

American Creosote Works – Pensacola Pit
701 South J Street
Pensacola, Florida
County: Escambia
District: Northwest
Site Lead: EPA
Placed on National Priorities List: December 20, 1982
ERIC ID # 3775

Site Description and History

The American Creosote Works – Pensacola Pit is an abandoned 18-acre site located in a moderately dense commercial/residential area of Pensacola in Township 02S, Range 30W, Section 42 at 30° 24' 15.1357" N, 87° 14' 17.7483" W. The site is slightly more than one mile southwest of the intersection of Garden and Palafox Streets, a landmark of downtown Pensacola. Pensacola Bay and Bayou Chico are approximately 600 yards south of the site.

American Creosote Works, Inc. (ACW) operated a wood preserving plant from 1902 until December 1981. Before 1950, creosote was the preservative used in the treatment process. Pentachlorophenol was also used after 1950. Beginning in the 1940's, wastewater generated at the plant was discharged into two onsite, unlined surface impoundments. Prior to about 1970, wastewater in the ponds was allowed to overflow through a spillway and follow a drainage course into Pensacola Bay. In subsequent years, the wastewater was drawn off the ponds, whenever pond levels were high, and discharged on the plant property. During periods of heavy rainfall and flooding, the wastewater occasionally overflowed the containment dikes onto both onsite and offsite areas.

Threat

Past field and laboratory testing have shown contamination of soils, surface water, sediments, and groundwater. Contaminants include a wide range of phenolic compounds and polynuclear aromatic hydrocarbons (PAHs) including pentachlorophenol, phenol, fluoranthene and naphthalene as well as dioxins. Contaminated soils are a potential health threat to the local residents through direct contact. Contaminated groundwater is a potential health threat to local residents using private irrigation wells. Pensacola Bay is threatened by potential discharge of contaminated groundwater.

Response Strategy and Status (December 2020)

Due to the improper disposal activities at the site, the Florida Department of Environmental Regulation (FDER, now DEP) enacted enforcement proceedings against ACW. The FDER issued a Notice of Violation in January 1981 and entered into a Consent Order with ACW in March 1981. ACW was unable to meet the requirements of the Consent Order and filed for re-organizational bankruptcy under the provisions of Chapter 11 of the Federal Bankruptcy Code.

An "immediate removal action" was completed by the FDER and the EPA during September and October of 1983. The two onsite impoundments were drained, and the hazardous liquids treated

by a portable treatment facility. The remaining sludge was stabilized with fly ash and covered with a temporary clay cap. EPA re-sodded and re-seeded the temporary clay cap in 1985. In December 1985, a fence and warning signs were installed by the FDER to restrict access to the site. Periodic fence repairs have been necessary due to vandalism.

The EPA initiated a Remedial Investigation/Feasibility Study (RI/FS) in 1984. The RI report was completed in January 1985 and indicated that contaminated soils and groundwater existed on- and offsite. A draft FS was completed followed by a public meeting in August 1985. The EPA recommended an onsite RCRA landfill to address contaminated soils, sediments, and sludge. The EPA also recommended deferring the decision on ground water cleanup until more data were collected. FDER did not concur with the proposed soil remedy, indicating that there was insufficient data and an inadequate evaluation of alternatives to support the remedy selection. The EPA signed a Record of Decision (ROD) in September 1985.

Additional soil, surface water, and ground water samples were collected by EPA in June 1988. A Risk Assessment was completed by an outside contractor for EPA in June 1989 and included the development of soil and sediment cleanup levels. EPA initiated an in-house FS that included an evaluation of thermal treatment technologies. This study raised questions concerning the nature of groundwater contamination and the character of the stabilized sludge.

The EPA determined that the contaminated media at the site could best be addressed as two operable units (OUs): OU 1 addresses surface soils and sediments, and OU 2 addresses the stabilized/capped sludge, soils underlying the cap, and groundwater. After completion of the Amended FS, the EPA recommended bioremediation as the remedial alternative for OU 1. EPA signed a ROD for OU 1 in September 1989, with FDER concurrence.

Treatability studies, a Value Engineering Analysis by the US Army Corps of Engineers (USACE) and OU 1 design work were conducted between October 1989 and July 1991 to confirm that bioremediation would satisfy the OU 1 soil cleanup goals for dioxins and creosote contaminants. The results were inconclusive. An effective treatment train using bioremediation to remediate soils could not be developed.

Additional fieldwork was performed in 1990 and 1993 to obtain the additional data necessary to evaluate possible remedies for OU 2 and assess the risk posed by the contaminated groundwater, sludge, and underlying soils. Groundwater cleanup goals were developed to protect surface water from potential contamination by discharge of groundwater into the bay. The final baseline Risk Assessment and FS for OU 2 were submitted in November 1993.

