# Site Review And Update

HOLLINGSWORTH SOLDERLESS TERMINAL COMPANY

FORT LAUDERDALE, BROWARD COUNTY, FLORIDA

CERCLIS NO. FLD004119681

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U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Agency for Toxic Substances and Disease Registry
Division of Health Assessment and Consultation
Atlanta, Georgia 30333

## Site Review and Update: A Note of Explanation

The purpose of the Site Review and Update is to discuss the current status of a hazardous waste site and to identify future ATSDR activities planned for the site. The SRU is generally reserved to update activities for those sites for which public health assessments have been previously prepared (it is not intended to be an addendum to a public health assessment). The SRU, in conjunction with the ATSDR Site Ranking Scheme, will be used to determine relative priorities for future ATSDR public health actions.

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Prepared by

The Florida Department of Health and Rehabilitative Services
Under Cooperative Agreement With the
Agency for Toxic Substances and Disease Registry

# SUMMARY OF BACKGROUND AND HISTORY

Hollingsworth Solderless Terminal Company (HSTC) is at 700 NW 57th Place in Fort Lauderdale, Broward County, Florida. The company operated at this 3½ acre site from 1968 until closure in 1982 (EPA 1982). The site is in a small industrial park, immediately surrounded by a commercial/light industrial area. A residential area is east of the site, across I-95 (FHRS 1994). Area homes and businesses use public water supplies. Municipal water is drawn from the Biscayne aquifer, the shallow aquifer underlying the site. This aquifer extends from just below land surface to about 250 feet below ground surface near the site (EPA 1985b), and is the sole source of drinking water in southeastern Florida. This aquifer is recharged by rainfall in areas northwest of the site. Because the aquifer is not confined, the water table freely fluctuates in response to recharge, discharge, atmospheric pressure, and ocean tides (EPA 1982).

HSTC manufactured electrical terminals, consisting of a conductive metal portion and a plastic sleeve, designed to attach by crimping rather than soldering. Solderless terminal manufacture took place in Plant #1, the site of waste generation. Plant #2 was an assembly and storage facility (see Figure 1). Prior to 1981, Plant #2 existed as two buildings separated by a vacant lot. The manufacturing process involved heat-treating parts in molten salt baths, degreasing in trichloroethene (generating sludge), and electroplating (generating wastewater containing heavy metals). Machinery operation and cleaning produced waste oils and grease. Trichloroethene (TCE) also was used as a solvent for scrubbing the floors of the facility. The wash and process waters, containing TCE and heavy metals, were disposed of in on-site drainfields, in a 100-foot deep injection well, and by surface discharge to the lot between the buildings of Plant #2 (prior to building connection) and the vacant lot north of Plant #2. In addition, wastes periodically entered the ground through spillage and nearby storm water drains. These practices contaminated ground water and on-site soils (EPA 1982, 1985b, 1988, 1992).

Ground water contamination beneath the site threatened municipal supply wells close to the site. The Prospect well field, approximately 2½ miles west of the site, is the primary wellfield serving the City of Fort Lauderdale. The Executive well field is an older well field, approximately ½ mile west of HSTC site on the grounds of the Fort Lauderdale Executive Airport, and is generally used as a reserve water supply. Wells on the eastern side of this well field are contaminated with volatile organic compounds (VOCs) and are no longer used for water supply. The Dixie well field, 7-8 miles south of the site, supplied the remainder of Fort Lauderdale's potable water. In addition, there were two wells belonging to the Broward County system close to the site; one is about 1200 feet southeast of the site, and the other is about ¼ mile north of the site. Although the regional direction of ground water flow is to the southeast, ground water under the site flowed to the west and southwest (EPA 1982). Data collected prior to 1982 showed ground water flow in the well field area near the site could vary from due west to due east, depending on well pumpage rates, rainfall amount, storm water canal pumpage, and ocean tides (EPA 1985a).

The principal contaminants of concern were: TCE, trans-1,2-dichloroethene, vinyl chloride, copper, nickel, lead, and tin (EPA 1985a, 1985b). To clean up the soil, the U.S. Environmental Protection Agency (EPA) decided to excavate, aerate, and replace VOC-contaminated soils on site (EPA 1992). Soils were not treated to remove metals because soil metal concentrations were already below cleanup goals, and posed a minimal human health threat (EPA 1985b). In 1987, EPA excavated the old drainfields, exposed contaminated soils to air while on site, and allowed the VOCs to evaporate (EPA 1992). Because this treatment didn't adequately remove the VOCs, EPA later used a vacuum system to enhance VOC extraction (ATSDR 1989). Treated soils were replaced in the drainfields. To clean up the ground water, EPA decided to extract contaminated water from the sand zones of the aquifer, pump the water through an air stripper to remove VOCs, and reinject the treated water back into the ground (EPA 1992). As of August 1994, the air stripping operation had continued for 23 months. Currently, EPA believes asymptotic ground water contaminant levels have been reached (EPA 1994).

In 1989, the Agency for Toxic Substances and Disease Registry (ATSDR) wrote a Preliminary Public Health Assessment for the site. This health assessment concluded the site was of potential public health concern because of possible exposure to airborne contaminants emitting from the air stripper or rising through the soil from ground water. The health assessment did not identify any community health concerns (ATSDR 1989).

## PUBLIC HEALTH IMPLICATIONS

TCE is quite volatile, and it seems likely workers were exposed to TCE on site because of its use both in HSTC's manufacturing process and as a floor-cleaning solvent. Workers may also have been exposed to wastes from clogged drainfields on site, particularly since even minor rainstorms produced localized flooding of the site (EPA 1982). However, we do not know what the exposure concentrations were for these exposure routes. As a result, we cannot further evaluate the likely health effects from past worker exposure.

