

NOAA Hazardous Waste Site Report

Tybouts Corner Landfill (III-9)
New Castle County, Delaware
April 13, 1984

Location and Nature of Site:

The Tybouts Corner Landfill in New Castle County, Delaware, is about 52 acres in size, and located near the confluence of Pigeon Run Creek and Red Lion Creek (Figure 1).

The landfill was utilized by the New Castle County Department of Public Works as a municipal sanitary landfill for the disposal of municipal and domestic refuse from December 1968 until July 1971. Documents related to operations at the site indicate that industrial wastes were also disposed of during the active life of the landfill. These industrial wastes included trichloroethylene, vinyl chloride, 1,2-dichloroethane, benzene, and various other organic and inorganic chemicals.

Plans for the landfill indicate that no clay liner or other impervious material was placed below the fill and no impervious cap was placed on top of the fill following abandonment. The thickness of the fill ranges from approximately five to thirty feet.

Because of the type and construction of the landfill, the types of materials disposed at the landfill, and site-specific geologic and hydrogeologic characteristics of the landfill area, EPA has found the potential for contamination of air, soil, surface water and groundwater in and around the area to be significant.

Nearby hazardous waste sites of concern include the Old Brine Sludge Landfill (NOAA site III-8), which is 1.5 miles downstream of Tybouts on Red Lion Creek.

Proximity of Chemical Hazard to Marine Resources:

Pigeon Run Creek, which passes through the site, separates the eastern and western portions of the landfill. The landfill site is bordered on the south by Red Lion Creek of which Pigeon Run is a tributary. Red Lion Creek subsequently flows into a marsh on the west shore of Delaware Bay. Water quality surveys have been performed on the streams and marshes surrounding the landfill which indicate highly variable levels of organic compounds.

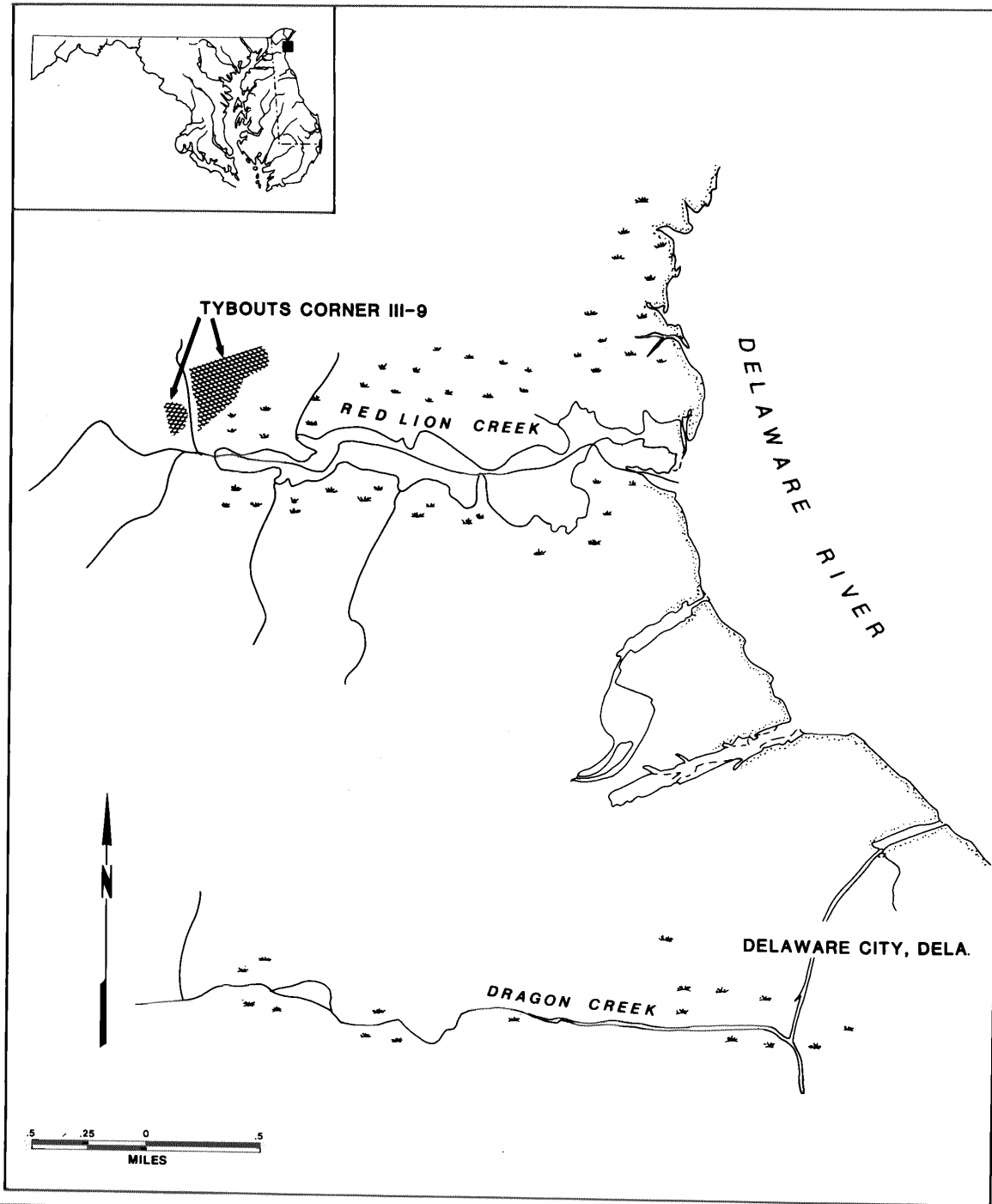


FIGURE 1. Site location.

