

**Arkla Terra Property**  
**11706 US Highway 301**  
**Thonotosassa, FL**  
**County: Hillsborough**  
**District: Southwest**  
**Site Lead: EPA**  
**Placed on NPL: May 11, 2009**  
**HWC # 164**  
**ERIC ID # 3934**

**Site Description and History**

The Arkla Terra Property site encompasses approximately 8 acres and is located at 11706 US Hwy. 301 in Thonotosassa, Hillsborough County, Florida 33592, in Township 28S, Range 20E, Section 09 at 28° 03' 28.0000" N, 82° 19' 03.0000" W. From 1976 through 2006 the site was primarily operated as an Underground Storage Tank (UST) refurbishing facility. Solvents, including tetrachloroethene (PCE) were used to clean the USTs prior to their repairs.

Several companies operated at the facility, including Southeast Oil and Development Corporation (SODC, Inc.) from 1976 through 1988; Four Star Petroleum from 1982 to 1985; PS Equipment, Inc. from 1989 through 1994; Novadyne Corporation from 1986 through 1996; and Arkla Terra Inc., from 1993 through 2006. Solvents were reportedly used to clean tanks prior to repair, or dismantling. Aerial photographs of the site have shown over 500 storage tanks on the property at one time, along with numerous other types of containers. In these photographs, soil staining and soil disturbance were observed around the tanks.

In December 1994, the DEP Site Investigation Section (SIS) conducted a supplemental assessment that concluded that the Entrepreneur of Tampa property, formerly operated by Southeast Oil and Development, was a source of PCE and trichloroethene (TCE) contamination in the Floridan aquifer. During the course of this investigation, ground water samples were collected from three supply wells at the Hilltop Mobile Home Park, located approximately 1,000 feet east of and hydrogeologically isolated from the ground water plume, also known as the East Fowler Avenue plume, associated with the Entrepreneur of Tampa property. These three supply wells indicated the presence of PCE. Based on the contamination detected in the wells from this hydrogeologically separate area, SIS contacted the Hillsborough County Public Health Unit (HCPHU) and advised the collection of ground water samples adjacent to the Southeast Oil and Development operation located at 11706 US Hwy. 301, the Arkla Terra Property.

In February 1995, the HCPHU collected nine ground water samples from potable wells adjacent to Rock Hill Rd., Jackson Rd., E. Fowler Ave., Ohio Rd., and US Hwy. 301. The results indicated that four wells exceeded the Florida Primary Drinking Water Standard (FPDWS) for PCE of 3µg/L and the Federal Maximum Contaminant Limit (MCL) of 5µg/L with concentrations ranging from 12 to 180 µg/L.

Between April 4, 1995 and July 1, 1995, the DEP SIS and HCPHU sampled 215 potable wells. Of the 215 wells sampled, 117 were reported to contain detectable levels of PCE with 78 exceeding the FPDWS. Spatially, the contamination extended from north of Rock Hill Rd. to approximately 3,500 feet south of the intersection of Skewlee and Timmons Rds. The highest concentrations of

PCE were located adjacent to the intersection of US Hwy. 301 and Jackson Rd. Based on the results of the private well sampling, DEP provided for the installation of commercial water treatment systems to remove volatile organic compounds (VOCs) and other contaminants from PCE-contaminated wells and provided approximately \$1,000,000 to Hillsborough County to extend municipal water lines into the affected areas in order to connect the affected residents to the municipal water supply.

On August 22, 1995, SIS installed five shallow wells (RHS-1 through RHS-5) to a depth of 40 feet below land surface (bls), and one deep well (RHF-1). No VOCs were detected in any of the newly installed wells.

In March 1996, SIS conducted additional investigations at three residential properties, the Smith, Thornton, and Brice properties that contained solid waste piles, junk cars, and debris from illegal dumping; the Lester property that conducted mobile home sales and service; and the O'Neil property that conducted auto repair. Direct-push technology was utilized to collect shallow ground water samples and electric conductivity data to determine lithologic profiles. Soil and soil-gas samples were also collected and designated as PP-1 through PP-17. All samples were analyzed with a gas chromatograph and no samples revealed significant VOC contamination.

On April 3, 1996, SIS initiated an investigation of Floridan aquifer contamination at the Rock Hill Site. SIS installed 10 deep monitoring wells (RHF-2, RHF-3 and RHF-6 through RHF-13) in the area to determine ground water flow direction, ground water gradient, and ground water quality. Analytical results indicated PCE concentrations ranging from below detection limits to 200 µg/L in the newly installed wells.

### **Threat**

The source of site contamination includes PCE soil contamination that is present at significantly elevated concentrations, and a groundwater contaminant plume that has caused private residential drinking water well contamination as far as 7,500 feet from the site.

### **Response Strategy and Status (December 2016)**

In March 1999, SIS submitted a Work Plan for the Phillips and Arkla Terra Properties, Rock Hill Site. The purpose of the Work Plan was to outline the previous investigations in the area and to present a plan for determining the source of the PCE ground water contamination. Also in March 1999, the DEP Site Screening Superfund Subsection submitted a Preliminary Assessment (PA) Report to the EPA for the Arkla Terra Property. The PA was conducted to determine the potential for release of hazardous substances to the environment and to assess pathways that may be affected by the operations at the Arkla Terra Property. The PA recommended a high priority Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) action.