Following a public meeting, EPA signed the Record of Decision for OU 2 (groundwater cleanup) in February 1994, with DEP concurrence in July 1994. The remedy for OU 2 includes: Phase I – recovery and offsite recycling of dense non-aqueous phase liquids (DNAPLs) followed by; Phase II – groundwater recovery and treatment using enhanced bioremediation technologies.

The Remedial Design for Phase I DNAPL recovery and recycling was completed in June 1997 and included a field assessment and delineation of the subsurface DNAPL, pilot testing to determine

of the physical characteristics and extractability of the DNAPL, and design of the extraction system. A State Superfund Contract (SSC) between EPA and DEP was signed in September 1997, which commits the State to a ten percent cost share for DNAPL recovery as part of site cleanup. Onsite construction of the DNAPL recovery system was completed in September 1998 and operation of the DNAPL recovery and recycling began. Additional onsite assessment using direct push sampling and a penetrometer system (SCAPS) was conducted in 2001 to support evaluation and enhancement of the DNAPL recovery system.

Concurrent with design and construction of the DNAPL system, the EPA continued to evaluate remedial alternatives to address onsite and offsite contaminated soils, sludges and sediments in surface drainage areas including the Pensacola Yacht Club (PYC) drainage ditch, the historical drainage course for runoff from the site. The Focused FS for the PYC ditch and offsite sampling to delineate dioxin and PAH contamination was completed in 1997.

EPA signed an Amended Record of Decision for OU 1 (soil remedy) in May 1999. The OU1 remedy calls for consolidation of contaminated sludge, soil, and sediment beneath an onsite surface cap. Soils in offsite residential areas and on the PYC property that exceed the remedial goals would be excavated and consolidated under the cap. Offsite soil cleanup goals include PAHs and dioxins. The 1 part-per-billion cleanup goal for dioxins was an interim cleanup goal until the National Dioxin Reassessment Study is completed and final cleanup criteria can be established. The publication of this report has been delayed several times. Due to these delays, the EPA has agreed to use the State's 10-6cancer risk criteria for dioxins per Chapter 62-780, Florida Administrative Code.

The USACE, under contract with the EPA, completed a cap design for the OU 1 remedy in May 2002. In August 2002, the City of Pensacola requested that the EPA delay implementation of the OU 1 remedy until the City could complete a site redevelopment study and coordinate with the EPA to develop an OU 1 remedy compatible with future land use plans. Subsequently, the EPA provided a Superfund Redevelopment Initiative (SRI) grant to the City to aid with this study. In October 2003, the City of Pensacola adopted a future use plan for the site that proposes a number of shops and other small businesses on the north edge of the site and leaves the majority of the site as a "green space" for recreational activities. Anticipated future use will be considered by EPA in the design of the final onsite remedy.

In September 2002, the EPA and DEP signed a State Superfund Contract (SSC) to perform an interim removal of contaminated offsite soils and sediments exceeding the EPA's current guidance levels. The SSC obligates the State to a ten percent cost share of the cleanup costs. Fieldwork for this interim remedy was terminated in November 2003, when the contractor encountered higher than expected contaminant levels during soil excavation east of the PYC ditch. Excavated soils have been temporarily relocated and secured on the former ACW property, pending finalization of the OU 1 soil remedy. In June 2009, EPA installed a fence around the PYC ditch where excavation is still needed, to deter trespassers from entering areas with contaminated sediments. Soil and sediment sampling in 2003 of a drainage ditch located southeast of the site also confirmed elevated levels of PAHs. The EPA completed soil excavation and restoration of the "Southeast Ditch" area between E, F, Pine and Cypress Streets in January 2010 and documented the removal action in the

August 2010 construction completion report. Excavated soils have also been temporarily placed on the former ACW property. Soil sampling along Cypress Street was also performed in July 2010 to support the City's proposal to relocate the L Street storm sewer and eliminate storm water drainage through the Pensacola Yacht Club ditch. Relocation of the storm sewer will allow EPA removal of the contaminated PYC ditch sediments to be implemented under drier conditions with a reduced risk of accidental contaminant releases due to storm water discharge.

Damage to the OU 2 DNAPL treatment system by Hurricane Ivan in 2004 necessitated system shut down for repairs. Damage included an overturned office trailer, damage to the DNAPL treatment building and system components contained in the building, and security fence damage. Repairs to the system were completed in December 2005. The system was operated intermittently until May 2007 when the system was restarted at full capacity. Installation of new monitoring wells and the collection of offsite shallow groundwater samples using a direct-push technology (SCAPS) were completed in the summer of 2007. Four quarters of groundwater monitoring of select existing onsite and offsite monitoring wells were completed in April 2008. The DNAPL recovery system was modified and five new deep recovery wells were installed in 2009, increasing the amount of DNAPL being recovered by 10 to 20 gallons per day. Operation of the DNAPL recovery system was discontinued in September 2011, after completion of 10 years of operation and maintenance. As of September 2011, an estimated 201,915 gallons of DNAPL had been removed.

