Pickettville Road Landfill

5150 Pickettville Road
Jacksonville, Florida
County: Duval
District: Northeast
Site Lead: EPA
Placed on National Priorities List: October 23, 1981
ERIC ID # 3797

Site Description and History

The Pickettville Road Landfill is a 52-acre site located at 5150 Pickettville Road in northwest Jacksonville, Duval County, Florida in Township 01S, Range 26E, Section 31 at 30° 22′ 08.5198″ N, 81° 44′ 15.3050″ W. Little Six Mile Creek flows northeast, through the southeast portion of the site. The site consists of a former sand borrow pit which was operated as a landfill on a limited basis from the 1940s until 1967, when the City of Jacksonville began using it as a municipal dump. The city operated the landfill almost continuously for ten years until November 1977, when it was closed, backfilled and re-graded. Initially, all types of municipal wastes were disposed at the site. In 1971, sanitary wastes were diverted to other landfills and this site was dedicated for the disposal of hazardous and solid wastes, including battery casings, lead-acid battery fluids, waste oil, light terpene sludge's and polychlorinated biphenyls (PCBs). Waste oil disposal methods included dumping the material into shallow, diked trenches and compacting trash over it. The site was backfilled to grade with refuse, covered with a six-inch layer of soil and revegetated.

Threat

Volatile organic contamination has been detected on the northern side of the site. Samples of creek water have not identified significant contamination, although biotic surveys have indicated impoverished benthic populations. Specific monitor wells located on the southern part of the site have confirmed arsenic and lead above drinking water standards. No violations of drinking water standards have been identified in offsite monitoring wells.

Response Strategy and Status (December 2020)

The Florida Department of Environmental Regulation (FDER, now DEP) and the EPA initiated an EPA-lead remedial investigation/feasibility study (RI/FS) to determine the type and extent of contamination at the site, and to evaluate the most cost-effective alternative for dealing with the problem. EPA completed a Remedial Action Master Plan in February 1984, and the RI/FS work plan was completed in March 1985. Potentially Responsible Parties (PRPs) were notified and several (including the City of Jacksonville) had formed a Steering Committee. The responsible parties signed a Consent Order with EPA in January 1986. The RI/FS was begun in August 1986 and presented to EPA in January 1987. In response to comments from EPA and FDER, the PRPs conducted additional field work to fill data gaps in the RI. In December 1988, the report on the additional fieldwork was completed and submitted to the EPA. In June 1989, the PRPs began work on the Feasibility Study and Risk Assessment. The Risk Assessment and Feasibility Study submitted by the PRPs were considered inadequate. The EPA completed the Feasibility Study in-house due to the PRPs' unwillingness to address EPA and FDER comments.

In July 1990, the EPA conducted a public meeting to discuss the FS and proposed remedial action. In September 1990, the EPA issued a Record of Decision specifying a cover system as the selected alternative. As part of the remedial design, the EPA would install several deep monitoring wells through the landfill to determine if there is offsite migration of contaminants.

In April 1991, negotiations were initiated with potentially responsible parties (PRPs) for the Remedial Design/Remedial Action Consent Decree. The Consent Decree was finalized in February 1992. The final design was submitted in September 1993 and approved in March 1994. Golder Associates is the remediation consultant for the (PRPs). A Preconstruction Conference was held on February 1994, and construction was initiated in May 1994.

The EPA signed an Explanation of Significant Differences (ESD) in May 1996, which approved the substitution of a Geosynthetic Clay Liner (GCL) for the clay barrier layer. The DEP concurred with the ESD, and placement of the GCL was completed in December 1996. Final remedial construction was completed in January 1997. The Revised Operation and Maintenance (O&M) Plan was submitted in April 1997. The EPA and DEP approved the final Construction Report in June 1997. O&M activities were initiated in October 1997. O&M activities include periodic inspections, closure cover maintenance, surface water management system maintenance and monitoring, groundwater monitoring, gas control system monitoring and maintenance and other general maintenance. Site inspections are to be performed on a quarterly basis for the first two years and semi-annually thereafter.

Groundwater monitoring wells, located across Pickettville road at the Realco Landfill (District enforcement site), historically indicated high concentrations of vinyl chloride and trichloroethene (TCE). In November 1995, the PRLS used the “hydropunch” technology, along the Pickettville site right-of-way, to help determine the source of contamination. Results of this initial investigation confirmed levels of TCE above the groundwater standard at the Pickettville boundary monitoring wells. The EPA, in consultation with DEP, requested that the PRPs delineate this plume. Delineation of the plume was initiated in November 1996. Modeling results in the Contamination Assessment Report (CAR) indicated that groundwater discharging into Six Mile Creek along the northern perimeter of the Realco site could be impacted by the vinyl chloride plume within the next year.

The O&M monitoring in December of 1997 and March of 1998 indicated elevated arsenic levels in two groundwater wells located immediately adjacent to Little Six Mile Creek.

In March 1998, the PRPs conducted additional assessment on the Realco property to determine whether the solvent plume was discharging to Six Mile Creek or Little Six Mile Creek.

