Chlor-Alkali Facility (Former)
Berlin
Contact: Brian Thornton (603) 271-6805

The Chlor-Alkali Facility (Site) was historically located on a parcel approximately 4.6 acres in size on the east bank of the Androscoggin River just downstream of the Sawmill Dam in Berlin, New Hampshire.

From 1898 to the 1960s, chlorine, caustic soda and hydrogen were produced using electrolytic cells in “cell houses” on the property. Historical documents suggest that diaphragm cells produced chlorine for use in the manufacture of paper at the adjacent pulp mill. Most of the on-site structures were razed and buried on site in the 1950s and 1960s. The property is currently vacant and owned by the bankrupt Pulp and Paper of America, LLC.

Since 1997, various investigations have determined that there is soil contaminated with mercury at concentrations above NHDES’ soil standards. Site groundwater also exceeds the Ambient Groundwater Quality Standards for mercury, lead, arsenic, carbon tetrachloride, chloroform, and dichloromethane (methylene chloride). Elemental mercury has been observed in the bedrock fissures along the Androscoggin River located directly adjacent to the Site.

In 1999, Crown Vantage Paper Company, in preparation for sale of said property to Pulp and Paper of America, conducted closure activities intended to isolate contamination at the Site from the surrounding environment. The only remaining cell house building was demolished and disposed on-site, a slurry wall was constructed on two sides of the property to inhibit the migration of groundwater through the waste material, and an impermeable cap was constructed over the surface of most of the property to prevent rainwater from percolating into the area containing demolition debris and other contaminated media. However, groundwater from the capped area continues to flow from a drainage pipe that penetrates a former foundation wall into the river, indicating that groundwater and/or surface water infiltration continues to enter the capped area.

In the early 2000s, in an attempt to address the possibility that mercury seeps through bedrock fractures into the Androscoggin River, grout was injected into some of the fractures and visible mercury was regularly collected from the river and its bank. Despite these response activities, mercury continues to be found in the Androscoggin Ri20ver adjacent to the Site. Between 1999 and 2006, the NHDES removed approximately 140 pounds of mercury and mercury-containing debris and sediments from the river and its banks.

The city of Berlin established a Reuse Planning Committee in December 2007, as a result of a redevelopment grant awarded by EPA, to evaluate the reasonably anticipated future use(s) for the Site that is intended to enhance the evaluation of remedial alternatives for the Site. The

committee findings were summarized in a December 2008 final report suggesting that the anticipated future use at the Site would be light commercial combined with recreation/heritage corridor functions.

There is currently a fish consumption advisory for the Androscoggin River from Berlin downstream to the Maine border due to elevated concentrations of dioxins (see NHDES fact sheet on "New Hampshire Fish Consumption Guidelines[1]"). All populations are advised against consuming any fish from this portion of the river. People who disregard the advisory and eat fish caught in this segment of the river could be exposed to contaminant levels that exceed safe eating guidelines.

The Site was listed on the National Priorities List (Superfund) in September 2005, making cleanup activities eligible for federal funding. The first stage of the Superfund process, the remedial investigation (RI), began in September 2006 with limited resources and went full-scale in summer 2009, concluding in 2012. The RI Report was finalized in March 2014. A public meeting was held in Berlin in May 2014 to present the findings of the RI.

Concurrent to finalizing the RI, EPA initiated negotiations with a potentially responsible party (PRP). An Administrative Settlement Agreement and Order on Consent was entered between EPA and the PRP in April 2015 (Agreement). The Agreement, and associated statement of work, provides the basis for the PRP to conduct a supplemental remedial investigation (SRI) and prepare a feasibility study (FS) for the Site.

The Agreement specifies that the PRP shall collect additional samples and submit an SRI report that further characterizes the nature and extent of waste materials as well as refines the understanding of contaminant migration in groundwater and potential risk to human health and the environment. If, following an evaluation of the SRI, EPA believes that data gaps exist, EPA may direct additional data collection and analyses be conducted to address those deficiencies.

The PRP developed and implemented a number of SRI work plan elements between 2015 and 2017 including: (1) Test Pit 6 Study; (2) Androscoggin River Mercury Investigation; (3) Foundation/Retaining Wall Stability and Suitability Assessment; (4) Well Assessment; (5) Soil and Debris Investigations; (6) Contaminant Migration Characterization; (7) Groundwater Characterization; and (8) completion of multiple river studies. With all of the aforementioned elements incorporated, the PRP submitted a final SRI in December 2017, and final Feasibility Study in April 2020.

Utilizing information gathered in the RI/FS and SRI, EPA released the Chlor-Alkali Facility June 2020 Proposed Plan for the Site; documents are available on the EPA Superfund website.

[1] https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/2020-01/ard-ehp-25.pdf

The primary remedial components proposed include:

- Maintenance and monitoring of an existing construction debris landfill that contains hazardous materials.
- Removal of contaminated soils that pose an unacceptable risk to human health and either on-site disposal at the existing landfill or off-site disposal at a licensed facility.
- Removal of mercury and mercury-contaminated materials (including amalgams and debris) as it appears in the Androscoggin River.
- In-situ treatment of contaminated groundwater in bedrock beneath the Site to restore that groundwater to a beneficial use as a source of drinking water.
- Restrictions on residential and other unrestricted use activities on the Site.
- Monitoring of groundwater and conducting Five-Year Reviews.

Following a 30-day public comment period, subsequent public hearing, and preparation of a responsiveness summary addressing comments received, EPA formalized the aforementioned remedial components in a September 2020 Record of Decision[2] (ROD). The overall cost for the selected remedy is estimated to be $5 million.

A Consent Decree (CD)[3] was finalized in September 2022 that will govern the implementation of the selected remedy. The CD is binding upon the United States, State, and Settling Defendants and their successors and is a necessary agreement that will ensure the selected remedy is implemented in a timely manner with key provisions to guide associated legal matters.

Remedial design of the selected remedy began in early 2023 and is scheduled for completion in 2024. Remedial action is anticipated to begin in 2025.

---

[2] https://semspub.epa.gov/work/01/649279.pdf

[3] https://semspub.epa.gov/work/01/100022716.pdf