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RECORD OF DECISION SUMMARY

NEW BEDFORD HARBOR/  
HOT SPOT OPERABLE UNIT

NEW BEDFORD, MASSACHUSETTS

APRIL 1990

U.S. ENVIRONMENTAL PROTECTION AGENCY  
REGION I

4

**RECORD OF DECISION  
REMEDIAL ALTERNATIVE SELECTION**

**Site Name and Location**

New Bedford Harbor/Hot Spot Area  
New Bedford, Massachusetts

**Statement of Purpose**

This Decision Document presents the selected remedial action for this Site developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA), and to the extent practicable, the National Contingency Plan (NCP), 40 CFR Part 300 et seq., 50 Federal Register 47912 (November 20, 1985).

The Commonwealth of Massachusetts concurs with the selected remedy. A copy of the concurrence letter is included as Appendix C.

**Statement of Basis**

This decision is based on the Administrative Record which was developed in accordance with Section 113 (k) of CERCLA and which is available for public review at the information repositories located at the New Bedford Free Library, in New Bedford, Massachusetts, and at the EPA offices at 90 Canal Street in Boston, Massachusetts. Appendix B to this document identifies the items contained in the Administrative Record upon which the selection of this remedial action is based.

**Assessment of the Site**

Actual or threatened releases of hazardous substances from this portion of the Site, if not addressed by implementing the response action selected in this Record of Decision, may present an imminent and substantial endangerment to public health, welfare or the environment.

**Description of the Selected Remedy**

The selected remedial action for the New Bedford Site/Hot Spot Area is the Hot Spot Operable Unit, the first of two operable units planned for the New Bedford Harbor Superfund Site. The Hot Spot Operable Unit consists of source control measures, which will also control the continuing migration of contaminants from the Hot Spot to other portions of the Site. The major components of the Hot Spot remedial measures include:

- Dredging. Approximately 10,000 cubic yards of contaminated sediments will be removed using a cutterhead dredge. Dredging will occur in the Hot Spot Area at depths of up to four feet to remove sediments with PCB concentrations of 4,000 ppm or greater. Various control options will be used to minimize and control sediment resuspension.
- Transportation and Dewatering. The dredged sediments will be transported to the Pilot Study cove area by a floating hydraulic pipeline, where the sediments will be dewatered. Effluent produced during the dewatering process will be treated to reduce PCBs and heavy metals using best available control technology prior to discharge back into the Harbor.
- Incineration. The dewatered sediments will be incinerated in a transportable incinerator that will be sited at the Pilot Study cove area. The extremely high temperatures achieved by the incinerator will result in 99.9999% destruction of PCBs. Exhaust gases will be passed through air pollution control devices before being released into the atmosphere to ensure that appropriate health and safety and air quality requirements are met.
- Stabilization. Following incineration, the Toxicity Characteristic Leaching Procedure (TCLP), a leaching test, will be performed on the ash to determine if it exhibits the characteristic of toxicity and is, therefore, considered a hazardous waste under the Resource Conservation and Recovery Act (RCRA). If the TCLP test reveals that the ash is a RCRA hazardous waste, the ash will be solidified such that metals no longer leach from the ash at concentrations that exceed the standards set forth for determining the toxicity of a material.

During remedial activities, (solidified) ash will be temporarily stored in an area adjacent to the existing Confined Disposal Facility (CDF), a containment structure built on the New Bedford Harbor shoreline during previous Site studies. Following completion of the remedial activities, the (solidified) ash will be stored in the secondary cell of the CDF. Storage of the treated material will comply with the solid waste requirements. Ultimate disposition of this material will be addressed in the second operable unit for the Site.

Sediment removal and incineration will provide significant progress toward long-term protection of public health and the environment. Incineration is a proven technology that permanently destroys PCBs and is readily implementable for this volume of material. The selected remedy will permanently reduce the mobility, toxicity and volume of PCBs in the Hot Spot and will also reduce the amount of PCBs and heavy metals affecting the remainder of the Harbor. Short-term protection will be

achieved by engineering controls to limit the emission of contaminants during excavation and treatment.

This interim action will comply with levels or standards of control equivalent to legally applicable or relevant and appropriate standards, requirements, criteria, or limitations (ARARs) specific to this action, including but not limited to, operation of the incinerator. However, this interim action will not attain certain levels or standards of control that might be ARARs. This interim remedial action is only part of a total remedial action that will attain ARARs when completed.

