Owen Pest Control

2134 Haines Street
Jacksonville, Florida
County: Duval
District: Northeast
Site Lead: Waste Cleanup Program
Approved for Cleanup: August 25, 1996
ERIC ID # 3893

Site Description and History

The C.W. Owens Pest Control operated a pest control business at this site, located in Township 02S, Range 27E, Section 07 at 31° 21′ 01.0455″ N, 81° 38′ 14.1145″ W, from 1964 to early 1989. Pesticides were formulated and mixed at this facility for household and industrial application. Lindsey Pest Control currently occupies the site. Land use at the site is industrial/commercial. The closest residential area is located west approximately 20 yards from the site.

The site occupies a lot approximately ¼ acre in size. Structures at the site include a residential office building, a garage and open air shed. An above-ground kerosene tank is located adjacent to the shed. Additionally, a 500-gallon fuel underground storage tank (UST) was formerly located along the western edge of the site in the rear of the facility. This tank was reportedly removed in 1986. The majority of the site is asphalt or concrete paved, with some grass covered in the front (north side) and rear portions of the site. A number of monitoring wells, installed during previous site investigations, are present as well as an abandoned supply well located in the southwest corner of the site.

In June 1989, Southeastern Environmental Audits, Inc. (SEA) and their contractor (Geraghty & Miller) conducted a Phase II Environmental Audit at the site. This audit was required as a prelude to selling the property and was conducted to determine the potential for groundwater and/or soil contamination. Soil samples collected near the gasoline UST and kerosene tank areas, showed levels similar to background readings, as analyzed with a flame ionization detector (FID). Two areas of potential pesticide contamination were identified by the audit; the workbench area and the southern portion of the property where truck spray tanks were washed to remove residual liquids. Three temporary wells were installed onsite during the audit to delineate groundwater contamination. Groundwater samples collected from these wells were analyzed for organochlorine and organophosphorous pesticides and showed elevated levels including lindane, heptachlor, heptachlor epoxide, and chlordane. Water level measurements taken in these wells indicated a southwest groundwater flow.

Additional soil and groundwater analyses were performed by Ecology and Environment (E&E) consultants during the 1990 Contamination Assessment (CA) in order to further assess impacts from the former pesticide control operations. Elevated levels of pesticides and low levels of organics were detected in soil samples. The highest concentrations of pesticides were detected in the surface soil samples and included: chlordane, DDE, DDT, heptachlor, and heptachlor epoxide. Pesticides were also detected in the subsurface soils, but at considerably lower concentrations. Most samples showed contaminant levels below 1 mg/kg. Onsite groundwater was observed to be contaminated by organochlorine pesticides including aldrin, α-BHC, heptachlor, and heptachlor epoxide. Other organic groundwater contaminants included naphthalene, 2-methylnaphthalene,

2,4-dimethylphenol, benzene, xylenes, toluene, and ethylbenzene. These contaminants are common components (or additives) found in petroleum products (gasoline/diesel fuel) and were not detected in the upgradient monitoring well.

Threat

Elevated levels of pesticides and volatile organic compounds (VOCs) including benzene, toluene, xylenes, & ethylbenzene have been detected in the surficial aquifer groundwater at the site. No shallow limestone "Rock" aquifer private drinking water wells were identified near the site by the well survey. While a significant number of City of Jacksonville municipal wells are located near the site, these wells are completed in the Floridan aquifer system which is over 500 feet deep and separated from the surficial aquifer by a series of low permeability clay confining units. However, due to the proximity of these wells, the groundwater migration pathway may be a concern.

Pesticide contaminated soils exceeding cleanup target levels were excavated and removed from the site in 1999. Additional offsite soil removal is completed in 2013 to address soils with pesticides exceeding soil cleanup target levels for unrestricted use.

Response Strategy and Status (December 2020)

In October 1995, DEP's Northeast District recommended that the C.W. Owens Pest Control site be placed in the State-funded cleanup program. In August 1996, the site was approved as a State action site in the Waste Cleanup Program, allowing funding for cleanup of pesticide contamination using the State's Water Quality Assurance Trust Fund. The site was assigned to a Waste Site Cleanup Section project manager and hazardous waste sites contractor in March 1997. The petroleum portion of the contamination is distinct from the pesticide groundwater and soil contamination, and will be addressed under the State Abandoned Tank Restoration Program (ATRP).

Contamination assessment activities to delineate site-related pesticide contamination began in May 1997. A draft Contamination Assessment Report (CAR) was submitted in November 1997. The data indicated that chlordane was present in the soils and surficial aquifer groundwater at significant levels above both drinking water standards and allowable soil levels for unrestricted land use. Three additional monitor wells were installed in early 1998 to further delineate the extent of groundwater contamination. A potable well survey was also completed.

The Contamination Assessment Report (CAR) was approved by DEP in June 1998. A Remedial Alternatives Summary was approved in August 1998. Soil excavation with offsite disposal at a permitted disposal facility was selected in March 1999 by the Department as the final remedial strategy for soil contamination at the site. One year of quarterly groundwater monitoring was also specified to support selection of a final groundwater remedy. A Public Information Session was held in Jacksonville in May 1999 to present the proposed remedy to local residents and other interested parties.

