

Butler Plaza
3246 Southwest 35th Boulevard
Gainesville, Florida
County: Alachua
District: Northeast
Site Lead: Waste Cleanup Program
Approved for Cleanup: February 18, 2004
HWC # 157

Site Description and History

The site is currently the location of a large shopping center called Archer Plaza East. Within this plaza is the Butler Plaza shopping center in Township 10S, Range 19E, Section 14 at 29° 37' 26.0069" N, 82° 22' 40.3080" W. The Butler Plaza was formerly the location of the Stengel Airfield; an old US Army Air Corps pilot training center that was founded in 1942. The old airfield included runways, hangars, classrooms, offices, and three open maintenance areas. An oil house with underground storage tanks (USTs) was located in between the hangars and office buildings. Three USTs included one 10,000 gallon tank that contained 80 octane fuel and a 4,000 gallon tank contained 90 octane fuel. After World War II, the training center was closed and buildings were later occupied by private enterprises including a fiberglass boat hull manufacturer, and later in the 1960s by Vital Industries; an electronics equipment manufacturer. Butler Plaza was built on top of the old hanger area in 1974.

In 1985, the Florida Department of Environmental Regulation (FDER, now DEP) Northeast District requested that the Operation Response Section conduct a groundwater contamination source identification study for volatile organic compound (VOC) contamination found in two private wells in a residential area. Additional sampling indicated that the water samples from the supply wells at Archer Road Village Mobile Home Park and Voyles Duplex were also contaminated with trichloroethene (TCE) and tetrachloroethene (PCE). The supply wells were shut down and all areas were connected to city water. The 1986 and subsequent 1987 FDER assessment included the installation of 16 monitoring wells and soil borings throughout the site area. Evaluation of the data indicated that the Floridan Aquifer had been impacted by VOC contamination in two areas. The contamination detected in the Butler Plaza was attributed to the former Stengel Airfield hanger area. According to the groundwater investigation reports, the primary source of the chlorinated solvent-related groundwater contamination is in the vicinity of one of the old airfield hangars formerly located at an area now covered by the Butler Plaza.

An Environmental Assessment (Phase I) was completed by Universal Engineering Sciences, Inc. in March 1993, and a Contamination Assessment Report was completed for Mr. Butler in November 1993. The results indicated the presence of TCE and PCE in existing monitor wells located on the site. The source of the contamination was believed to be located near the southeast end of Butler Plaza.

Harding ESE, under contract with the DEP, conducted additional field assessment activities in 2001. This limited assessment identified elevated PCE contamination in soil and groundwater beneath Butler Plaza in a commercial space where a grid of nine soil borings and two groundwater direct push technology samples were collected inside the building. Evaluation of these data indicated the VOC source area remained at the site. The detected PCE concentrations also

indicated the possibility of dense non-aqueous phase liquid (DNAPL) in this source zone. This likely source zone is located in the vicinity of the historical aircraft-hanger, oil house, and offices which were used by Vital Industries; an electronics equipment manufacturer known to have used chlorinated solvents.

This site was proposed and accepted for State-funded cleanup in January 2004. The request was pursuant to DEP Office of General Council Consent Final Judgment against Regency Windmeadows, LTD, and S. Clark Butler. The site was included in the state cleanup program in February 2004. A condition of the Consent Decree required the defendants to execute and record a Restrictive Covenant for the entire property.

Threat

The contaminants of concern are VOCs. These contaminants include PCE in both soil and groundwater at concentrations reflecting an ongoing contaminant source to the Floridan Aquifer.

Response Strategy and Status (June 2016)

In March 2004, GeoSyntec Consultants, under contract with the DEP Waste Site Cleanup Section, submitted a Site Assessment Work Plan. Assessment activities were initiated in April 2004, and completed in December 2004. Assessment information indicated the following: no portable wells are located within a one-mile radius of the site; PCE soil concentrations exceed the leachability criteria in soil samples; elevated levels of total VOCs are above groundwater cleanup target levels (GCTLs) with a maximum concentration for PCE of 9,300 µg/L.

In May 2006, the Remedial Action Plan was approved by DEP. The Remedial Action Plan included the construction of a Multi-Phase Extraction (MPE) system to address the soil and groundwater contamination. The MPE system was expected to achieve soil cleanup target levels (SCTLs) within 36 months after system startup. The timeframe for the groundwater to reach natural attenuation default criteria (NADCs) was estimated to be five years.

In September 2006, construction began on the MPE system. Baseline groundwater sampling was completed in December 2006, and the MPE system was placed into service in February 2007. During the first quarter of operation, the system removed approximately 100 lbs of vapor-phase VOC mass.

In June 2009, Geosyntec performed a Supplemental Site Assessment. Their findings indicated the VOC concentrations continue to decline within the PCE and TCE source areas. Geosyntec recommended continued operation of the MPE system and to install an additional recovery well to address the remaining source area. Geosyntec also recommended an alternative biostimulation method as an enhancement to the current system. In June 2010, VOC concentrations were continuing to decline within the PCE and TCE source areas.