#### Declaration

This interim action is protective of human health and the environment, complies with Federal and State applicable or relevant and appropriate requirements directly associated with this action, and is cost-effective. This action utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable, and this action satisfies the statutory preference for treatment as a principal element of the remedy. This action does not, however, constitute the final remedy for the entire New Bedford Harbor Site. Subsequent actions are planned to address fully the remaining threats posed by this Site.

Date

April 6, 1990

Julie Belaga  
Julie Belaga  
Regional Administrator  
EPA Region I

**ROD DECISION SUMMARY  
NEW BEDFORD HARBOR HOT SPOT OPERABLE UNIT**

**I. SITE NAME, LOCATION AND DESCRIPTION**

New Bedford, Massachusetts, is a port city located at the head of Buzzards Bay, approximately 55 miles south of Boston (Figure 1). New Bedford is nationally known for its role in the development of the whaling industry in the early 1800's. Today, the harbor is home port to one of the largest commercial fishing fleets in the United States.

In the course of developing Feasibility Studies (FS) for the Site, EPA divided the Site into three geographical study areas: the Hot Spot Area, the Acushnet River Estuary, and the Lower Harbor and Upper Buzzards Bay (Figure 2). The Hot Spot is an area of approximately five acres located along the western bank of the Acushnet River Estuary, directly adjacent to an electrical capacitor manufacturing facility, the Aerovox facility. EPA has defined the Hot Spot as those areas where the sediment PCB concentration is 4,000 parts per million (ppm) or greater. PCB concentrations in this area range from 4,000 ppm to over 200,000 ppm. Contamination at levels of 4,000 ppm and greater are found at depths up to four feet, but for the most part, within the top two feet. In addition to PCBs, heavy metals (notably cadmium, chromium, copper, and lead) are found in the sediment. The remedial volume for this area is approximately 10,000 cubic yards of sediment, and it contains approximately 48 percent of the total PCB mass in sediment from the Estuary portion of the Site, and approximately 45 percent of the total PCB mass in sediment from the entire Site. Refer to Sections IV and V for further discussion of the Hot Spot, including the scope and role of the Hot Spot operable unit and site characteristics. The remainder of the Site to be addressed in a subsequent operable unit is described below.

The Acushnet River Estuary is an area of approximately 230 acres (excluding the Hot Spot), extending from the Wood Street Bridge to the north, to the Coggeshall Street Bridge to the south. Sediment PCB concentrations in this area (excluding the Hot Spot area) range from below detection to approximately 4,000 ppm. Sediment metals concentrations range from below detection to over 7,000 ppm.

The Lower Harbor area consists of approximately 750 acres, extending from the Hurricane Barrier, north to the Coggeshall Street Bridge. Sediment PCB concentrations range from below detection to over 100 ppm. Sediment metals concentrations range from below detection to approximately 3,000 ppm.

The Upper Buzzards Bay portion of the Site area extends from the Hurricane Barrier to the southern boundary of Fishing Closure Area III, and includes an area of approximately 17,000 acres. Sediment PCB concentrations here range from below detection up to 100 ppm in localized areas along the New Bedford shoreline near combined sewer and stormwater outfalls.

A more complete description of the Site can be found in Section 2 of the Feasibility Study.

## II. SITE HISTORY AND ENFORCEMENT ACTIVITIES

### A. Response History

In 1976, the U.S. Environmental Protection Agency (EPA) conducted a New England-wide survey for polychlorinated biphenyls (PCBs). During this survey, high levels of PCB contamination were discovered in the marine sediment over a widespread area of New Bedford Harbor. In addition to PCBs, heavy metals (notably cadmium, chromium, copper, and lead) were found in the sediment. The survey and subsequent field studies also revealed that PCB contamination was not limited to sediment. Marine biota were also affected. Concentrations of PCBs in fish and shellfish were found to be in excess of the U.S. Food and Drug Administration (FDA) tolerance limit of 5 parts per million (ppm) for edible tissue. (FDA has subsequently reduced the PCB tolerance level to 2 ppm in 1979.) In 1977, the Massachusetts Department of Public Health (DPH) issued a public warning against consumption of shellfish or bottom fish from within the harbor and eastern sections of Buzzard's Bay to protect public health.

