7001.1030.
- Discharge(SDS) – (Minn. Stat. § 115.01 definition): The addition of any pollutant to the **waters of the state** or to any disposal system. This includes discharge to groundwater as described below.
 - "Waters of the state" means all streams, lakes, ponds, marshes, watercourses, waterways, wells, springs, reservoirs, **aquifers**, irrigation systems, drainage systems and all other bodies or accumulations of water, surface or **underground**, natural or artificial, public or private, which are contained within, flow through, or border upon the state or any portion thereof. [Disposal systems or treatment works operated under permit or certificate of compliance of the agency are not "waters of the state" for purposes of water quality standards - Minn. R. 7050.0130(2)]

This permit contains conditions and limits on the management and discharge(H) of the facility’s industrial process wastewater, stormwater, and onsite domestic wastewater effluent. The conditions and limits are derived from both state and federal authority. Those derived from state authority govern discharge(SDS) of wastewater from the tailings basin to groundwater, which is a water of the state but not a water of the United States (navigable water). Additionally, any indirect impacts to surface waters from pollutants that were transported from the tailings basin via groundwater are addressed under state statute based on the reasoning discussed below. MPCA has regulated under NPDES permits all seepage that emerges either from the side of the basin dam, or within the vicinity of the toe of the dam, that creates surface flow or ponded features that would not exist in the absence of the tailings basin. That practice will continue under this permit. The differentiation between this seepage and discharge(H & SDS) to groundwater is discussed below.

Discharge(H) from the tailings basin may occur as surface seepage points along the exterior toe of the outer basin dam. These features are similar to base of hillslope springs. Some are small and flow intermittently, while some of the larger seeps create ponded features with measureable flows of several hundred gallons per minute (gpm) into the adjacent wetlands and streams. The source of this water, particularly at the larger, persistent seeps, is primarily flow from the tailings basin traveling through or immediately under the basin dam.

Historically, MPCA has issued an NPDES permit establishing effluent limits and other conditions to regulate these near-basin seeps and intends to do so under this permit. NPDES permitting guidelines can be applied because flow from the large seeps is often observable, and with installation of a berm and outlet weir the flow can be measured, similar to flow from a ditch or channel. This allows quantification of flow volume and pollutant load, such that the reasonable potential to cause or contribute to exceedance of a water quality standard can be evaluated and, if necessary, effluent limits can be determined and applied. Although this seepage will be regulated under the NPDES portion of this permit, one requirement of this permit is to intercept/eliminate these seepage discharges(NPDES). This will reduce the loading of pollutants to surrounding surface waters, and elimination of this seepage is the fastest way to achieve compliance with NPDES requirements, rather than traditional effluent limits.

MPCA uses the term “deep seepage” to refer to wastewater that enters the underlying surficial aquifer throughout the area of the basin and does not discharge(H) to the ground surface adjacent to its source. The deep seepage travels as groundwater, which may emerge into the surrounding wetlands, lakes or stream channels as baseflow, or may remain in the subsurface within the regional groundwater flow system. The surficial aquifer beneath and surrounding the tailings basin consists of unconsolidated glacial sediments and as such, the movement of water through it is consistent with the physics of porous media flow. Within the aquifer, which at this facility extends laterally for several miles, water can move in any direction depending on the hydraulic head (water table) conditions, which vary spatially and over time. This flow system is neither confined nor discrete and is not consistent with the examples of underground conveyances explicitly mentioned in the CWA definition of a point source (i.e., is not a tunnel or discrete fissure). Flow through porous media is also subject to lateral dispersion, which is the mixing and spreading of the pollutant perpendicular to the path of fluid flow. There is a scaling factor to this phenomenon, whereby the degree of dispersion often increases at a greater rate as the flow path lengthens. Consequently, the area over which impacted groundwater may discharge(H) to surface water features can be thousands of feet in length, covering hundreds or thousands of acres, particularly when discharging(H) to wetlands. Although deep seepage may eventually commingle with surface water, the flow path that the pollutants travel from the basin to surface water is not a discernible, confined, and discrete conveyance, nor is there typically a discrete, discernible and measureable discharge(H) from groundwater to surface water from deep seepage. Precipitation that has infiltrated, along with other groundwater not directly impacted by the basin, may interact with the basin-affected water to alter its interaction with surface water. Therefore, in this permit the MPCA finds the transfer of pollutants via deep groundwater from the tailings basin to distant surface water (not adjacent to the basin) does not meet the CWA definition of a point source. Consequently, it is not a discharge(NPDES) under the CWA.

In finding that the deep seepage is not an NPDES discharge, the MPCA notes that it is consistent with Effluent Limit Guidelines and New Source Performance Standards for the mining industry published by the U.S. Environmental Protection Agency (EPA). In the preamble to these longstanding guidelines, EPA stated:

the Agency does not propose to regulate seepage from impoundments at ore mines and mills other than those extracting uranium. The extent to which such seepage adversely affects navigable waters (as opposed to groundwater) is highly problematic. Frequently, even when seepages reaches navigable waters, it does not constitute a point source discharge – a discernible, confined and discrete conveyance – and is therefore not subject to effluent limitations.

47 Fed. Reg. 25,682, 25,702 (June 14, 1982).

In addition to the ways that deep seepage does not conform to the physical description of a point source, the EPA has recently revised the definition of waters of the United States to explicitly exclude “groundwater, including groundwater drained through subsurface drainage systems.” See Clean Water Rule: Definition of “Waters of the United States,” 80 Fed. Reg. 37,054, 37,099 (June 29, 2015) (to be codified at 40 CFR § 122.2). While the definition is not currently in force, it demonstrates EPA’s intent not to regulate groundwater directly. Thus, to the extent that deep seepage is a groundwater problem, it seems appropriate to treat it as an issue best resolved under state law.

Although Federal regulations do not govern discharges(H) to groundwater or seepage from tailings basins, state law gives MPCA authority to require permits for the operation of disposal systems discharging(S & H) to waters of the state. Minn. Stat. § 115.03, subd. 1(e). A person operating a disposal system is required to have a permit under Minn. Stat. § 115.07. The Minntac tailings basin meets the definition of disposal system in Minn. Stat. § 115.01, subd. 5. Waters of the state include all accumulations of water, surface or underground (Minn. Stat. § 115.01, subd. 23). Consequently, MPCA intends to regulate basin seepage to groundwater and deep seepage expected to eventually impact surface water as discharges(SDS) to a water of the state in accordance with State Disposal System Permit guidelines.