

**FCX, Incorporated**  
**Washington, North Carolina**  
**Region 4**  
**NCD981475932**

**Site Exposure Potential**

The FCX, Inc. site occupies 3.25 hectares outside Washington, North Carolina (Figure 1). The site is bordered on the northeast by a railroad, on the northwest and southeast by agricultural land, and on the southwest by a wetland. FCX repacked and sold agricultural chemicals on the site from 1945 to 1986. Facilities include a large warehouse and a tank farm with 18 above-ground storage tanks. In the early 1970s, an unlined trench measuring 4 meters by 75 meters and three to four meters deep was dug 60 meters southwest of the warehouse. The trench was backfilled with one meter of soil and filled with waste agricultural chemicals contained in jugs and paper and plastic bags. These wastes were then covered with 60 cm of soil (Nicholson 1987).

The closest surface water to the site is a 111-hectare freshwater wetland 90 meters to the southwest of the trench on the FCX site. This wetland is drained by Kennedy Creek; a small arm of Kennedy Creek is within 300 meters of the trench. The wetlands between the site and Kennedy Creek slope to the southwest at less than an one percent grade. Kennedy Creek flows 900 meters to the southeast before discharging into the Pamlico River, which empties into Pamlico Sound.

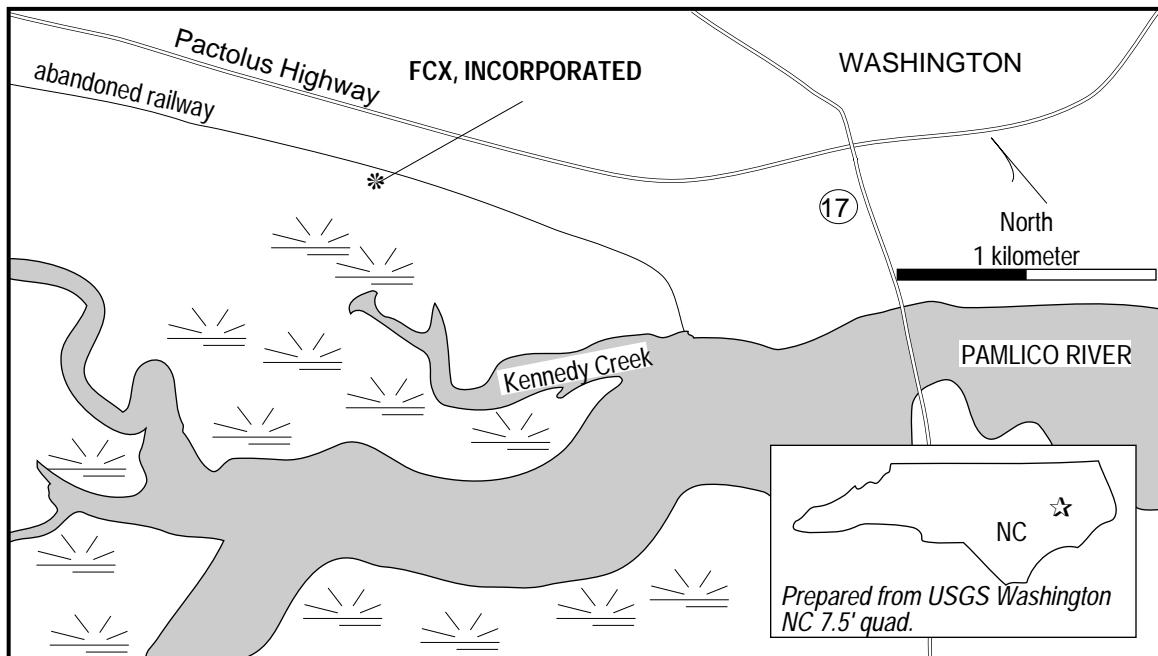


Figure 1. The FCX, Incorporated, site in Washington, North Carolina.

Groundwater occurs 3.25 to 4 meters below the site (Nicholson 1987). No information was available regarding the direction of groundwater flow or possible groundwater discharge points. As the deepest point of pesticide and herbicide disposal was two to three meters below the ground surface, these chemicals may contaminate the groundwater. Possible contaminant migration pathways to NOAA trust resources are surface water runoff and groundwater discharge to wetland habitats in Kennedy Creek and the Pamlico River.

## Site-Related Contamination

The contaminants of concern to NOAA are pesticides, mercury, and other agricultural chemicals (Table 1). Contaminant levels in soil samples taken adjacent to the disposal trench reportedly were generally much higher than in soils sampled away from the disposal trench. Contaminants present in high concentrations included chlordane, aldrin, DDT, DDE, and dieldrin; aldrin had the highest concentrations (1,585 mg/kg). Mercury was found at high levels in soil samples away from the disposal trench.

Table 1. Maximum concentrations of contaminants at the FCX site (Nicholson 1987); concentrations in mg/kg.

