

Sapp Battery Salvage
County Road 280, 2 miles north of Alford
Marianna, Florida
County: Jackson
District: Northwest
Site Lead: EPA
Placed on National Priorities List: October 23, 1981
HWC # 029
ERIC ID # 3802

Site Description and History

The Sapp Battery Salvage site is located in a rural area approximately five miles south of Cottondale and two miles north of Alford in Township 04N, Range 12W, Section 24 at 30° 43' 41.3419" N, 85° 23' 33.5088" W. The site consists of an approximately 45-acre area bounded on the west and north by adjacent rural landowners' property, on the south by County Road 280 and on the east by the Bay Line (formerly Atlanta and St. Andrews Bay) railroad track.

The Sapp Battery Salvage site housed a facility to recover lead from used automotive batteries from around 1970 to 1980. During the period of operation, battery casings and battery acid with dissolved heavy metals were improperly disposed of onsite. Drainage from the site flowed into an onsite cypress swamp which drains into the Steel City Bay Marsh and eventually into Little Dry Creek about one mile away.

Threat

Past field and laboratory testing has shown contamination of soils, surface water, sediments, and groundwater by lead, cadmium and other heavy metals. Onsite contaminated soils have been remediated under the federal Superfund cleanup. However, elevated levels of metals still remain in adjacent wetland sediments and pose a threat to that ecosystem. The residents in the vicinity of the site obtain their drinking water from private wells. Many of these drinking water wells are in the direction of groundwater flow and are thus threatened by contamination.

Response Strategy and Status (December 2016)

In 1977, the Florida Department of Environmental Regulation (FDER, now DEP) became involved when cypress trees in the Steel City Bay Marsh and beyond began to show the ill effects of the battery acid discharge. The Sapp Company took some steps to alleviate the offsite discharge, which proved to be unsuccessful. Following a series of legal actions initiated by the FDER, Sapp abruptly ceased operations in January 1980. The FDER took the case before the Circuit Court in Jackson County, Florida, and in July 1981 the FDER obtained a judgment in excess of \$11,000,000. However, to date, the DEP has only been able to collect approximately \$11,000 of this award from Mr. Sapp.

The EPA conducted limited emergency remedial actions during 1980 to control runoff and leaching from the site. An existing berm was built up and extended further to the east, and an additional berm was built north of the site to control surface water runoff. Hydrated lime was

disked into areas of exposed soils. A lime slurry was sprayed onto onsite holding ponds and swamps to neutralize the acid water.

In September 1982, the FDER and the EPA signed a Cooperative Agreement allocating Superfund monies for the study of contamination caused by the Sapp Battery site. This study included a remedial investigation and a feasibility study (RI/FS). The RI was completed by FDER in January 1984. The investigation focused on all aspects of contamination, including location of buried battery casings, assessment of shallow soil contamination, and a study of the surface water and groundwater on and around the site. It was estimated that approximately 23,000 cubic yards of battery casings are buried under the site, with an additional 3,500 cubic yards piled on the surface. The shallow soil sampling indicated that upper levels of soil contain high concentrations of lead. The surface water sampling showed high levels of lead, manganese, and aluminum in the onsite swamps.

Samples from Little Dry Creek contained normal levels of metals for the area, indicating there had been a significant improvement in the water quality of the Steel City Bay drainage basin and in Little Dry Creek, since the state and federal government agencies became involved. The groundwater beneath the site was contaminated with lead, aluminum and other metals.

The results of the RI indicated that interim remedial measures (IRMs) were necessary to provide site security and to reduce the potential for offsite migration of contaminants. The FDER implemented an IRM between May 1984 and June 1985 that consisted of installing a fence, constructing a berm and weir system, closing the unlined acid pond, removing highly contaminated soils, and installing a synthetic liner over contaminated soils remaining onsite.

FDER received the FS report in August 1986. A public meeting to receive comments on the RI/FS reports was also held in August. EPA signed the Record of Decision (ROD) with FDER concurrence in September 1986. The selected remedial alternative is onsite treatment of surface and ground water, and chemical fixation (solidification/stabilization) of soils and sediments.

A two-phase plan was developed for implementing the selected remedial action; Phase I addressing soils and sediments and Phase II addressing groundwater. Treatability studies were begun in March 1989 and completed in February 1990. In August 1989, EPA assigned completion of the soil fixation design to one of their ARCs Contractors. The Soils Remedial Design was completed in December 1991.

EPA issued special notice letters and began negotiations with potentially responsible parties (PRPs) in September 1991 to perform soil remediation. EPA and the PRPs signed a consent order in the spring of 1992 whereby the PRPs agreed to complete a treatability study and soil cleanup. A draft source control remedial action work plan was submitted in May 1993. Site preparation for soil remediation began in August 1993. The Baseline Soil Performance Goal and Treatability Study (SPGTS) report was submitted in November 1994. The purpose of the report was to develop soil cleanup criteria that are protective of both human health and ground water.

