

**Sealand Limited
Mount Pleasant, Delaware
Region 3
DED981035520**

Site Exposure Potential

From 1971 to 1979, Adams Laboratory operated a rendering plant on the Sealand Limited site in Mount Pleasant, Delaware (Figure 1). In 1979, the property was cleaned up by Conrail and left vacant until 1982, when it was used as a creosote manufacturing plant under the name Sealand Limited and Oil Industry. The facility was also used to store coal tar, gas tar, and ink oil wastes for recycling. In 1983, after the facility was abandoned with all the chemical wastes left in storage on the site, the Delaware Department of Natural Resources and Environmental Control found that many of the storage tanks were leaking creosols, solvents, and other substances containing PAHs. EPA used CERCLA funds to remove the hazardous chemicals and cap the site with a layer of clay.

The Sealand Limited site is on 0.8 hectares of relatively level ground in a primarily agricultural and residential area of northern Delaware. The site includes a concrete slab, a one-story building, an abandoned rail terminus, old storage tanks, and miscellaneous debris.

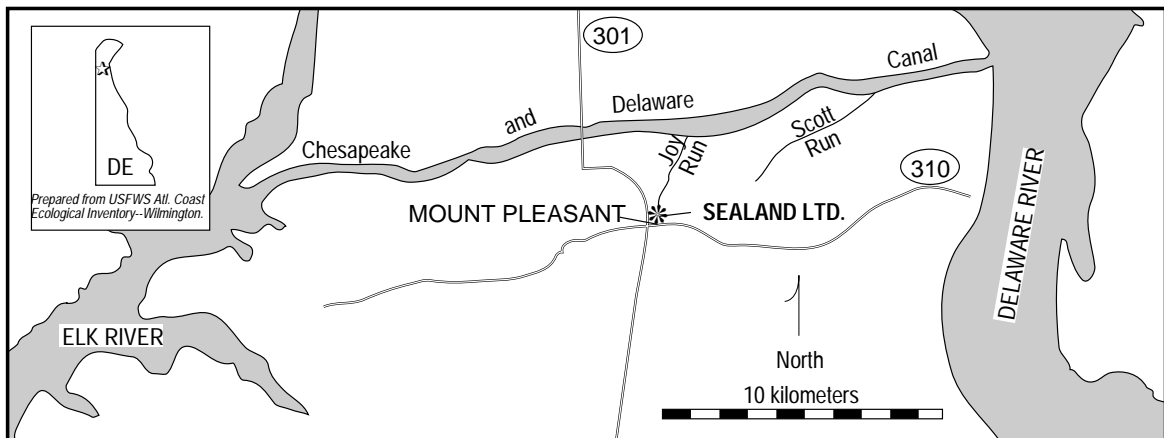


Figure 1. The Sealand Limited site in Mount Pleasant, Delaware.

Joy Run, a small, continuously flowing, low-gradient creek, flows from the Sealand Limited site northward for 3 km before discharging into the Chesapeake and Delaware (C & D) Canal. This canal connects Chesapeake Bay with the Delaware River. Soils on the site are permeable and groundwater is shallow (1-3 meters below the surface). Groundwater flow is towards Joy Run and probably discharges into the creek.

Possible contaminant migration pathways to NOAA trust resources are groundwater and surface water runoff to Joy Run and the C & D Canal.

Site-Related Contamination

PAHs, trace metals, and PCBs are contaminants of concern to NOAA (Table 1). PAHs were the dominant chemicals detected at the site. These compounds are major constituents of coal tars, creosote, and many petroleum-based substances. PCBs and the trace metals

chromium, nickel, and lead were also detected in groundwater and soils on-site. Available data indicate that off-site groundwater has not been contaminated by site-related chemicals, but extensive sampling of off-site groundwater has not yet been conducted (BCM 1988).

Table 1. Maximum concentrations of selected contaminants at the Sealand Limited site (BCM 1988); AWQC for the protection of freshwater aquatic life (EPA 1986); concentrations for water in µg/l and for soil in mg/kg.

Contaminants	On-site	On-site	Off-site	AWQC	
	Soil	Groundwater	Groundwater	Acute	Chronic
ORGANIC COMPOUNDS					
<u>Pesticides/PCBs</u>					
PCBs	21.8	ND	ND	2.0	0.014
<u>Volatile</u>					
benzene	0.017	5.5	ND	5,300.0*	N/A
toluene	0.081	5.5	ND	17,500.0*	N/A
<u>Semi-volatile</u>					
anthracene	710.0	10.1	ND	N/A	N/A
benzo(a)anthracene	1110.0	11.2	ND	N/A	N/A
benzo(a)pyrene	530.0	11.7	ND	N/A	N/A
2-methylnaphthalene	N/A	18.4	ND	N/A	N/A
naphthalene	1,820.0	18.1	ND	2,300.0*	620.0*
phenanthrene	4,260.0	30.9	ND	N/A	N/A
phenol	0.69	63.0	5.0	10,200.0*	2,560.0*
pyrene	2,080.0	28.9	ND	N/A	N/A
INORGANIC SUBSTANCES					
<u>Trace metals</u>					
chromium	53.0	<10.0	ND	16.0	11.0
copper	N/A	<25.0	ND	18.0†	12.0†
lead	960.0	<5.0	ND	82.0†	3.2†
nickel	46.0	1,200.0	ND	1,400.0†	160.0†
zinc	N/A	125.0	674.0	120.0†	110.0†
N/A: Not available					
ND: Not detected					
* LOEL					
† Hardness-dependent (based on 100 mg/l CaCO ₃)					

NOAA Trust Habitats and Species in Site Vicinity

The primary habitat of concern to NOAA is the C & D Canal, an artificial system that connects the Delaware River with the Elk River, an extension of Chesapeake Bay. The canal is used mainly for navigation, although there is some local fishing, recreational boating, and swimming. The canal is a tidally influenced, brackish water system with a salt concentration of between 0 and 2 ppt. Flow in the canal is minimal and is generally believed to flow from west to east, although tidal action may alter flow direction. The canal is 12 meters deep with sides of rip-rap (Miller 1988).

Eight species of anadromous fish use the C & D Canal as spawning and nursery habitat (Table 2). Striped bass, which spawn in the western end of the canal, are of special concern since their populations have declined over the years; currently, there is a moratorium on their collection in both Maryland and Delaware. American shad and Atlantic sturgeon are protected under New Jersey State legislation. The Chesapeake and Delaware Canal connects the Delaware River with the Elk River. Both of these waterways are important resource areas that have extensive fisheries and associated habitats.

Table 2. NOAA trust resource use of the Chesapeake and Delaware Canal and adjacent waters (USFWS 1980; Research Planning Institute 1985).

Species	Spawning Area	Nursery Area	Adult Habitat	Migratory Route	Recreational Fishery	Commercial Fishery
alewife		X		X	X	X
American eel			X		X	X
American shad			X	X	X	X
Atlantic sturgeon			X	X		
blueback herring		X		X	X	X
hickory shad		X		X	X	X
striped bass	X	X		X		
white perch		X		X	X	X

Response Category: Federal Enforcement Lead

Current Stage of Site Action: Remedial Investigation

EPA Site Manager

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References

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