

# Redfield Site

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## 5800 East Jewell Avenue Environmental Chronology

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July 2011

**1957-1998 General** Various manufacturing operations were conducted at the site. Products that were manufactured included electronic equipment, rifle and spotting scopes, binoculars and other machined products.

**1967-1998 Redfield** Redfield brand rifle and spotting scopes, binoculars and related products were manufactured at the site. A company that eventually became Brown Group Retail, Inc. purchased the site and business in 1979 then sold the business and operations to Redfield Rifle Scopes, Inc. (RRSI) in 1984. Brown Retail retained ownership of the property and building. RRSI continued the operations, but went out of business in 1998.

The property is currently occupied by CAPCO, which imports and distributes ceramic tile, stone tile, and stone slab from Italy and around the world.

**1993 – 1998 Initial Investigations** Environmental investigations associated with the prospective sale of the property were conducted. Investigations indicated that a degreaser formerly used in the manufacturing facility to remove oil and grease from manufactured parts was a source of cleaning solvents detected in the groundwater below the site. CDPHE was notified of test results and began oversight of the investigations.

**1998 Compliance Order** CDPHE issued a Compliance Order formally requiring a site investigation and remediation activities. Since this time, Brown Retail has been working to: prevent flow of affected groundwater into the adjacent neighborhood, clean up groundwater, test area houses/buildings for the presence of indoor air vapors from affected groundwater and install indoor air mitigations systems where necessary to prevent vapor intrusion.

**1998 – Present Indoor Air** Brown Retail installed indoor air ventilation systems in homes with monitored

levels of 1,1-dichloroethene (1,1-DCE) greater than 0.49 micrograms per cubic meter of air (0.49  $\mu\text{g}/\text{m}^3$ ), the action level established by CDPHE until 2004. In late 2004, CDPHE changed its action level for 1,1-DCE from 0.49  $\mu\text{g}/\text{m}^3$  to 5.0  $\mu\text{g}/\text{m}^3$ . Installation of mitigation systems is now based on this new standard. In 2004, CDPHE also changed their guidance on trichloroethene (TCE). Homes testing above 1.6  $\mu\text{g}/\text{m}^3$  for TCE generally require mitigation systems. Homes testing between 0.8  $\mu\text{g}/\text{m}^3$  to 1.6  $\mu\text{g}/\text{m}^3$  for TCE, require further study to determine if the source of contamination is coming from the groundwater or from inside the home (e.g., from household products) and whether mitigation is required.

As of July 2011, 737 homes had been tested in the Cook Park neighborhood. Based on the state's current action levels, 240 houses require the operation of indoor air mitigation systems.

### **1999 – Present Groundwater Containment**

Brown Retail installed a groundwater “pump-and-treat” containment system in 1999 that continues operation today. The system captures groundwater at the downgradient edge of the site, removing contaminants from the groundwater before it leaves the site and reinjecting the water. The system prevents contaminated groundwater from leaving the site and, by injecting the treated water, flushes contaminated groundwater downgradient from the Redfield site. The system currently is treating 2 million to 3 million gallons of groundwater annually.

### **2004 – 2009 Off-Site Groundwater Treatment**

Brown Retail installed a groundwater bioremediation system on S. Jasmine St. The system is designed to break down solvents in the groundwater by increasing the amount of native biological organisms in the groundwater that break down solvents. Operation of the bioremediation system ceased in 2009, with CDPHE approval, to allow the system's wells to monitor the treatment of residual solvents in weathered bedrock. Although shut down, the bioremediation system equipment remains on standby for potential future use.

### **2009 – Present Off-Site Groundwater Treatment**

Brown Retail installed groundwater injection wells on the 1800 block of S. Kearney St. to address an affected bedrock ridge located between S. Jasmine St. and S. Kearney St., just north of E. Jewell Ave. Natural soy bean oil will be injected into the wells serving as food for microorganisms that consume the oil and the unwanted compounds in the groundwater. The work is being done to expedite treatment of contaminated groundwater seeping from the bedrock ridge.