In August 2009, the EPA and DEP met to discuss the ongoing remedial efforts at ACW. As a result, EPA completed a draft Data Quality Objectives (DQO) analysis in January 2010, identifying areas where additional data is needed to determine if a different approach should be considered to ensure adequate DNAPL source control and to more effectively address site cleanup. EPA conducted a groundwater monitoring event in January 2011 for a more current picture of onsite and offsite groundwater contaminant concentrations.

In April 2011, the EPA issued a draft Focused Feasibility Study which evaluated cleanup options to address the onsite contaminant sources including DNAPL as well as offsite soil contamination. DEP review of the draft Focused FS identified several issues needing resolution including final disposition of offsite contaminated soils and the proposed transfer of contaminated media from one Superfund site to another Superfund site, as well as additional data needs to demonstrate the anticipated effectiveness of the proposed cap and subsurface barrier wall alternative in containing onsite DNAPL.

In September 2011, EPA conducted additional assessment to further define the extent and vertical distribution of onsite and offsite DNAPL, and to support evaluation of a possible onsite DNAPL containment remedy. Soil samples were collected from onsite and offsite borings at depths up to 175 feet bls and additional geophysical data was collected from borings using the TarGOST technology to assist in identification of DNAPL zones and underlying clays. An annual groundwater monitoring event was also conducted in January 2012. This data will be incorporated in the upcoming feasibility study in order to select a comprehensive site cleanup approach that will address all onsite and offsite contaminated media including soils, sediments, groundwater and DNAPL.

Relocation of the storm sewer south of the former ACW property was completed in August 2012. The City coordinated this effort with EPA who assisted in management and treatment of contaminated water recovered during dewatering for construction of the sewer line connection. Offsite contaminated soils that were removed during installation of the lines were relocated and secured on the ACW site, where they will be addressed during site remediation.

EPA completed sediment sampling in the Pensacola Yacht Club ditch in November 2012 to determine current contaminant levels and support selection of a final sediment remedy. Soils on either side of the PYC Ditch exceeded soil cleanup target levels (SCTLs) for dioxin and benzo(a)pyrene based on direct contact, as well as some leachability-based criteria. Ditch sediments exceeded sediment quality guidelines, as well as leachability criteria for the protection of either groundwater or marine surface water. Creosote free product was observed in some samples collected from 1-2 feet below the ditch bottom.

A draft Feasibility Study (FS) to support selection of the comprehensive site remedy was submitted for review in December 2012. The FS included groundwater modeling and an evaluation of the “fingerprint” of offsite dioxin contaminants in soil, to support determination of the extent of offsite contamination. A revised March 2014 Feasibility Study was provided by EPA and its contractor in response to DEP review comments, along with a revised Risk Assessment. A combined containment and DNAPL source treatment remedy was recommended in the revised Feasibility Study along with removal of offsite contaminated soils. The revised Risk Assessment presented preliminary remedial goals for soils and groundwater at the site. DEP provided review comments in May 2014.

Excavation of contaminated sediments in the offsite Pensacola Yacht Club (PYC) ditch, leading to Pensacola Bay, was completed by EPA in July 2016, in accordance with the approved May 2016 removal work plan. The 2012 re-location of the City’s storm water conveyance system in this area allowed removal of contaminated sediments in the ditch, which formerly served as a storm water conveyance. The sediment removal is one of the offsite interim remedial actions specified in the May 1999 Amended Record of Decision and is authorized through the Superfund State Contract between EPA and DEP.

EPA issued a revised Final Feasibility Study in December 2016. A public meeting to present EPA’s recommended comprehensive site remedy and to receive public comments was held in April 2017.

EPA signed the Amended Record of Decision in September 2017, documenting the EPA selected remedy. The site remedy includes an onsite cap and slurry wall to contain the more highly contaminated source including principle threat waste and DNAPL on the western portion of the site; in situ thermal treatment of onsite and offsite DNAPL; in situ treatment of onsite PCP source contamination and offsite PCP in groundwater using a combination of enhanced bioremediation and chemical oxidation or other oxygen source; monitored natural attenuation to address the offsite dissolved groundwater contaminant plume; and excavation of offsite soil contamination with relocation onsite under a soil cover. Onsite cleanup goals are based on a commercial land use

scenario. Institutional controls along with engineering controls such as a soil cover will be utilized to ensure the protectiveness of the remedy and to allow for a “park” land use scenario. DEP concurred with the Amended ROD in December 2017.

Schedule

There are multiple Remedial Designs written for this site to address onsite soil, offsite soil, and groundwater contamination. FDEP has approved the remedial designs and in August 2020, additional offsite soil sampling was conducted to determine excavation depths and areas for the offsite residential properties. Recently FDEP and EPA have negotiated for another year of O&M at the source property to maintain the site. The Five-Year Review is currently being done with anticipation of the Report this Spring. Until funding is incurred for implementation of the remedial designs, annual groundwater will continue at the site.