

**Agrico Chemical Company
Pensacola, Florida
Region 4
FLD980221857**

Site Exposure Potential

The Agrico Chemical Company site occupies 2.4 hectares in an industrial area of Pensacola, Florida (Figure 1). The site is bordered by major roadways to the south and east, a railroad yard to the west, and an abandoned quarry to the north. From 1889 to 1920, the site was used to produce sulfuric acid from pyrite rock. From 1920 to 1959, Agrico produced fertilizer from phosphate rock at the site. The latter process produced hydrofluoric and fluosilicic acid gases. Water used to scavenge these gases was disposed of in a series of outdoor ponds, whose total capacity is estimated to be 21,000 m³. The tanks, trough, and agitators used in the plant may have been made of lead, which corrodes when exposed to concentrated acid at high temperatures. In 1959, the fertilizer factory, fluoride plant, and all storage and shipping houses were torn down.

The nearest surface water body to the site is Texar Bayou, 2 km to the east. It is unlikely that there is a direct surface water migration pathway from the site to Texar Bayou (EPA 1987). A four-lane highway with a trough-like, high-shouldered median, and several other roadways lie between the site and Texar Bayou. A surface water pathway to Pensacola Bay, more than 5 km south, is unlikely for the same reasons. Groundwater occurs 17 meters beneath the site. The groundwater flows east-southeast toward Texar Bayou and Pensacola Bay.

Groundwater flow is a possible contaminant migration pathway to NOAA trust resources in Texar Bayou and Pensacola Bay.

Site-Related Contamination

Fluoride, lead, zinc, and sulfuric, hydrofluoric, and fluosilicic acids are the contaminants of concern to NOAA. In 1983, EPA site investigators sampled a white, gelatinous substance observed in two of the discharge ponds, and took a surface water sample from each of the two ponds and one from a concrete basin on the western edge of the site. These samples were analyzed for nitrates, phosphates, chemical oxygen demand, and trace metals. The gelatinous samples taken from the ponds showed high fluoride and lead concentrations (Table 1). The surface water samples taken from the ponds had high concentrations of fluoride (135,000 µg/l) and zinc (1,100 µg/l).

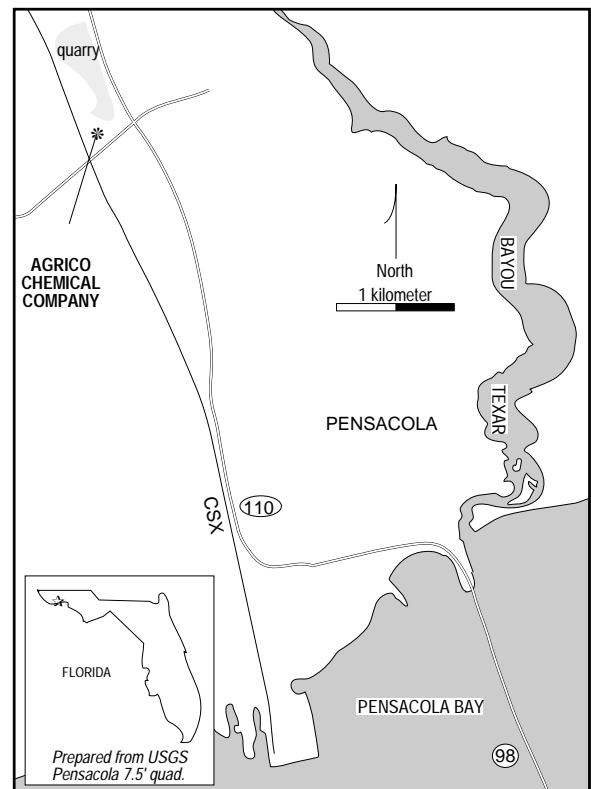


Figure 1. The Agrico Chemical Company site in Pensacola, Florida.

Acute toxicity for rainbow trout has been observed in fluoride concentrations ranging from 2,700 to 4,700 µg/l (Nuehold and Sigler 1960). The pH of these water samples was found to be 4.4 and 5.2, respectively. The sample taken from the concrete basin had a pH of 8.5. There were no groundwater data presented in the documents reviewed.

Table 1. Maximum concentrations of selected contaminants at the Agrico Chemical site (EPA 1987); AWQC for the protection of freshwater aquatic life (EPA 1986); solid concentrations in mg/kg and water concentrations in µg/l.

Contaminant	Gelatinous Waste	Surface Water	AWQC	
	Material	Samples	Acute	Chronic
aluminum	1,900	35,000	N/D	N/D
barium	46	38	N/D	N/D
chromium	23	15	16	11
fluoride	58,000	135,000	N/D	N/D
lead	130	<30	82*	3.2*
mercury	0.36	<0.5	2.4	0.012
strontium	130	960	N/D	N/D
zinc	20	1,100	120*	110*

* Hardness-dependent (based on 100 mg/l CaCO₃)
N/D: Criteria not determined.

NOAA Trust Habitats and Species in site Vicinity

Though wetland habitat has been significantly reduced, commercially important species found in Pensacola Bay are also present in Texar Bayou (Table 2). Blue crab, shrimp, striped mullet, and gulf flounder use the bayou as nursery and adult habitat. Many of the fish species are recreationally harvested from the bayou. Eastern oysters are found along the outer Pensacola Bay portions of the bayou. Pensacola Bay supports a significant blue crab and shrimp fishery (Ray 1989).

Table 2. NOAA trust resource use of Texar Bayou and Pensacola Bay (USFWS 1982).

Species	Texar Bayou	Pensacola Bay
INVERTEBRATES		
blue crab	A,N,R	A,C,R,S
eastern oyster	A,N,R	A,C,N,R,S
shrimp	A,N,R	A,C,R,S
FISH		
Atlantic croaker	A,N,R	A,C,N,R,S
Atlantic sturgeon		M
black drum	A,N,R	A,C,N,R,S
gulf flounder	A,N,R	A,C,N,R,S
red drum	A,N,R	A,C,N,R,S
sand seatrout	A,N,R	A,C,N,R,S
sheepshead	A,N,R	A,C,N,R,S
spotted seatrout	A,N,R	A,C,N,R,S
striped mullet	A,N,R	A,C,N,R,S
MISCELLANEOUS		
Atlantic bottlenose dolphin		M
A: adult habitat C: commercial fishery R: recreational fishery M: migration corridor N: nursery S: spawning/mating		

Texar Bayou is bordered by residential housing and light industry, and is impacted by surface water runoff from these sources. The bayou has been closed periodically to swimming due to water quality problems; information is currently being gathered on the physical characteristics and biota present in Texar Bayou as part of a study of non-point source pollution in the bayou (Moshiri 1989). Texar Bayou is 6.5 km long with an average depth of 2.1 meters. Though much of the bayou's wetlands have been lost to development, some habitat does exist in its upper reaches. Both Texar Bayou and Pensacola Bay have little tidal variation and only minor flushing. During the summer months, low dissolved-oxygen levels occur (Ray 1989).

Response Category: Not Determined

Current Stage of Site Action: RI/FS Workplan

EPA Site Manager

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References

EPA. 1986. Quality Criteria for Water. Washington, D.C.: Office of Water Regulations and Standards, Criteria and Standards Division. EPA 440/5-86-001.

EPA. 1987. Hazardous Waste Site Investigation, Agrico Chemical Company site, Pensacola, Florida. Atlanta: U.S. Environmental Protection Agency, Region 4.

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