

**Atlas Tack Corporation  
Fairhaven, Massachusetts  
Region 1  
MAD001026319**

**Site Exposure Potential**

The Atlas Tack Corporation site covers five hectares in Fairhaven, Massachusetts (Figure 1). Since 1810, the facility has produced cut and wire tacks, steel nails, rivets, bolts, nuts, and screws. Discharges to the environment from these processes have occurred for 119 years. Waste quantities are unknown. During the 1940s, a lagoon was excavated for use as an acid neutralizing pond. Discharges to the lagoon stopped in 1978, but the lagoon and its contents remain. An unknown quantity of waste was disposed of in

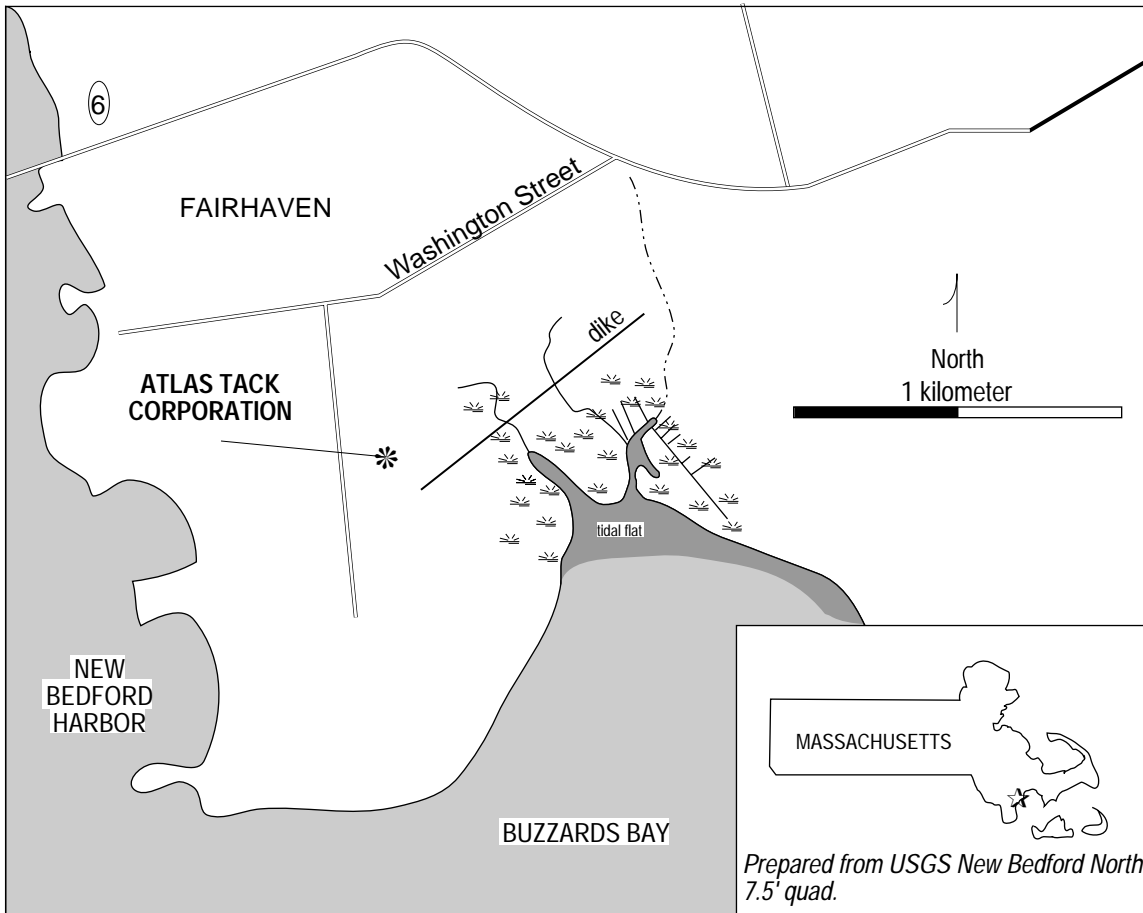


Figure 1. The Atlas Tack Corporation site in Fairhaven, Massachusetts.

the lagoon. From the 1970s until operations at the facility stopped in 1985, manufacturing was limited to shoe, garment, and industrial eyelets that were plated, painted, or plain (EPA 1987). Finishing operations included annealing, pickling, plating, enameling, and cleaning. The plating and pickling operations were reportedly discontinued in 1974 (NUS 1984).

The site is less than 3 meters above mean sea level on coastal lowland. The lagoon covers 900 m<sup>2</sup> and is believed to be unlined. A 4.5-meter high dike surrounds the lagoon. An

overflow pipe that discharges into the wetland is located in the dike wall. A tidal wetland borders the site to the east and south. Another dike cuts across the wetland 120 meters southeast of the site, dividing the wetland into two areas. The wetlands north and south of the dike cover 4 and 28 hectares, respectively. The wetland areas are connected by tidal creeks to Buzzards Bay, an embayment of the Atlantic Ocean, 500 meters south of the site (NUS 1984).

Possible contaminant migration pathways to the wetlands are groundwater flow, surface water runoff, direct discharge, and erosion and runoff of contaminated surface soils to the adjacent wetlands and Buzzards Bay.

### Site-Related Contamination

The contaminants at the site of concern to NOAA include cyanide, trace metals, and semi-volatile organic compounds. Concentrations of cyanide were measured in on-site groundwater and surface water from the lagoon at levels exceeding AWQC for the protection of saltwater aquatic life (Table 1). In addition, cyanide was measured in on-site sludge at concentrations of up to 37,200 mg/kg. Analyses indicated that 50 percent of the cyanide present in the lagoon sludge and groundwater was free cyanide.

