

Airco Plating Company
3650 Northwest 46th Street
Miami, Florida
County: Miami – Dade
District: Southeast
Site Lead: EPA

Placed on National Priorities List: February 21, 1990
ERIC ID # 3851

Site Description and History

The Airco site occupies approximately two acres in a predominantly industrial/commercial area and is surrounded by other active businesses in Township 53S, Range 41E, Section 21 at 25° 48' 56.0692" N, 80° 15' 19.9045" W. A mobile home park is located about 300 feet south of the site. The Miami Canal is located approximately $\frac{2}{3}$ mile southwest of the site and is the only major surface water body in the vicinity of the site. The site is underlain by the Biscayne Aquifer, which is approximately 100 feet thick in the area. The Biscayne Aquifer supplies all municipal water supply systems from south Palm Beach County southward.

The site is an operational electroplating facility owned and operated by Airco Plating Company, Inc. The company's main activity is plating steel, copper, and brass items with zinc. The facility also plates various items with brass, cadmium, chromium, copper, nickel, and tin. Cyanide, caustic compounds, and acids are also used in the plating process. Tetrachloroethene (PCE), a common industrial solvent, has been used to clean parts prior to plating.

Threat

Various metals, cyanide, PCE, and trichloroethene (TCE) have been detected in soils at depths of up to 16 feet below land surface. The metals found at highest concentrations were cadmium, chromium, copper, lead, nickel, and zinc. The highest concentrations were generally associated with areas formerly used as seepage ponds for process wastewaters. Soils pose a threat as a contaminant source to drinking water, and soil contaminant concentrations exceed acceptable concentrations protective for industrial use. Groundwater exceeds state drinking water criteria for cadmium and volatile organic compounds (VOCs), primarily PCE, with a contaminant plume extending at least 120 feet downgradient of the Airco property boundary.

Response Strategy and Status (December 2020)

Airco Plating began operation at the site in the mid-1950s. Until about 1973, electroplating wastes were discharged to three seepage ponds including one pond located on leased property immediately south of the site. An EPA inspection in 1971 noted the use of the seepage ponds and reported that some wastewater was being discharged to the ponds without treatment. Between June 1972 and January 1973, Airco was notified of discharges exceeding Dade County standards. In February 1973, Airco was ordered to pump out the ponds and make changes in the treatment system in order to comply with regulations. Airco ceased discharging to the ponds and began discharging to the Miami municipal sewer after June 1973. In 1981, the treatment facility was upgraded to separate sludge from the treated effluent before discharge. The sludge was collected

onsite and periodically shipped offsite for disposal. The EPA conducted site investigations in 1985 through 1987.

In February 1990, the site was listed on the National Priorities List (NPL). In November 1990, Airco signed an Administrative Order by Consent to perform the Remedial Investigation and Feasibility Study (RI/FS). The RI report was completed in February 1993 along with a Baseline Risk Assessment prepared by the EPA. The RI documented the presence of metals, cyanide and PCE in soils in the former pond areas and adjacent to the main building. Cadmium and PCE exceeding Florida drinking water standards were found in groundwater samples on and downgradient of the site. The FS report was completed in May 1993.

In October 1993, the EPA signed a Record of Decision (ROD) for site remediation. The remedial action included soil vapor extraction of volatile soil contaminants, capping of areas with high cadmium levels in soils, extraction, and treatment of groundwater exceeding standards for volatile organics and metals, and use of institutional controls, including deed restrictions, to preserve the integrity of the cap and prohibit activities incompatible with the cap. In September 1994, DEP indicated non-concurrence with the remedy based on the inadequacy of capping to address the metals contamination in soil. DEP recommended that all soils above the water table exceeding the metals cleanup goals be excavated and disposed of at an appropriate offsite facility, or treated and disposed of onsite using solidification/stabilization.

In December 1995, the Remedial Design and construction of the EPA groundwater remedy was completed. A soil vapor extraction system was installed to address volatile organic constituents in the soils. In December 1996, Airco submitted a proposal to DEP including excavation of the soils in the three former seepage pond areas to depths ranging from 2.5 to 4 feet with offsite disposal. The DEP determined in March 1997 that while the areas chosen for excavation were acceptable, the proposed depths were not adequate to address cadmium occurring at concentrations representing a potential threat to public health and a contaminant source to groundwater. A revised proposal for soil removal was received by DEP in July 1997. Clarification of the proposal was requested by DEP in September 1997, primarily with regard to the historical location of the pond areas. In January 1998, Airco notified DEP of its intention to expand an existing waste treatment building in an area which appeared to overlap part of the historical seepage pond areas. The site was inspected by DEP's Southeast District in April 1998. The DEP concluded that the proposed building renovation and expansion was necessary for personnel safety and waste management at the site. The Department requested that Airco provide the previously requested information and a clear proposal for soil remediation in the remaining former pond areas by May 1998. In May 1998, Airco indicated to DEP that further revision of previously proposed soil removal plans would not be undertaken.

Following a meeting with DEP in September 1998, Airco proposed removal of contaminated soil from a limited area in the vicinity of former pond No. 2. The DEP did not object to the proposed soil removal, but indicated concern that the action would not be adequate to remove the entire contaminant source and protect groundwater. The EPA subsequently instructed the responsible parties to resume the schedule for design and construction of the Resource Conservation and Recovery Act (RCRA) cap, as specified in the ROD.

Final design and construction of the RCRA soil cap was completed in late summer 1999. The SVE system was shut down in July 1999 after several sampling events had shown no volatile contaminants in the influent. The first five year review was completed in September 2001, and the second five year review was completed in September 2006. No deficiencies were noted except the lack of Institutional Controls for the site that would restrict use and require maintenance of the cap. Based on groundwater sampling completed in January 2007, the groundwater pump-and-treat system continues to operate effectively. Groundwater contaminants have declined in concentration; however, cadmium, PCE, TCE, and vinyl chloride continue to exceed cleanup criteria in groundwater. Groundwater monitoring continues on an annual basis. The 2010 results indicate that the groundwater system continues to treat the contamination but, there are still concentrations that exceed cleanup criteria.

A Restrictive Covenant agreement was reached with the responsible parties in December 2012. This agreement includes: maintaining the soil cap that is in place; an access agreement for inspections of the cap and remedial system; and land use restrictions for the property. The DEP has received a certified, recorded copy of the Restrictive Covenant for the DEP's Institutional Controls Registry files.

Biostimulation injection activities were conducted in September 2014, using emulsified oil substrate (EOS) and ammonia phosphate to enhance the bioremediation of chlorinated solvents in the saturated zone. Subsequent groundwater monitoring events have indicated that the biostimulation injections were effective. A Five-Year Review was completed by the EPA and DEP in 2016. A soil vapor intrusion study in the plant was performed in 2018. The DEP is supportive of the recommendation by EPA for a capture zone evaluation to determine the effectiveness of the pump and treat system in capturing the plume.

Biostimulation injection activities were conducted again in November 2020. Remedial system operations are ongoing with quarterly site visits and monitoring. The property to the south of the Airco Plating site was recently sold and the new owner is amenable to signing a restrictive covenant (RC). A draft RC was sent to DEP's District and Business Support Program (DBSP) for review in December 2020.

Schedule

Annual operation and maintenance (O&M) of the remedial system continues. The 2020 Annual Operating Report is expected in the Spring of 2021. Quarterly groundwater monitoring for cadmium, nickel, Underground Injection Control (UIC) and geochemical parameters, and VOCs will continue.