

Landia Chemical Company
1405 West Olive Street
Lakeland, Florida
County: Polk
District: Southwest
Site Lead: EPA
Placed on National Priorities List: May 11, 2000
ERIC ID # 3908

Site Description and History

The Landia Chemical Company (Landia) Superfund Site is a 12-acre site located at 1405 West Olive Street in Lakeland in Township 28S, Range 23E, Section 23 at 28° 02' 24.3448" N, 81° 58' 41.5939" W. Historical operations have consisted of the manufacture, blending, and storage of a variety of pesticides including organophosphates, organochlorines, and metal-based pesticides including zinc, copper, and lead oxides. From 1940 until operations were terminated in 1987, pesticide storage, blending, and manufacturing business was operated on the approximately 5-acre Landia property. The Florida Favorite Fertilizer Company occupies the remainder of the site and continues to operate as a fertilizer storage, blending, and manufacturing business. Properties to the west of the Florida Favorite Fertilizer property have been affected by pesticide operations. Storm water from the site drains to the east of the site and is directed beneath Olive Street to the Wayman Street ditch that continues for several miles to the south and west of the site.

Threat

Soils and groundwater in the surficial aquifer have been contaminated with metals and organic pesticides, primarily toxaphene, lead, and arsenic. Other contaminants include DDD, DDT, DDE, aldrin, BHCs, chlordane, dieldrin, endosulfan, endrin, heptachlor, heptachlor epoxide, and toxaphene. Petroleum compounds, naphthalene, sulfates, and nitrates exceed drinking water standards. Soil contamination extends off-site to the west in the industrial area along West Olive Street. Pesticide and arsenic contaminated soils and sediments in the offsite Wayman Street Ditch and adjacent open field south of West Olive Street were excavated and disposed of during an emergency removal in 2001.

Based on subsequent offsite sampling south of West Olive Street, site-related contamination appears to be limited to right-of-way areas immediately south of the site and several properties in the residential community where pesticides and arsenic were detected at levels above unrestricted use criteria. Groundwater contamination appears to be limited to the surficial aquifer. Contaminants detected in offsite private irrigation wells do not exceed drinking water standards. Residents adjacent to the site obtain their drinking water from the City's municipal well system which draws water from the Floridan aquifer.

Response strategy and Status (December 2020)

The site has a long history of health-related complaints from area residents as well as DEP investigations and enforcement actions. In May 1983, area residents reported respiratory problems apparently associated with a fire at the Landia site. In September 1983, residents complained of nausea, headaches, dizziness, and eye and respiratory irritation associated with pesticide odors

from the Wayman Street Ditch. A Florida Department of Environmental Regulation (FDER, now DEP) investigation showed elevated concentrations of pesticides in surface water and sediments in the ditch. Landia removed pesticide-contaminated sediments from 1,000 feet of the ditch immediately south of West Olive Street in November 1983. Landia ceased operations in 1987.

Three underground fuel storage tanks were removed in 1989 and two aboveground tanks were removed in 1991 by Florida Favorite Fertilizer (FFF). In 1971, an area nursery owner complained of dust from the site causing respiratory irritation and killing a number of plants. An underground pipeline running along the northern border of the site ruptured in April 1992 spilling an estimated 6,200 gallons of Jet-A fuel along the border between Landia Chemical and Florida Favorite Fertilizer. The pipeline owners, Central Florida Pipeline, recovered approximately 4,500 gallons of the jet fuel and removed approximately 10 cubic yards of contaminated soil.

The EPA conducted a preliminary assessment of the site and the surrounding area in October 1999. The site was placed on the National Priority List in May 2000. A Remedial Investigation/Feasibility Study (RI/FS) was initiated by the potentially responsible parties (PRPs), following EPA approval of the October 1999 RI/FS work plan. Concurrently, the PRPs completed an immediate removal action for soils in early 2001. Areas with highest soil and sediment contamination, including a small area of the church property south of Olive Street and portions of the Wayman Street Ditch closest to Olive Street, were excavated and disposed of offsite at a permitted disposal facility. The Florida Department of Health completed a study of fish in ponds downstream of the Wayman Street Ditch in March 2000 and determined that site-related contaminants were not present in fish tissues at levels of concern for public health.

A class action suit was filed by area residents against the PRPs citing impacts to properties and public health. A final settlement of approximately \$6 million was reached in 2001.

