

Anodyne, Inc.
1270 Northwest 165th Street
North Miami Beach, Florida
County: Miami – Dade
District: Southeast
Site Lead: EPA

Placed on National Priorities List: February 21, 1990
ERIC ID # 3847

Site Description and History

The Anodyne, Inc. facility is located on 4.25 acres in an industrial park near North Miami Beach, Florida in Township 52S, Range 41E, Section 14 at 25° 55' 26.0433" N, 80° 13' 15.1474" W. Anodyne, Inc. operated from the early 1960's until 1978 as a manufacturer of lithographs and silkscreen prints. Production activities conducted within the plant included aluminum anodizing, embossing, lithographic development and printing, silk screening, die and diamond cutting and laminating.

Information regarding disposal of process wastes is limited. In 1970, EPA and the Dade County Department of Resources Management (DERM) inspected the facility and discovered a pretreatment system for pH control and adjustment of the process effluent prior to discharge to the local wastewater treatment plant. A DERM inspection in 1973 documented several disposal violations, in which raw process chemicals and/or process wastes were either accidentally and/or intentionally discharged onto the ground via discharge pipes extending through the building walls. In addition, process wastes were disposed of in a 90-foot deep injection well located on the south side of the building.

The soils along the south and west sides of the building were contaminated, and groundwater contamination at the site was separated into two different zones. The soils and associated groundwater contamination in the upper aquifer were identified as Zone 1, and the groundwater contamination in the lower aquifer was identified as Zone 2. The 90-foot injection well was suspected as being the source of the Zone 2 groundwater contamination.

Threat

Disposal practices resulted in elevated levels of several heavy metals and volatile organic compounds (VOC's) in soils and shallow groundwater on site (Zone 1). As related below, all cleanup activities for Zone 1 were completed by 2004. In addition, a contaminated solvent plume is migrating from the injection well location (Zone 2). This site poses a threat to the Biscayne aquifer, a major source of drinking water.

Response Strategy and Status (December 2020)

The Anodyne site was placed on the National Priority List (NPL) in 1990. The Remedial Investigation/Feasibility Study (RI/FS) was subsequently conducted during a two-year period and the EPA approved the final RI Report in July 1992. The Final FS Report was submitted in December 1992, and was approved after an extensive public comment period.

The Record of Decision (ROD) was signed in July 1993, and received State concurrence in September 1994. The ROD stated that: approximately 5,000 cubic yards of contaminated soil in Zone 1 would be excavated and properly disposed of; the contaminated groundwater associated with Zone 1 would be monitored and allowed to naturally attenuate; the groundwater contamination in Zone 2 would be recovered and treated by air stripping and returned to the Biscayne aquifer.

In June 1999, the EPA reported an Explanation of Significant Differences (ESD), which included the rationale for changing the excavation performance standard for nickel based on the sensitivity of analytical laboratory equipment.

The Final Field Investigation Report for Zone 1 was completed in June 2000 and, based on its findings an Amended Remedial Work Plan was submitted to the EPA in August 2000. The work plan discussed the excavation and off-site disposal of metals-contaminated soil and also discussed a groundwater monitoring plan.

A Consent Decree between the EPA and the potentially responsible party (PRP) was signed on July 12, 2000, which obligated the PRP to fund remedial actions addressing Zone 1 contaminated soils and shallow groundwater.

Zone 1 soil excavation was completed in May 2003, in accordance with the 1993 ROD and the April 2001 Remedial Action Workplan. Removal operations were scheduled to begin in March 2002, but excavation was delayed pending permitting issues with DERM. DERM would not allow metals-contaminated soils to be disposed in a cement kiln as recommended in the ROD. The EPA completed an Explanation of Significant Differences (ESD) to allow the soil to be disposed at a landfill facility. Soil removal operations commenced in April 2003 followed by shallow groundwater monitoring as specified in the ROD. In November 2004, the PRP submitted the Construction Completion Report. All remedial activities for Zone 1 are considered complete.

The Army Corps of Engineers (USACE) under contract with the EPA further investigated the Zone 2 groundwater plume. The installation of four new monitoring wells was completed in summer 2004. This investigation showed that the contaminated groundwater plume was more extensive in size than had been previously indicated. The size of the plume is presumed to be caused by migration of contaminants due to the influence of nearby public well fields, although other possible contributing sources in the area cannot be ruled out. In September 2005, at the request of DERM and DEP, the EPA and USACE installed additional wells to the north and south of the Anodyne site to monitor public well fields in these areas. The results of the sampling in September showed that groundwater contaminant concentrations had decreased significantly across most of the plume. Resampling was completed in May 2006, to verify these results. This resampling effort showed contaminant concentrations had increased closer to the 2004 levels. USACE concluded that the lower 2005 results were most likely an anomaly caused by heavy rains from recent hurricanes and field techniques used during sampling. Both DEP and the EPA concurred with this conclusion. The DEP received the final version of the groundwater sampling report and recommended that sampling occur at least annually or semi-annually at the site.

A bioremediation pilot study for Zone 2 was scheduled to begin in July 2008, but was delayed when DERM and DEP requested changes/clarifications to the work plan. The pilot study commenced in early 2009. Terranear PMC, under direction of the EPA, conducted two rounds of bioremediation injections in the source area. Results showed a general decrease in contaminant levels. The third and final round of injections was completed in October 2009. The Final Pilot Study Report was submitted to the reviewing agencies in June 2010.

The reviewing agencies discussed the Final Pilot Study in August 2010. Though several details needed to be clarified during the design phase, all agencies concurred that bioremediation is a viable remedial alternative for Zone 2 and is preferable to pump and treat as stated in the original 1993 ROD.

In May 2012, the DEP reviewed the draft Focused Feasibility Study and concurred with the EPA's recommendations for targeted in situ bioremediation and groundwater monitoring. The Focused Feasibility Study was finalized in September 2014. DEP and DERM reviewed a Draft Proposed Plan and provided comments to the EPA by early July 2015.

A public meeting regarding the proposed plan was held in Miami in January 2016. In April 2016, DEP provided comments to the EPA after reviewing the Draft Amended Record of Decision (AROD). The EPA finalized the AROD on July 26, 2016.

The 30% Design report was submitted in December 2016. The US Army Corps of Engineers installed several more monitor wells in early 2017 to establish an adequate monitoring network.

The Superfund State Contract (SSC) was executed in May 2018. EPA and the Army Corps completed the 100% design for bioremediation and groundwater monitoring in June 2018.

In October 2020, the Army Corps conducted a site inspection and a limited groundwater sampling event. They recommended that the EPA confirm and document well names via well ID plates.

Schedule

The EPA is working to secure access agreements with multiple property owners to install more monitoring wells. The bioremediation/groundwater monitoring remedy will proceed when funding becomes available.