In August 2010, groundwater and soil analyses sampling frequencies were reduced from quarterly to semi-annual. The treatment system will continue to be operated until it is no longer effective in

treating the source areas. At that point the site was to be re-evaluated to determine a more effective method for treating the source areas.

In early 2011, contaminants of concern had reached asymptotic levels after operating the Multi-phase Extraction treatment system for four years. In June 2011, Geosyntec submitted a Remedial Action Plan Modification (RAP Mod) recommending implementation of a pilot-scale in situ biostimulation (ISB) to promote reductive dechlorination of chlorinated volatile organic compounds (CVOCs) in the groundwater.

The Limited RAP Mod was approved in August 2011, for in-situ biostimulation (ISB) using the existing MPE treatment system. Injection began in November 2011, and a report summarizing the progress of the ISB injection was submitted to the DEP in March 2012.

Based on the 2012 lab analyses, the ISB injection appears to be effective in reducing PCE and TCE concentrations. Lab data indicate current groundwater conditions continue to be favorable for reductive dechlorination.

On May 2, 2013, a RAPM was approved for ISB injection to promote reductive dechlorination to address dissolved CVOCs in the groundwater at the site. The ISB injection was to be located within the target treatment zone near Monitor Well 1S, located in the southern portion of the shopping center. The project was to be implemented if funding is available.

The Remedial Action Plan Modification was implemented during August 15-21, 2013. The implementation included additional monitor well installations prior to the injection. On September 23, 2013, EOS injection activities were completed at the site. Site-wide groundwater monitoring results indicated VOHs exceeding GCTLs were not migrating horizontally offsite or vertically into deeper portions of the surficial aquifer.

In February 2014, two days of direct push soil and groundwater sampling was conducted within the vacant strip mall bay formerly occupied by Cato Fashions to evaluate soil and water VOH concentrations and assess the EOS distribution previously injected. This location is considered to be above the area of historical highest PCE concentrations, and until vacated, is inaccessible. The results of the investigation indicated that VOH concentrations exceeding the leachable SCTLs are present in the vadose zone and saturated soils beneath the former Cato Fashions location. This is likely attributable to VOH adsorption into the lower permeability soil matrix.

In April 2014, Geosyntec suggested expanding the ISB treatment area to address residual PCE groundwater impacts beneath the vacant unit. A RAPM was prepared and submitted as the unit became occupied with a new tenant; The Sleep Center. ISB injections were temporarily suspended until access is granted for indoor injection activities.

PCE and TCE soil and groundwater concentrations at this location have decreased significantly since the 2001 assessment, however, they still exceed NADCs. PCE has been reduced to vinyl chloride (VC) within the PCE treatment area; PCE concentrations are below detectable values

while VC concentrations slightly exceed the GCTL. Total Organic Carbon (TOC) concentrations indicate the emulsified oil/electron substrate was not effectively distributed.

Schedule

A Semi-Annual Remedial Performance Evaluation Report was approved November 2014. Two Limited Remedial Action Plan Modification Reports have been submitted to DEP for review by GeoSyntec which separately recommend additional injections under the areas of the CATO Fashion unit (PCE source area) and the parking lot (TCE source area). These design documents are currently under review, and discussions are being held regarding the proposed remedial action with GeoSyntec. Based on a June 2014 discussion, the implementation of the RAPMOD for the PCE plume will be deferred until such time that there is access to the interior of the former Cato Fashion for installation of the permanent injection wells inside the building.

A task assignment was issued in June 2016 for additional groundwater assessment using DPT and Sonic in the vicinity of the TCE plume in order to investigate areas potentially missed in the past.

Groundwater analyses will continue to be performed on a biennial basis. The most recent groundwater monitoring event took place in March 2015 with the next event to take place in March 2017. The laboratory results from the February/March 2015 groundwater monitoring event are summarized below:

- PCE and TCE were detected at concentrations greater than their respective NADCs;
- PCE, TCE, *cis*-1,2-dichloroethene (CIS), and VC were detected at concentrations greater than their respective GCTLs;
- PCE concentrations exceeded the NADC in monitoring well MW1DR (3,800 µg/L), and was not detected above the laboratory method detection limit (MDL) in monitoring well MW7; however, the MDL (7.4 µg/L) is greater than the GCTL;
- TCE concentrations exceeded the NADC in monitoring wells MW1DR (570 µg/L) and MW7 (690 µg/L);
- CIS concentrations exceeded the GCTL in monitoring wells MW1DR (440 µg/L) and MW9 (130 µg/L); and
- VC concentrations were not detected above MDLs in monitoring wells MW1DR and MW7; however, the MDLs exceeded the VC GCTL (10 and 5.0 µg/L, respectively).