A draft and final Remedial Investigation Report (RI) was submitted for Agency review in March 2002 and February 2003, respectively. A draft Baseline Risk Assessment (BRA) was received in August 2002. The RI Report showed concentrations of site-related contaminants in soil exceeding the EPA screening criteria and State of Florida Soil Cleanup Target Levels (SCTLs). Contaminants include arsenic and lead, chlorinated pesticides, DDT isomers, and polynuclear aromatic hydrocarbons (PAHs). These were found predominantly on the FFF and Landia properties, the adjoining industrial properties to the west of the site, and the railroad corridor immediately north of the site. Offsite sampling south of West Olive Street confirmed site-related contamination along right-of-way areas immediately south of the site and several properties in the residential community, where pesticides and arsenic were detected at levels above unrestricted use criteria. Groundwater contamination appears limited to the surficial aquifer and is characterized by a low pH with groundwater cleanup target levels exceeded for benzene, naphthalene and phenolic compounds, and chlorinated pesticides. Surficial aquifer groundwater exceeding drinking water criteria is located primarily onsite although criteria are also exceeded offsite in isolated locations.

A draft Feasibility Study (FS) was received in October 2004. The PRP's recommended remedy for soil was limited removal and offsite disposal of on- and offsite contaminated soils. The

proposed treatment for groundwater was enhanced bioremediation plus treatment of hotspots via chemical oxidation, and monitored natural attenuation to address offsite contamination. Comments were provided by DEP in February 2005, and a meeting with DEP, EPA, and consultants for the PRPs was held in Tallahassee in November 2005 to discuss the comments and provide an overview of site remedial objectives. Groundwater samples collected February and March 2006 confirm pesticide contamination to the north, south, and east of the site. A meeting with DEP, EPA, and consultants for the PRPs was held in Tallahassee in October 2006 to discuss the soil and groundwater sampling plan, and objectives of the FS. Additional soil and groundwater sampling was completed in October 2006. The revised FS was submitted to DEP in June 2007.

On July 10, 2007, EPA held a public meeting to present the proposed final remedial strategy for soils Operable Unit 1 (OU 1) and the interim remedial strategy for groundwater Operable Unit 2 (OU 2). The remedial strategy for OU 1 soil is removal and off-site disposal. The interim remedial strategy for OU 2 groundwater will be completed as a phased approach through chemical oxidation for areas of highest groundwater contamination on-site, and enhanced bioremediation for the lower concentration groundwater plume. Institutional controls in the form of restrictive covenants are to be placed on the former FFF and Landia properties by the site owners to limit future use of the properties to commercial/industrial. Restrictions on groundwater use will also be established and remain in effect until the groundwater cleanup standards have been reached.

The EPA signed the Record of Decision (ROD) for the final remedial action for OU1 soil and interim remedial action for OU2 groundwater in September 2007. DEP agreed with the selected soil remedy. However, DEP did not concur with the OU 1 ROD because the selected groundwater standard for xylenes does not meet the State of Florida requirements and does not provide the appropriate health based level of protection required by Florida rules. The EPA signed a consent decree with the PRPs in July 2009 whereby the PRPs agreed to implement the selected remedy. The areas of contamination were defined during the June 2010 soil assessment activities.

The proposed excavation plan was reviewed by the EPA and DEP. This plan incorporated excavation in conjunction with a surface seal to prevent water infiltration and address leaching. The DEP expressed concern about the use of 95% UCL to determine the amount of leachable material that will be left in place because it is inconsistent with DEP rules.

Mobilization to the site for excavation started the week of March 26, 2011 and the excavation was completed in the week of June 25, 2011. The total amount of soil removed was 27,973.04 tons. A construction completion inspection was conducted by the EPA and DEP on December 1, 2011. All monitoring wells that were abandoned for the excavation have been replaced. Replanting of the site with natural vegetation occurred in March 2012 to avoid possible freezes.

The purpose of the excavation was to prevent direct contact with soil containing site related constituents of concern, and prevent or minimize future migration of contaminants in soil to the groundwater resulting in concentrations that meet the ROD goals. The excavation was completed in 25 ft × 25 ft “cells” that were found to be contaminated above ROD goals. These cells were excavated to a maximum depth of 5 ft below land surface (bls) and backfilled with clean fill the same day. In areas that were excavated to the water table, calcium carbonate was added to the

bottom of the excavation to neutralize acidic groundwater plume. After completion of excavation activities, a low permeability soil cover was placed on the site and graded for storm water control.

In December 2012, an employee of the Sylvite Company removed stockpiled former road base from the site and place it on a private residence and a private road. URS mobilized to this area, sampled and subsequently removed all material that exceeded residential criteria for associated site COCs.

A Restrictive Covenant was executed between the responsible parties, the EPA, and the Department in May 2013. The restrictions include limiting activities in order to protect the integrity of the remedial cover and a restriction on the use of groundwater.

EPA had the first Five-Year Review meeting in March 2017 in which EPA, DEP, the representative for the property owner, and EPA's contractors attended. The First Five-Year Review Report was approved by DEP in July 2017.

Schedule

Groundwater monitoring is ongoing on a semi-annual basis and reported annually, with monitoring occurring in April and October. The recent annual groundwater monitoring reports indicated that the α -BHC plumes appear to be relatively stable and, in some cases, receding. The next groundwater monitoring event will take place October 2021.