The soil Remedial Action Plan (RAP) was approved in June 1999. Soil removal activities were initiated in July. The final Remedial Action Report documenting completion of soil cleanup was approved by DEP in October 1999. Additional monitoring wells were installed in March 2000, and confirmed that groundwater contamination extended offsite.

Groundwater monitoring after September 2001 confirmed an ongoing decline in contaminant concentrations indicating that natural attenuation was occurring. However, a comparison of historic contaminant levels also indicated that the rate of decline had slowed to an estimated 13 percent per year, resulting in a projected timeframe of 10 or more years to meet groundwater cleanup target levels. In 2004 and 2005, DEP investigated in situ treatment methods to enhance the progress of groundwater cleanup. An October 2005, a Bench Study and Groundwater Sampling Report of site groundwater was completed in order to evaluate the effectiveness of the injection of chemical oxidants into the aquifer to destroy the pesticide contamination. While chemical oxidation appeared to be the most promising technology, the bench test results showed limited reduction in contaminant concentrations in samples simulating the site groundwater environment.

Results from the July 2008 groundwater monitoring event confirmed continued but slow natural attenuation of groundwater contamination. Annual groundwater monitoring was conducted in November 2009 and was supplemented by direct push groundwater sampling as well as soil sampling at and below the water table. Based on the results documented in the May 2010 groundwater monitoring and supplemental site assessment report, 7 additional monitoring wells were installed to more effectively monitor the plume. Monitoring results in June 2011 continue to confirm onsite and offsite groundwater contamination by organochlorine pesticides, with dieldrin and beta-BHC contaminant concentrations significantly above groundwater cleanup target levels.

A review of the May 2010 supplemental assessment indicates that soil contamination remains onsite that is continuing to act as a source of groundwater contamination. In June 2011, DEP tasked its contractor to conduct further onsite and offsite soil sampling in order to delineate the areas where contaminant concentrations in soils may be leaching to groundwater. The contractor was also tasked to develop a design for removal of those leachable soils.

Soil sampling conducted from July 2011 through February 2012 identified pesticide contamination at depths not addressed by the previous removal action both onsite where soils remain above commercial soil cleanup target levels and leachability criteria, and offsite where soils were observed at concentrations above leachability criteria. DEP and its contractor evaluated removal scenarios to effectively address both direct contact and leachable sources as documented in the March 2013, Source Evaluation and Closure Strategy Memorandum.

An amended decision memorandum was signed in April 2013 documenting that the amended soil remedy will include removal of offsite soils with concentration exceeding direct contact and leachability criteria for unrestricted land use. Onsite soil contamination will be addressed by engineering and institutional controls, using the existing asphalt/pavement cover for source control and to prevent direct contact with soils. Institutional controls will specify that current and future land use remain commercial/industrial consistent with the site remedy. Groundwater monitoring

will continue, to confirm the effectiveness of the source remedy and that the groundwater plume remains stable or is shrinking.

The draft final remedial action plan (RAP) was submitted in March 2013. Notice of the temporary point of compliance (TPOC) for the groundwater plume was issued to affected property owners in April 2013. No public comments were received. Public notice of the proposed RAP Approval Order was issued in May 2013. No comments were received.

In June 2013, the DEP contractor and remedial subcontractor implemented the soil remedy. Offsite contaminated soils totaling 1,007.5 tons were excavated and disposed at an offsite permitted disposal facility. Excavated areas were backfilled with clean fill and re-vegetated with grass seed and sod. The onsite asphalt pavement was resurfaced and sealed to serve as an engineering control. DEP approved the Offsite Excavation Completion Report in November 2013 following a site inspection.

Annual groundwater monitoring and inspection of the engineering controls has occurred to support the evaluation of the effectiveness of the natural attention remedy in reaching groundwater cleanup target levels. Dieldrin continues to be the problematic contaminant with two wells producing samples exceeding the NADC.

In February 2019 the District and Business Support Program reviewed an Ability-to-Pay application stating that Jonathon Shields would not be able to pay for site cleanup.

In November 2019, Groundwater sampling activities took place for Year 18. Four OCPs (alpha-BHC, beta-BHC, dieldrin, and heptachlor epoxide) were detected in exceedance of their respective GCTLs at one or more locations. Site closure under RMO III (No Further Action with Controls) was evaluated for the site, however due to the isolated monitoring wells at the center of the plume, the site did not demonstrate at least one of year groundwater sampling results that display that the plume is stable or shrinking. Institutional controls on groundwater at the site and surrounding properties will need to be implemented prior to site closure. Geosyntec and FDEP discussed proposed and recommended work in October 2020. That proposed work includes monitoring well installations to refine the horizontal limits of the current groundwater contaminant plume and semi-annual groundwater sampling for 35 monitoring wells.

Schedule

The next groundwater monitoring event for Year 19 is scheduled for November 2021 where trend analysis will be revaluated and consideration for No Further Action with Controls (NFAC) under Risk Management Option III (RMO III) based upon the groundwater analytical results.