

**ABC One Hour Cleaners  
Jacksonville, North Carolina  
Region 4  
NCD024644494**

**Site Exposure Potential**

The ABC Cleaners site is on 0.4 hectares in a residential area of Jacksonville, North Carolina (Figure 1). The site consists of two buildings joined to form one complex. Since 1954, ABC has operated a commercial dry cleaning operation at the site. The facility uses 380 liters of tetrachloroethylene (PCE) per month for dry cleaning. Directly behind the two buildings is a smaller building that houses a septic tank/soil absorption system, two dry-cleaning machines, and a 950-liter above-ground PCE tank. During its entire period of operation, ABC has used the septic system for disposal of waste water and sewage. According to the site owner, PCE could have entered the septic tank through leaks in the dry-cleaning machines or from small spills. Spent solvent from dry cleaning operations is recycled (distilled) on-site. From 1954 to 1985, sludge from the bottoms of the distillation tanks (still bottoms) was used to fill in potholes on-site or was buried on-site as a means of disposal. In 1985, a groundwater monitoring study suggested that ABC was a source of PCE contamination to a community well field. Since that time, the still bottoms have been shipped off-site for disposal at an approved hazardous waste disposal facility (EPA 1987).

ABC One Hour Cleaners is 1 km northwest of estuarine wetlands adjacent to Northeast Creek, which is 1.3 km southeast of the site and the nearest downslope surface water body to the site. Northeast Creek flows southwest into the New River, which drains into the Atlantic Ocean 29 km further downstream to the southeast. The average slope of terrain between the site and Northeast Creek is 0.7 percent. Groundwater beneath the site occurs in two aquifers: a surficial sands aquifer and the Castle Hayne Limestone aquifer.

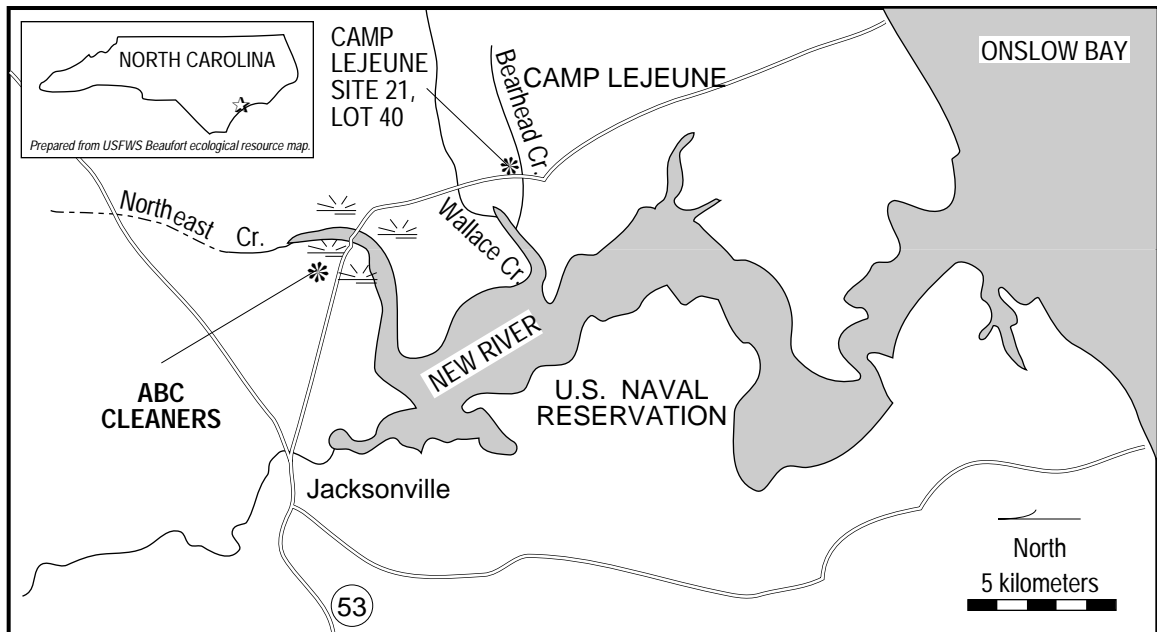


Figure 1. The ABC One Hour Cleaners site in Jacksonville, North Carolina.

