

US Steel plant in Indiana spills contaminated wastewater into Lake Michigan

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On Tuesday, April 11, US Steel's plant in Portage, Indiana, reported a spill of wastewater into the Burns Waterway just 100 yards from Lake Michigan. The Environmental Protection Agency confirmed that the wastewater contained hexavalent chromium, a known carcinogen.

Other agencies alerted of the leak on Tuesday morning included the Indiana Department of Environmental Management (IDEM), National Park Services (NPS), the Coast Guard, and the Porter County Sheriff.

It is not clear for how long the spill occurred or how much wastewater spilled. Initial reports claim that the cause for the spill was a failed expansion in the rinse water pipe used to treat strip steel after electroplating. US Steel reported that it shut down all production processes, isolated the affected piping for repairs, and added sodium trithiocarbonate to the wastewater to convert and aid in removing the toxic compound.

Indiana American Water, which provides drinking water in northwestern Indiana, shut down its Ogden Dunes water-processing facility, which has an intake adjacent to Burns Waterway, and is using water reserves from Gary, Indiana, until further notice. NPS closed three local beaches on Tuesday and a fourth one on Wednesday citing precautions to protect residents in a three-mile perimeter from the spill.

Save the Dunes Executive Director Natalie Johnson questioned a delay in alerting the community, which came many hours after the spill occurred through the report first issued by the NPS on the beach closures. "The State of Indiana's emergency spill response actions and associated responsibilities are quite lax. While the law requires communication with the Indiana Department of Environmental Management (IDEM) within two hours of a spill's discovery, it is not clear how quickly residents and property owners downstream should be reached," Johnson noted in a statement.

Chicago Tribune reported Tuesday evening that low levels of hexavalent chromium were detected in the Burns Waterway, but none were detected in Lake Michigan. Also, initial tests at the Indiana American Water intake showed chemical levels were slightly above the detection limit, though repeat testing suggested levels had dissipated below detection limits.

The Environmental Protection Agency (EPA) stated that no further spill is occurring, though it will collect sediment samples to determine if residual chemicals have settled.

Hexavalent chromium, made infamous by the film *Erin Brockovich*, is a carcinogen used in many industrial process such as textile dyes, wood preservation and anti-corrosion products. It can also be produced in welding on stainless steel or melting chromium. The high temperatures involved in the process result in oxidation that converts the chromium to the hexavalent state.

Current EPA maximum containment level (MCL) is 100 parts per billion (ppb) in drinking water. This level was set in 1991 based on potential for adverse dermatologic effects from long-term exposure.

However, more-recent reports have consistently demonstrated that chromium was associated with various health issues. Animal studies showed that chronic oral exposure to hexavalent chromium in rats produced oral and gastro-intestinal tumors.

A recent epidemiologic study noted statistically elevated mortality due to primary liver cancer, genitourinary organs in women, and kidney and lung cancer. Additionally, elevated levels of breast, oral, stomach, and prostate cancer and leukemia were present in the affected population in Greece where chronic industrial wastewater pollutes the local rivers.

However, the EPA is still waiting on the release of a final human health assessment to begin the process of adjusting its policy on chromium levels in drinking water;

this assessment is most likely stalled due to chemical industry challenges, such as from the American Chemistry Council, which contends that studies “show no adverse health effects” at the current 100-ppb limit.

However, the influential California Office of Environmental Health Hazard Assessment concluded that hexavalent chromium is a dangerously hazardous compound. It recommended that only a health goal of 0.02 ppb or less in tap water would pose sufficient risk reduction in developing cancer over a lifetime of consumption.

The Environmental Working Group, a non-profit organization that specializes in research and advocacy in areas of toxic chemicals and human health, indicates that more than 200 million citizens in all 50 states drink water contaminated with the compound.

Chicago drinking water contains levels of hexavalent chromium at 0.23 ppb, which are 11 times higher than the more stringently recommended maximum contaminant level. The current controversial regulatory limit of 10 ppb was based on “other” considerations including the added cost of water treatment.

There are more than 12 million people living along the shores of Lake Michigan predominately in the Chicago and Milwaukee metropolitan areas. The economies of many of the communities on the shore are supported by tourism and recreational activities, while the lake serves as the primary source of drinking water for most residents.

The southern tip of the lake near Gary where the latest spill occurred is extensively industrialized and contaminated, and industrial mishaps have been quite common.

Currently, three industrial plants dominate the region—ArcelorMittal, US Steel Gary Works-Midwest plant and the Northern Indiana Public Services Baily coal-fired power plant. US Steel’s Gary Works is considered the largest polluter on the Great Lakes. According to federal records, the Portage plant is one of six facilities on the Southern shore of Lake Michigan that legally released a combined 1,696 pounds of the metal during 2015.

The Political Economy Research Institute ranked US Steel as the eighth worst corporate producer of air pollution in the US with a long history of environmental contamination. The company released more than 2 million pounds of toxins in 2008, chiefly ammonia, hydrochloric acid, ethylene, zinc, methanol, and benzene, but including manganese, cyanide and chromium compounds.

In 1993, the EPA issued an order to US Steel to clean

up a site in Fairless Hills, Pennsylvania, on the Delaware River where the soil was contaminated with arsenic, lead and other heavy metals. The ground water at the site was found to be polluted with carcinogenic polycyclic aromatic hydrocarbons.

US Steel’s facility in Gary has been repeatedly charged with dumping polluted wastewater into Lake Michigan and the Grand Calumet River. In 1998, it agreed to a \$30 million settlement to clean up contaminated sediments from a five-mile stretch of the river.

In 2005, the EPA and US Department of Justice reached a settlement requiring US Steel to pay almost \$400,000 in fines and reparations for illegally releasing pollutants into Ohio waterways. And in November 2016, US Steel agreed to pay a \$2.2 million fine and clean up pollution in Indiana, Michigan and Illinois.

However, with revenue in 2015 of \$11.574 billion, such fines are a mere slap on the wrist for US Steel and are considered by corporations as part of the cost of doing business.

Despite persistent concerns over pollutants in drinking water and the need for diligent oversight, the Trump administration is proposing to eliminate the EPA office working on hexavalent chromium standards in drinking water and drastically reduce funding for scientific studies of toxic chemicals and the enforcement of environmental laws.

Furthermore, Trump’s budget proposes to cut \$300 million per year from the Great Lakes Restoration Initiative, which is used in part to address current and past damages caused by US Steel and other industrial polluters in northwest Indiana.



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