In October 2000, SIS submitted a Contamination Assessment Report (CAR) for the Rock Hill Rd. Site (Rock Hill is generally situated around the intersection of US Hwy. 301 and Jackson Rd. and is north of E. Fowler Ave. and south of Lewis Rd.), which included an investigation of the soils at

the Arkla Terra Property as well as eight other properties in the vicinity of Rock Hill Rd. During the CAR, 78 soil-gas samples were collected from the Arkla Terra Property and analyzed by a mobile laboratory for VOCs. Of the 78 soil-gas samples collected, 23 revealed detectable levels of PCE ranging from 0.5 µg/L to 403.3 µg/L. Additionally, 26 subsurface soil samples at 10 locations and one ground water sample were collected from the Arkla Terra Property and analyzed by DEP's central laboratory. Subsurface soil samples revealed detectable levels of PCE ranging from 2.9I µg/kg to 320 µg/kg. The ground water sample revealed 8.6 µg/L of PCE. No background samples were designated in the CAR; however, several samples indicated non- detect. Five potable well ground water sampling events were conducted at the Rock Hill Site, which indicated that the Arkla Terra Property was a likely source of the PCE ground water contamination.

The CAR concluded that a large area of the Floridan aquifer was contaminated with PCE. The plume was determined to extend over 7,500 feet southwest from the intersection of US Hwy. 301 and Jackson Rd. to near the intersection of Tom Fulsom and Joe Eberts Rds. The CAR concluded that the contaminated soils and approximately 25,000 square feet of PCE- contaminated soil-gas within the vadose zone on the Arkla Terra Property was a source of the PCE ground water plume.

In February 2000, Site Screening conducted a Desktop Site Inspection (SI) for the Arkla Terra Property. The SI consisted of a review of available file material to assess the threat posed to human health and the environment and to determine the need for further CERCLA investigations and, if warranted, support site evaluation using the Hazard Ranking System (HRS) for possible inclusion onto the National Priorities List (NPL). The SI recommended a high priority Expanded Site Investigation.

In January 2005, Weston Solutions, Inc., (Weston) Superfund Technical Assistance and Response Team-2000 (START-2) submitted a Site-Specific Sampling Plan to the EPA for an HRS Special Study Investigation of the Arkla Terra Property. The sampling activities at the Arkla Terra Property were conducted in June 2005. The sampling investigation was conducted as an HRS Special Study that focused on the collection of soil and ground water samples to fill data gaps associated with the source characterization. Due to earth-moving activities on the property at the time of the sampling, and the length of time since Arkla Terra operated at the property, surface soil samples were collected beneath the surface from depths ranging from 0 to 2 feet bls. The sampling results indicated elevated levels of PCE in the soil samples collected from at the Arkla Terra Property, with concentrations ranging from 10U µg/kg to 88 µg/kg. Additionally, an on-site temporary ground water well indicated an elevated level of PCE at 23µg/L.

The Arkla Terra Property was proposed for inclusion on the NPL by the US EPA on September 3, 2008 and was formally listed on the NPL on May 11, 2009.

Although all 117 owners of affected wells were offered free hook-up to the municipal water system, a few declined or decided to keep their old wells for irrigation purposes. The State and the County continue to sample such private water wells in the area on a periodic basis. The EPA reports that, at this time, the groundwater plume does not appear to be migrating or expanding. The EPA is in the process of establishing temporary point of compliance wells for this site.

The EPA collected additional data to identify and delineate subsurface soil contamination at the site. The assessment included collecting soil gas, soil and water samples from the site. A Membrane Interface Probe study was also performed to better delineate the vertical and horizontal extent of the onsite contamination. A round of private water well data was also collected. An Engineering Evaluation/Cost Analysis has been prepared for this site to perform a non-time-critical removal action utilizing in-situ electrical resistive heating (ERH) and soil vapor extraction (SVE).

Construction of the ERH system began in the spring of 2012. Instead of an SVE system, the vendor proposed use of a multiphase extraction (MPE) system to treat soil gas and water generated by the ERH system, which, would result in a more efficient source removal, meeting DEP's more rigorous cleanup standards. After resolving a funding issue to ensure uninterrupted operation of the system, the ERH system was started-up on August 4, 2012. The ERH system was expected to be shut down on or about January 1, 2013; however, the EPA obtained funds to keep the ERH system in operation for an additional two weeks in January 2013. The system was shut-down on January 15, 2013 after 164 days of operation, having removed a total of over 1,400 lbs of PCE from the subsurface soil. DEP reviewed and approved (with comments) the final Removal Action report on June 28, 2013.

### **Schedule**

In spite of the successful operation of the ERH system, groundwater in certain areas onsite still exceeds Federal and State MCLs and State natural attenuation default concentrations, which may require additional follow-up remediation. Chemical Oxidation and Biostimulation are two techniques under consideration. Additional groundwater sampling is being performed to determine if the source removal has had a notable effect on the offsite plume. Current data indicates that this may be the case.

A Remedial Investigation/Feasibility Study (RI/FS) for the final remedial action was scheduled to be completed in 2014; however, the primary remedial contractor for the site, WRS Compass, declared bankruptcy on July 25, 2014, which has delayed further work on the site. A new contractor has been tasked by the US EPA to complete the RI/FS. Following a public meeting to obtain citizens input on the project, preparation of a Record of Decision and a Remedial Design is expected to follow in late 2017.