Groundwater in the surficial sands aquifer occurs at depths as shallow as two meters below the ground surface. Groundwater migration in the area is to the southeast (EPA 1987). The

Superfund site, Camp Lejeune Marine Corps Base (Site 21 Lot 40) is to the south on Bearhead Creek, which also drains into the New River.

Possible contaminant migration pathways to NOAA trust resources include groundwater flow and surface water runoff to Northeast Creek.

### Site-Related Contaminations

The contaminants of concern to NOAA are tetrachloroethylene (PCE), trichloroethylene (TCE), dichloroethylene, and vinyl chloride (Table 1). Vogel and McCarty (1985) have proposed that TCE, dichloroethylene, and vinyl chloride are products of the anaerobic biodegradation of PCE in groundwater. In 1984, the U.S. Marine Corps sampled 40 municipal wells near the site and detected PCE and related organic contaminants in three wells just downgradient from the ABC facility. As a result, in 1985 the North Carolina Department of Natural Resources and Community Development (NRCD) drilled three additional wells, one on-site and two just downgradient of the site (NRCD 1986). PCE and TCE were detected in the ABC well at concentrations of 12,000 µg/l and 2.7 µg/l, respectively. The five wells downgradient of the site exhibited PCE concentrations up to 1,580 µg/l. TCE was detected in four of the wells at concentrations up to 57 µg/l, and trans-dichloroethylene was detected in one well at 92 µg/l.

Table 1. Maximum concentrations of selected contaminants at the ABC One Hour Cleaners site (NRCD 1986); LOEL (EPA 1986); concentrations in µg/l.

Contaminant	Groundwater Downgradient Wells	Groundwater On-site Wells	LOEL	
			Acute	Chronic
<u>Volatile Organic Compounds</u>				
tetrachloroethylene	1,580	12,000	10,200	450
trichloroethylene	57	2.7	2,000	N/A
trans-dichloroethylene	92	ND	224,000	N/A
vinyl chloride	27	ND	N/A	N/A
N/A: Not available; ND: Not detected				

### NOAA Trust Habitats and Species in Site Vicinity

Habitats of interest to NOAA include the lower reaches of Northeast Creek. Northeast Creek, a tidally influenced, mid-salinity estuarine creek, provides habitat for NOAA trust species (Table 2). The headwaters of Northeast Creek are intermittent and the creek mouth is 60 meters wide. There are saltwater wetlands along the lower reaches of the creek. The New River is a high-salinity, channelized estuarine system. Channelization has resulted in reduced habitat diversity, although this river supports NOAA trust species (Nelson 1989). Atlantic sturgeon and American shad are protected by North Carolina law.

Table 2. NOAA trust resource use of lower Northeast Creek (USFWS 1980).

Species	Spawning	Nursery	Adult	Migratory Route	Recreational Fishery	Commercial Fishery
<b>INVERTEBRATES</b>						
blue crab	X	X	X		X	X
brown shrimp		X			X	X
white shrimp		X			X	X
pink shrimp		X			X	X
<b>FISH</b>						
alewife				X		
American eel			X		X	X
American shad				X		
Atlantic croaker		X	X		X	X
Atlantic menhaden		X	X			X
Atlantic sturgeon				X		
blueback herring				X		
hickory shad				X		
mullet		X	X		X	X
southern flounder			X		X	X
southern kingfish		X	X		X	X
summer flounder			X		X	X
spotted seatrout		X	X		X	X
striped bass				X		
weakfish		X	X		X	X
white perch		X	X	X	X	X

**Response Category:** Federal Fund

**Current Stage of Site Action:** RI/FS Workplan

**EPA Site Manager**

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**References**

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