Maryland Department of the Environment

Former Alcoa Eastalco Works

What You Need to Know

Site Location

The former Alcoa Eastalco Works ("the Facility") is located at 5601 Manor Woods Road in Frederick, Frederick County, Maryland and occupies approximately 200 acres of a 2,200-acre parcel. It is surrounded by farmland and some residential and commercial areas are located nearby. Two small streams flow southward through the Facility.

Site History

Alcoa manufactured aluminum at the Facility from 1969 until December 2005. The Facility closed in March 2010 and demolition of the facility was completed in early 2017. Aluminum was produced in electrolytic cells (known as "pots"), comprised of a carbon anode and a carbon cathode. Spent carbon liner material from the pots was stored in an on-site storage area and waste materials generated by the smelting process (e.g., refractory bricks, broken anodes and cathodes, cryolite, and carbon pitch) were disposed of in an on-site industrial landfill. Therminol, a heat transfer medium containing polychlorinated biphenyls (PCBs), was used at the facility between 1970 and 1976. From 1970 until 1980 Tetrachloroethene (PCE) was used in a substation area to clean dirt-contaminated silicone grease from high voltage insulators prior to reapplication of fresh grease. Drums of PCE were stored on the south side of the substation control building. The use of PCE at the site was gradually phased out and eventually discontinued in 1987.

Environmental Investigation

In 1983-84, PCE, cyanide and fluoride contamination were detected in the groundwater at the Facility. Additional investigation activities conducted between 1983 and 1989 identified soil and shallow groundwater located near the sub-station area as the source of the PCE. The source of the cyanide and fluoride in the shallow groundwater was attributed to a spent potliner waste storage area near the plant. Alcoa conducted multiple drinking water quality assessments of the nearest private wells (located in Manor Village, approximately 1.25 miles downgradient of the Facility) but no PCE, fluoride or cyanide was detected. Between 1988 and 1991, Alcoa identified and eliminated potential groundwater contamination sources by disposing of 36,000 tons of spent potliner carbon at an approved out-of-state landfill, storing spent potliner carbon in a building until its off-site removal, capping old on-site disposal sites, and installing a leachate collection system for an on-site industrial landfill. The PCE source areas were addressed through excavation and removal of soil from the sub-station area.

In 1992 MDE and Eastalco entered into a Consent Order (CO-92-149) which included, among others, installation of a vacuum extraction system for additional PCE remediation in groundwater near the substation and implementation of a groundwater and surface water monitoring program. In 1997, the consent order was amended to include the installation of a groundwater pump and treat system near the source of the fluoride plume. Following additional assessment, remediation, and monitoring of the groundwater, soil and surface water in and around the Site, a new consent order (CO-07-026) was signed in 2007, which eliminated

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PCE as a concern and required Alcoa to continue semi-annual groundwater and surface water monitoring for fluoride and cyanide.

Between 2003 and 2005, five (5) additional historical Waste Disposal Sites (WDS-5 through -9) and buried debris were discovered in a 53-acre grassy field located south and west of the plant operation area. Following detection of elevated levels of PCBs (>50 mg/Kg) and poly-aromatic hydrocarbons (PAHs) in the soil, MDE requested Alcoa to conduct additional site characterization and determine the vertical and horizontal extent of contamination. Four other Waste Disposal Sites (WDS-1 through 4) on the site were eliminated from further consideration due to records showing the closure of these WDS in the 1980s with MDE approval.

Between 2012 thru 2014, Alcoa completed additional site characterization activities and designated approximately a 200 acre area where additional environmental requirement had to be completed to manage residual PAH, PCB and inorganic contamination in soil, surface water and groundwater. A Site Management Plan (SMP) was proposed to manage residual contamination on Site and was approved in 2017. The SMP as well as other Site specific restrictions were implemented through the recording of an Environmental Covenant (EC) in the Frederick County Land records on December 29, 2017. The EC requires current and future owners of the Site to adhere to the Site wide land and groundwater use restrictions, continue maintenance and monitoring of remediation measures including engineering controls already implemented on Site, continue long term groundwater and surface water monitoring and implement the approved SMP during any activity in the soil management area. With the implementation of the EC, the ACO (ACO-07-026) was deactivated.

Current Status

On May 15, 2018, MDE issued a No Further Action determination for the Site.