It is likely workers were exposed to airborne contaminants from air stripper operation. However, EPA's modeled air stripper emission data predicted the emissions would be below applicable threshold limit values (EPA 1985a). In addition, EPA seems to have been monitoring air stripper emissions periodically during the 23 months of operation to ensure air standards were not exceeded. The most recent air monitoring reports for 1994 have found all contaminants to be below detection limits (EPA 1994).

Wells along the eastern side of the Executive well field are contaminated with VOCs, and are no longer in use. In 1985, EPA ran several ground water transport models; all indicated ground water contamination under HSTC was unlikely to reach the well fields west of the site. However, these models showed contamination of the Executive well field could have come from other industrial sources in the vicinity of HSTC (EPA 1985a). It is not known if contamination at HSTC might have affected the public supply well reported to be 1200 feet

southeast of the site; we cannot find further information about this well. Nevertheless, because water supply wells in southeastern Florida typically contain VOCs from a variety of sources, drinking water plants in the region usually have treatment systems to remove VOCs. In addition, the Florida Department of Environmental Protection (FDEP), through the Broward County Public Health Unit, regulates the monitoring and treatment of public water systems in Fort Lauderdale, and ensures the delivery of safe drinking water to consumers. Thus, it is unlikely consumers were exposed to significant quantities of VOCs even if HSTC contributed to the VOC contamination in nearby public supply wells.

## CURRENT CONDITIONS OF SITE

On June 22, 1994, FHRS staff performed a windshield survey at the site. The site is located in a small industrial park near I-95. Old plant #1 is now occupied by a glass, mirror, and plastics company and by an air conditioning company. Old plant #2 is now occupied by an auto and truck accessories company. The monitor well cluster southeast of old plant #1 was visible from the road; other monitor wells were not seen. Two air stripper towers were immediately west of the old plant #2 building.

Soil cleanup has been completed. All monitoring wells have shown contaminant levels below drinking water standards since March 1994, with the exception of one well containing vinyl chloride exceeding Florida's drinking water standard of 1.0 µg/l (microgram per liter). Vinyl chloride in this well has fluctuated up to 5.1 µg/l (FDEP 1994). EPA wishes to stop further air stripping at the site because the agency believes asymptotic values have been reached for all ground water contaminants (EPA 1994).

We searched FDEP's files for community concerns or health complaints related to the site. We did not find any health complaints. We found one community concern from a property owner about possible site-related contamination of the owner's land (Citizen 1985).

## CURRENT ISSUES

There do not appear to be any current health issues related to this site.

EPA wants to stop the air stripping operation because they believe ground water contaminants have reached asymptotic concentrations. FDEP's response is pending.

## CONCLUSIONS

The conclusion of potential public health concern in the 1989 ATSDR health assessment is no longer valid. Soil cleanup at the site has been completed. The EPA believes a symptotic values have been reached for all ground water contaminants. Based on our findings, HSTC does not appear to be of public health concern.

## RECOMMENDATIONS

No further follow-up actions are necessary at this site.

Health Activities Recommendation Panel Recommendations:

The data and information developed in the Site Review and Update have been evaluated to determine if follow-up actions may be indicated. No further follwo-up actions are indicated at this time.

## DOCUMENTS REVIEWED

ATSDR. 1989. Health Assessment (April 7); Hollingsworth Solderless Terminal Company, Broward County, Fort Lauderdale, Florida. Atlanta, GA: U.S. Public Health Service, Agency for Toxic Substances and Disease Registry.

Citizen. 1985. Letter (April 9) from a private citizen to Brent Hartsfield (FDER) concerning site-related contamination of the citizen's land and possible cleanup. Vero Beach, FL.

EPA. 1982. Remedial Action Master Plan; Hollingsworth Solderless Terminal Company, Fort Lauderdale, Broward County, Florida. Decatur, GA: Ecology and Environment.

EPA. 1985a. Focused Feasibility Study Draft Report (August 12) [for] Hollingsworth Solderless Terminal Company, Fort Lauderdale, Florida. Atlanta, GA: Camp, Dresser, and McKee Inc.

EPA. 1985b. Record of Decision (December 16), Summary of Remedial Alternative Selection; Hollingsworth Solderless Terminal Company, Fort Lauderdale, Florida. Atlanta, GA: U.S. Environmental Protection Agency, Region IV.

EPA. 1988. Remedial Design Fact Sheet (August) for Hollingsworth Solderless Terminal Company, Fort Lauderdale, Broward County, Florida. Atlanta, GA: U.S. Environmental Protection Agency, Region IV.

EPA. 1992. Site Status Summary (March) for Hollingsworth Solderless Terminal Company, Broward County, Fort Lauderdale, Florida. Atlanta, GA: U.S. Environmental Protection Agency, Region IV.

EPA. 1994. Letter (August 25) from John Zimmerman to Marvin Collins (FDEP) containing the most recent Hollingsworth status report including data. U.S. Environmental Protection Agency, Region IV, Atlanta, GA.

FDEP. 1994. Memo (August 31) from Marvin Collins to Jim Crane (FDEP) concerning completion of remedial action at the Hollingsworth Solderless Terminal Company. Florida Department of Environmental Protection, Tallahassee, Florida.

FHRS. 1994. Site Visit Notes (June 22) for Hollingsworth Solderless Terminal Company. Florida Department of Health and Rehabilitative Services, Toxicology Evaluation Section, Tallahassee, Florida.

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