Results of this investigation confirmed an elongated solvent plume extending through the entire Realco site area discharging into the Little Six Mile Creek. Levels of contamination were observed in direct push samples adjacent to the Six Mile Creek. Permanent monitor wells were installed based on data evaluation near the creek area.

In order to address the elevated arsenic levels noted in two sampling events, the PRPs conducted fieldwork using direct push technology to evaluate the extent of the plume along the perimeter of the landfill adjacent to Little Six Mile Creek. Data evaluation was conducted in April 1999, and indicated one small area where arsenic levels are above MCLs.

Additional fieldwork was conducted in April 1999, to evaluate the groundwater contaminant plume near the northern section of the Pickettville site. The data in the Remedial Investigation Report showed a narrow plume of solvent contamination extending from the Pickettville Landfill onto the Realco property. EPA requested that the Focused Feasibility Study Report (FFSR) be expanded to incorporate and evaluate new innovative remedial technologies. The FFSR was submitted to the EPA and DEP in March 2000. The use of a reactive barrier wall was selected as the remedial technology for the solvent contamination migrating onto the Realco property. Two additional monitor wells were installed on the southern portion of the landfill near Little Six Mile Creek to enhance groundwater monitoring in the area of arsenic contamination.

In September 2002, the EPA requested a Focused Feasibility Study (FFS) for arsenic and 1,2-dichloroethene, which have been routinely detected above their respective MCLs. The FFS was submitted in May 2003, and recommended Monitored Natural Attenuation (MNA) for arsenic and 1, 2-dichloroethene. The DEP did not concur with this remedy selection and requested that EPA direct the PRPs to other alternatives.

A Proposed Plan was submitted in August 2004 in order to update the Proposed Remedial Action. Natural Attenuation with Monitoring has been selected in the Proposed Plan as a revised remedy for solvent contamination. This update was necessary due to declining levels of solvent contamination emanating from the Pickettville Landfill onto the Realco property. The Proposed Plan to update the Remedial Action Plan was reviewed by the DEP and comments sent to EPA in November 2004. DEP expressed concerns regarding the use of natural attenuation for the source zone area located on the Pickettville Landfill site, the lack of monitor well sampling data for determination of existing plume conditions, and the lack of remedial information regarding the ongoing arsenic plume located on the southern portion of the site.

DEP completed the review of the Draft Five Year Review Report finished by the U.S. Army Corps of Engineers, and sent comments to EPA in August 2005. A new EPA project manager was assigned to the site October 2005.

On November 30, 2005, a joint inspection was completed by DEP, EPA, and the PRP representative; Golder. There were discussions regarding the migration of the plume to the Realco property located adjacent to Pickettville Landfill. DEP has expressed concerns regarding the migration of the plume as well as the exceedances in groundwater MCLs. In the EPA Five Year Review, recommendations were made to address plume migration and conduct impact studies on Little Six Mile Creek.

The second EPA five year was signed on January 31, 2006. Recommendations included continued monitoring, further characterization of the groundwater plume, and a study of the ecological impacts to Little Six Mile Creek and further investigation of the illegal dumping at the site.

On May 2007, a teleconference was held with EPA, PRP representatives and DEP to discuss the status of Pickettville Landfill. Golder recommended MNA to address the Contaminants of Concern on site. EPA will consider Golder's proposal based on current data analyses but, may evaluate the need for additional treatment to address the arsenic and DCE issues. DEP did not concur with Golder's recommendation of MNA.

In 2008, the PRPs performed an additional investigation using the Henry Push Point Method to assess the potential for arsenic migration into the Little Six Mile Creek. The additional investigation was based on EPA's recommendations.

In September 2008, further investigation for arsenic in Little Six Mile Creek was completed by the PRPs. Results indicated arsenic was below the Cleanup Target Levels for groundwater and surface water. Based on these results, EPA approved the Preliminary Closeout Report on September 25, 2008, indicating that all construction activities for the Superfund site have been completed.

On June 17, 2010, EPA conducted the third Five-Year Review (FYR) site inspection and found the facility to be in compliance. The EPA approved the third FYR report in February 2011.

A FYR site inspection was conducted in April 2015. The fourth FYR report was approved by EPA in February 2016. The report concluded that the remedy remains protective. Institutional controls are in place to prevent use of the groundwater. Groundwater monitoring results during this five-year period are consistent with historic results. Arsenic was observed above the current drinking water standard of 10 µg/l in several shallow monitoring wells at the site and may be attributable to reducing conditions in groundwater associated with the landfill. Lead was observed in one shallow monitoring well at the site above the standard. Benzene was also observed above its drinking water standard in a shallow monitoring well but at concentrations below the alternate cleanup level protective of surface water in the Creek.

Schedule

The July 2017 monitoring event marks the end of the 20-year O&M period anticipated in the ROD. An annual monitoring report following the July 2017 monitoring event recommended monitoring once every five years one year preceding the FYR. DEP and EPA are in discussions regarding the recommendations in the annual monitoring report. The next FYR is scheduled for 2021.