EPA did not accept the conclusion of the SPGTS and re-evaluated the soil cleanup goals. In April 1995, EPA conducted additional field studies including the installation and sampling of temporary

monitoring wells in the shallow aquifer, as well as surficial soil sampling. The Sapp Battery Temporary Monitoring Well and Sampling Investigation Report were completed in August 1995. In March 1996, EPA issued the Draft Comprehensive Evaluation of Soil Lead Contamination and Soil Lead Leaching to Ground Water Report, which outlined the rationale for developing revised soil cleanup goals. EPA signed an Explanation of Significant Differences (ESD) in June 1996 which identified revised soil cleanup goals for lead of 500 mg/kg for soils less than six feet below land surface and 2,500 mg/kg for soils deeper than six feet below land surface. The final remedial design for soil cleanup with revised cleanup goals was submitted in September 1998. Soil cleanup by solidification/stabilization began in December 1998 and was completed in the fall of 2000. Long-term groundwater monitoring down gradient of the monolith is ongoing to confirm the effectiveness of the remedy.

The investigation and cleanup of the Steel City Bay Marsh located south of the site was addressed separately from the soils. In March 2000, the PRPs completed an Ecological Risk Assessment that recommended revised sediment cleanup criteria for the wetlands in the Steel City Bay Marsh. EPA and the State have concluded that the original ROD cleanup criteria for lead in wetland sediments remain justified. Sediments were sampled in Steel City Bay Marsh and in other wetlands adjacent to the site in June and December 2003 in order to determine the extent of wetland contamination. In April 2005, EPA and DEP approved the final remedial design for sediment removal and offsite disposal. The implementation of the sediment removal was delayed due to lack of funding. In September 2007, EPA secured funding for the sediment removal and a State Superfund Contract was issued for the sediment remedial action. Sediment removal was initiated in February 2008 and completed in September 2008.

Groundwater monitoring was completed in January and April, 2005. Lead levels exceeded State Drinking Water Standards in scattered wells with levels of up to 100 µg/L observed in unfiltered samples. New monitor wells were installed in July 2006 with additional groundwater samples collected via direct push technology. The groundwater data collected in 2006 indicated overall groundwater contaminant concentrations have declined. In April 2007, EPA and DEP met to discuss remedial strategies for groundwater at this site. It was agreed that additional groundwater monitoring wells are necessary to delineate the groundwater contamination and support evaluation of future remedial actions. Additional groundwater monitoring wells were installed in 2008.

A Remedial Design Investigation report was submitted in October 2008 and included a comprehensive review of historical and present groundwater contaminant trends to assist in determining the appropriate remedial action for Operable Unit 2 (groundwater). A preliminary evaluation of possible technologies was also presented including pump and treat as well as in situ treatment including a permeable reactive barrier wall which would treat groundwater as it naturally flows through the wall. Based on this report, it was also determined that additional monitoring wells are necessary to delineate the extent of contamination.

The EPA installed several more monitoring wells including monitoring wells across Corbin Road, and completed an additional lithology investigation in September 2009. Based on the results from this investigation EPA concluded that a permeable reactive barrier is not a feasible alternative.

During October 2009 EPA installed monitoring wells and piezometers to determine the flow of the surficial aquifer. During this investigation it was determined that the surficial aquifer pinched out on the west site of the property. The EPA also determined that remaining metals at the site might be adsorbed to the soils in such a way that leaching of metals to groundwater would not occur.

Based on the above data, EPA began evaluating the use of Monitored Natural Attenuation (MNA) to address groundwater contamination at the site. The evaluation included chemical studies of site soil. The EPA evaluated contamination that is attached to the clays and not dissolved into the groundwater and how that can affect apparent groundwater contaminant concentrations. A comparison of more recent sampling results from monitoring wells, where low flow sampling techniques were used, to older sample data confirmed that historic sampling techniques had resulted in erroneously high contaminant concentrations due to adsorbed metals contamination on the fine particles suspended in groundwater samples. Monitoring wells with well construction problems had also resulted in non-representative turbid groundwater samples with higher metals concentrations than were actually in groundwater. More recent monitoring results confirmed that MNA had been effectively occurring at the site.

In September 2011, EPA executed a ROD amendment that addressed groundwater cleanup target levels (CTLs) and changed the groundwater remedy to MNA. The CTLs were updated to reflect the following cleanup criteria: aluminum – 15,600 µg/L, iron – 11,000 µg/L, lead – 15 µg/L, manganese – 400 µg/L and vanadium – 49 µg/L. The DEP and EPA differ on the cleanup levels for aluminum, iron and manganese. The DEP health based cleanup levels for these metals are 7,000 µg/L, 4,200 µg/L and 330 µg/L, respectively. The DEP does agree with the use of MNA at this site.

The EPA submitted a revised MNA Plan in October 2012. DEP has reviewed and commented on this plan. EPA will use their Athens technical branch to complete MNA sampling using low-flow; low-purge techniques to reduce the turbidity of the groundwater samples and ensure representative samples.

Schedule

The EPA and DEP have determined that MNA of site groundwater contamination is a viable remedy. Annual groundwater monitoring is ongoing at this site to confirm the progress of groundwater remediation. The property is being sold to a new owner, who understands the need for restrictive covenants on the site because of the engineering controls. His plan to graze cattle on the site is under review by the EPA and DEP risk assessors. The next Five-Year Review is in progress and the final report is due before the end of the Federal FY17.