Table 1. Maximum concentrations of contaminants at the Atlas Tack Corporation site (NUS 1984; SES 1987); natural soil; AWQC for the protection of saltwater aquatic life (EPA 1986); concentrations in sediment and soil in mg/kg and in water in µg/l.

Contaminant	On-site Soil	Off-site Sediment	Ground-water	Surface Water		Acute	AWQC Chronic
				Lagoon	Off-site		
<b>ORGANIC COMPOUNDS</b>							
<u>Semi-volatiles</u>							
toluene	N/A	3,090	173,025†	N/A	9,510†	6,300*	5,000*
<b>INORGANIC SUBSTANCES</b>							
<u>Trace Metals</u>							
arsenic	21	12	82	N/A	15	69	36
cadmium	1.05	1.11	210	4.1	19	43	9.3
chromium	2.3	180	N/A	N/A	N/A	1,100	50
copper	7,400†	2,040†	4,300†	210†	3,000†	2.9	2.9
lead	1340	430	N/A	N/A	N/A	140	5.6
mercury	0.79	0.22	1.8	0.56	2.1	2.1	0.025
nickel	700	120	8,950	120	200	75	8.3
zinc	11,000†	1,100†	48,000†	730†	1,780†	95	86
<u>Other</u>							
cyanide	810	N/A	1,040†	120†	N/A	1.0	1.0
† Estimated value							
N/A: Not available							
* LOEL							

The concentrations of a number of trace metals measured in groundwater and in surface water on- and off-site exceeded AWQC. Only one of the volatile organic compounds, toluene, was measured in on-site groundwater and off-site surface water at concentrations that exceeded LOEL (NUS 1984; EPA 1986; SES 1987). Off-site surface water and sediment samples were collected in the adjacent wetland area.

## NOAA Trust Habitats and Species in Site Vicinity

Aquatic habitats that support NOAA trust resources near the site include two wetlands and Buzzards Bay. The wetland area adjacent to the site is criss-crossed by mosquito control ditches and tidal creeks. Marsh cordgrass, spike grass, and salt meadow grass dominate the wetland. The wetlands north and south of the dike are connected via tidal creeks that are culverted under the dike. The vegetation in the southern wetland is dominated by spike grass, salt meadow grass, and marsh elder in the higher areas and by salt marsh cordgrass in the lower areas (SES 1987). The substrate in the two wetland areas is fine sand to mud. Wetlands water quality is degraded by discharge from a sewage plant with high concentrations of fecal coliform bacteria (Dirmano 1989).

Buzzards Bay is a major bay on the coast of Massachusetts. The water quality in the bay, up to 2.5 km from New Bedford Harbor, is degraded by PCB contamination in the harbor and high concentrations of fecal coliform bacteria. The harbor is 0.9 km east of the site. The rest of the bay has been classified by the Massachusetts Division of Water Pollution as class SA coastal water, suitable for high water quality use (NUS 1984; Dirmano 1989).

The wetland areas and Buzzards Bay contain a number of NOAA trust species, including demersal fish such as American eel, flounder, and tautog, and anadromous fish such as American shad, striped bass, and alewife (Table 2). Juvenile stages of flounders and

Table 2. NOAA trust resource use of wetlands next to the Atlas Tack site and of Buzzards Bay (USFWS 1980; Dirmano 1989).

Species	Wetland areas	Buzzards Bay
<b>INVERTEBRATES</b>		
blue crab	S,N,A,R	S,N,A,R
hard clam	S,N,A,R	S,N,A,R,C
soft shell clam	S,N,A,R	S,N,A,R
<b>FISH</b>		
alewife		A
American eel	A	A
American shad		A
Atlantic cod		S,N,A
Atlantic mackerel		S,N,A
Atlantic silverside	N	S,A
Atlantic tomcod		S,N,A
black sea bass		S,N,A
blueback herring		A
bluefish		S,N,A,R,C
mullet	N	S,A
pollock		S,N,A
striped bass		A
summer flounder	N	S,A
winter flounder	N	S,A
yellowtail flounder	N	S,A

S: Spawning area; N: Nursery area; A: Adult area; R: Recreational fishery; C: Commercial fishery

mullet use the wetland areas as a nursery. Most estuarine fish migrate onto tidal flats and into the tidal creeks and wetland vegetation during flood tides to feed. There are recreational fishery for clams and blue crab throughout the wetland areas and in Buzzards Bay. There is also a major recreational fishery of bluefish along the Buzzards Bay shoreline. Commercial fishery for finfish has been banned in New Bedford Harbor due to

the PCB contamination in the harbor. Commercial fishery for clams has been banned in the outer portion of the harbor up to 2.5 km offshore due to high concentrations of fecal coliform bacteria. There are extensive commercial fishery for hard clams and finfish beyond this boundary (Dirmano 1989).

**Response Category:** Undetermined

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

**EPA Site Manager**

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**References**

Dirmano, F., fishery biologist, Massachusetts Division of Marine Resources, Boston, personal communication, January 9, 1989.

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 Ranking Scoring Package, Atlas Tack Corporation, Fairhaven, Massachusetts. Boston: U.S. Environmental Protection Agency, Region 1.

NUS Corporation. 1984. Site Inspection Atlas Tack Corporation Fairhaven, Massachusetts. Boston: U.S. Environmental Protection Agency, Region 1. TDD NO. F1-8403-01A.

Sanford Ecological Services (SES) Inc. 1987. New Bedford Harbor Superfund Project Wetland Assessment. Boston: U.S. Environmental Protection Agency, Region 1.

USFWS. 1980. Atlantic coast ecological inventory: Providence. Washington, D.C.: U.S. Fish and Wildlife Service. 1:250,000 scale map.