Contaminant	Soils Adjacent To Disposal Trench	Soils from Other Locations on Site
<b>ORGANIC COMPOUNDS</b>		
<u>Semi-Volatiles</u>		
hexachlorobenzene	9.3	ND
PAHs	20.6	4.0
<u>Pesticides</u>		
chlordane	50.9	1.7
aldrin	1,585	0.15
DDT	159.5	1.8
DDD	0.26	0.46
DDE and dieldrin	37.7	0.61
malathion	ND	0.28
carbon disulfide	6.2	ND
<b>INORGANIC SUBSTANCES</b>		
<u>Trace Metals</u>		
mercury	ND	28
ND: Not detected		

## NOAA Trust Habitats and Species in Site Vicinity

Habitats with resources of concern to NOAA include the wetlands adjacent to Kennedy Creek, Kennedy Creek itself, the Pamlico River, and Pamlico Sound (Table 2). The wetlands are brackish and provide nursery and adult habitat for many of the commercially important species found in Pamlico Sound (Table 2).

NOAA trust resources use Kennedy Creek and the upper reaches of the Pamlico River, which are low-salinity and have a limited tidal range. Kennedy Creek receives sewage effluent from the city of Washington and thermal discharges from National Spinning, a textile mill situated along its banks. The creek suffers from low dissolved-oxygen levels during the summer months (Hawkins 1989). Kennedy Creek and the upper Pamlico River provide spawning and nursery habitat for blueback herring, striped bass, and white perch. Although there is some recreational fishing in Kennedy Creek, the fish are not harvested as a food source because of the creek's poor water quality (Shiloar 1989).

The lower Pamlico River is a mid-salinity, tidal river used by blue crab and pink, white, and brown shrimp as a nursery area. This area is important for both recreational and commercial fisheries.

Pamlico Sound supports diverse marine resources; eastern oyster, blue crab, bay scallop, and pink shrimp are all significant fisheries in the sound. Green sea and loggerhead turtles,

which are both federally listed as threatened species, use Pamlico Sound for migration and as adult habitat (USFWS 1980).

Table 2. Selected NOAA trust resource use of habitats in Kennedy Creek, the Pamlico River, and Pamlico Sound (USFWS 1980; Shiloar 1989).

Species	Kennedy Creek/ Upper Pamlico River	Lower Pamlico River	Pamlico Sound
<b>INVERTEBRATES</b>			
bay scallop			A,C,N,R,S
blue crab	A,N,R	S,N,A,O,R,C	A,C,N,O,R,S
brown shrimp		N,C,A,R	A,C,N,R
eastern oyster			A,C,N,R,S
pink shrimp	A,N,R	N,C,A,R	A,C,N,R
white shrimp		N,C,A,R	A,C,N,R
<b>FISH</b>			
alewife	A,N,R,C	A,M,C,R	A,M,C,R
American eel	A,R,C	A,R,C	A,C,R
American shad	A,R,M,C	A,M,C,R	A,M,C,R
Atlantic menhaden	A,N,R	N,C,A	N,A,C,R
Atlantic sturgeon	C,M	M,C	M,C
blueback herring	A,N,R,S,C	A,M,C,R	A,M,C,R
flounder		A,C,R	A,C,R
hickory shad	A,R,M,C	A,M,C,R	A,M,C,R
red drum		R	R
striped bass	A,N,R,S,M	M,A,C,R	A,C,R
striped mullet	A,N,R,C	N,A,C,R	A,C,R
white perch	S,A,N,R,C	N,A,M,C,R	A,M,C,R
<b>MISCELLANEOUS</b>			
green sea turtle			A,M
loggerhead sea turtle			A,M
A: adult habitat      C: commercial fishery      M: migration corridor      O: overwintering area N: nursery habitat      R: recreational fishery      S: spawning habitat			

**Response Category:** Federal Fund

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

**EPA Site Manager**

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**NOAA Coastal Resource Coordinator**

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**References**

EPA. 1987. Potential Hazardous Waste Site, Site Inspection Report, FCX-Washington site, Washington, North Carolina. Atlanta: U.S. Environmental Protection Agency, Region 4.

Hawkins, J., biologist, North Carolina Division of Marine Fisheries, Washington, North Carolina, personal communication, January 26, 1989.

Nicholson, G. C. 1987. Site Inspection Report, FCX-Washington site. Atlanta: Solid and Hazardous Waste Management Branch, CERCLA Unit, U.S. Environmental Protection Agency.

Shiloar, T., biologist, North Carolina Division of Marine Fisheries, Washington, North Carolina, personal communication, January 27, 1989.

USFWS. 1980. Atlantic coast ecological inventory: Rocky Mount, North Carolina. Washington, D.C.: U.S. Fish and Wildlife Service. 1:250,000 scale map. 35076-A1-EI-250.