Groundwater surveys have documented the contamination of shallow and deeper aquifers beneath the site and in off-site areas to the north, south and east, however, there is a possibility that some of the observed contamination may be associated with a 1982 spill of monochlorobenzene near the site, or effluent from the Old Brine Sludge site (III-8). The projected increase in groundwater usage could increase and/or accelerate contamination of the groundwater at greater distances from the site.

A study conducted for the Old Brine Sludge Landfill documents the water quality of Red Lion Creek and discusses the relationship of Tybouts Corner Landfill to the Creek. The results of this study are discussed in the Old Brine Sludge Landfill report (NOAA site III-8).

Marine Resources at Risk:

Red Lion Creek is a tributary of the Delaware River. The Delaware River and its tributaries provide significant habitat for a variety of finfish resources (see Table 1).

Table 1. Fishery Resources of Tidally Influenced Regions of the Delaware River (1, 2, 5)

Finfish Species	Adult Habitat	Spawning Area	Nursery Area	Comm. Fish.	Rec. Fish.	Migr. Route
<u>Anadromous</u>						
Alewife	x	x	x	x	x	x
Blueback herring	x	x	x	x	x	x
American shad	x	x	x	x	x	x
Shortnose sturgeon						x
Atlantic sturgeon		x				
Striped bass		x	x	x	x	x
Gizzard shad	x	x	x			
<u>Non-anadromous</u>						
Atlantic menhaden			x			
White perch		x	x	x	x	x
Flounder	x					
Northern kingfish	x					
Bluefish			x			
Atlantic croaker			x			
Spotted seatrout					x	
Channel catfish	x					
White catfish				x	x	
Brown bullhead				x	x	
Bluegill	x				x	
Black crappie	x				x	

Anadromous fish migrate through the Delaware Bay estuarine system during the early spring on their way to freshwater spawning grounds. For most of the anadromous fish of the Delaware Bay, this occurs upstream of Burlington, New Jersey, although some spawning does occur in

freshwater tributaries (4). The adults return to the lower parts of Delaware Bay. Juvenile fish, hatched in the spring, remain in the upper parts of Delaware Bay until the late summer and early fall when they also migrate back into the lower parts of the Bay (3).

The Red Lion Creek watershed is located within two miles of known spawning grounds of the Atlantic sturgeon at Supawna Meadows National Wildlife Refuge. The Atlantic sturgeon is a species of special concern to the State of Delaware. This site is located along a major migratory route for anadromous fish including the shortnose sturgeon, a species of special federal concern.

Red Lion Creek has seasonal runs of striped bass and white perch that are caught by sport fishermen at the bridge on Highway 9.

This region of the Delaware River is unlikely to be an important nursery or spawning area for other anadromous fish due to the fairly high level of development in this area and to their preference for less saline waters for spawning.

Some tidal wetlands are present at the mouth of Red Lion Creek, and some species of fish may be harvested by recreational and commercial fishermen in the Delaware River adjacent to Red Lion Creek.

The Delaware Bay estuarine system is an important wintering area for many waterfowl and seabirds, particularly loons, grebes, and gannets. They tend to concentrate in coastal bays and wetland areas. Bald eagles nest at Augustine Wildlife Area and Appoquinimink Wildlife Area.

Several State and Federal Management Areas are located on the Delaware River in the vicinity of Red Lion Creek:

Chesapeake and Delaware Canal Wildlife Area	4 miles downstream
Augustine Wildlife Area	9 miles downstream
Ft. Mott State Park	3 miles downstream
Ft. Delaware State Park	1 mile downstream
Supawna Meadows National Wildlife Refuge	3 miles downstream
Appoquinimink Wildlife Area	12 miles downstream

Summary of Site-Related Actions:

A work plan to conduct a remedial investigation and feasibility study of alternatives was completed by the U.S. Environmental Protection Agency in August, 1983. This document summarizes the work of previous studies conducted by the University of Delaware, EPA, the State of Delaware, and private consultants. Water quality monitoring, both ground and surface, has been the primary focus of these studies. To date, no on-site soil analysis has been performed.

The Department of Justice, on behalf of EPA, has brought a Federal Civil Action seeking injunctive relief against parties responsible for wastes associated with the site.

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