As a result of the widespread PCB contamination and the accumulation of PCBs in marine biota, the Massachusetts Department of Public Health established three fishing closure areas in New Bedford Harbor in September 1979 (Figure 3). These closures remain in effect. Area I is closed to all fishing, including finfish, shellfish, and lobsters. Area II is closed to the taking of lobsters and bottom-feeding finfish, such as eels, flounders, scup, and tautog. Area III is closed to lobstering only. Closure of the New Bedford Harbor and upper Buzzards Bay area to lobstering has resulted in the loss of approximately 18,000 acres of productive lobstering ground.

Two electrical capacitor manufacturing facilities, the Aerovox facility and the Cornell-Dubilier Electronics facility located on the Harbor, were major users of PCBs from the time their operations commenced in the 1940s until 1978, when EPA banned the use of PCBs. These manufacturers released PCBs onto the adjoining shoreline mudflats of the plants and into New Bedford

Harbor, through discharged wastewaters containing PCBs and through alleged intentional dumping.

The New Bedford Harbor Site was added to the EPA Superfund National Priorities List (NPL) in July 1982. Also in 1982, the Coast Guard placed warning signs along the shoreline of the Site. These signs, written in both English and Portuguese, served to notify the public of the restrictions against fishing and swimming. Additional warning signs were installed by EPA and the City of New Bedford in 1984 and 1985.

### **Remedial Studies**

Numerous investigations have been conducted over the last decade to physically characterize the New Bedford Harbor Site, to determine the extent of PCB and metals contamination, and to assess the fate and transport of these contaminants. The major studies are summarized below. Other investigations, which were used as reference material for these studies, have been made publicly available in the Administrative Record.

#### Remedial Action Master Plan (1983)

The results of studies completed through early 1983 were compiled into a Remedial Action Master Plan (RAMP) for the Site in May 1983. This assessment included an area-wide air monitoring program; a sediment PCB profile for the Estuary and the Harbor; biota sampling for the Estuary, Harbor and Bay; and a study of the contamination within the New Bedford sewer system. The plan included recommendations for studies to further define the nature and extent of contamination.

#### Acushnet River Estuary FS (1984)

The results and recommendations of the RAMP led to a "fast-track" Feasibility Study (FS) for the 200-acre estuary area north of the Coggeshall Street Bridge. Four of the five remedial options presented in this FS involved dredging of the contaminated sediments. During the public comment period, concerns were raised surrounding the ability to dredge the contaminated sediments without causing additional impacts, both short- and long-term. As a result, the remedy selection process was extended until studies could be completed to address these concerns.

#### Engineering Feasibility Study (1989)

To answer questions regarding the potential impacts of dredging the contaminated sediment, the Corps of Engineers was asked to complete a dredging and disposal study. This

Engineering Feasibility Study (EFS) was conducted by the Corps' Waterways Experiment Station. The EFS consisted of bench and field scale experiments to address sediment and contaminant releases during dredging, efficacy of shoreline and aquatic disposal locations, leachate production from disposal facilities, and physical/chemical sediment profiles.

#### Pilot Dredging and Disposal Study (1989)

The Pilot Dredging and Disposal study, an outgrowth of the EFS, was a field test of three dredges and two disposal techniques for 9,000 cubic yards of sediment from the Estuary. The focus of this study was an attempt to verify whether the dredging and disposal techniques could be implemented without causing releases that could adversely impact public health or the environment. Additionally, the study was used to determine the optimal operating parameters for the dredging equipment and to develop monitoring programs to detect and evaluate contaminant releases.

#### Hot Spot Feasibility Study (1989)

The Hot Spot Feasibility Study was completed for the Hot Spot Area of the Site. The response objectives and a summary of the alternatives evaluated are provided in Sections VIII and IX of this document.

#### Overall Feasibility Study (ongoing)

This feasibility study was designed to combine the previous studies described above and to address the Estuary and Lower Harbor/Bay areas of the New Bedford Site. This study is scheduled to be released in June 1990.

### **B. Enforcement History**

A number of enforcement actions have been taken related to PCB contamination of New Bedford Harbor and adjacent properties. These actions are briefly summarized below.

Cornell-Dubilier Electronics, Inc. (Cornell-Dubilier) and EPA signed a consent agreement and final order under the Toxic Substances Control Act (TSCA) in May 1982 (TSCA Docket No. 81-1001). This agreement addressed PCB handling procedures, discharges and releases to the municipal sewer system and surrounding areas, and groundwater monitoring requirements. Subsequently, EPA issued an administrative order to Cornell-Dubilier under section 106 of CERCLA in September 1983 (Docket

**FIGURE 1  
SITE LOCATION MAP**

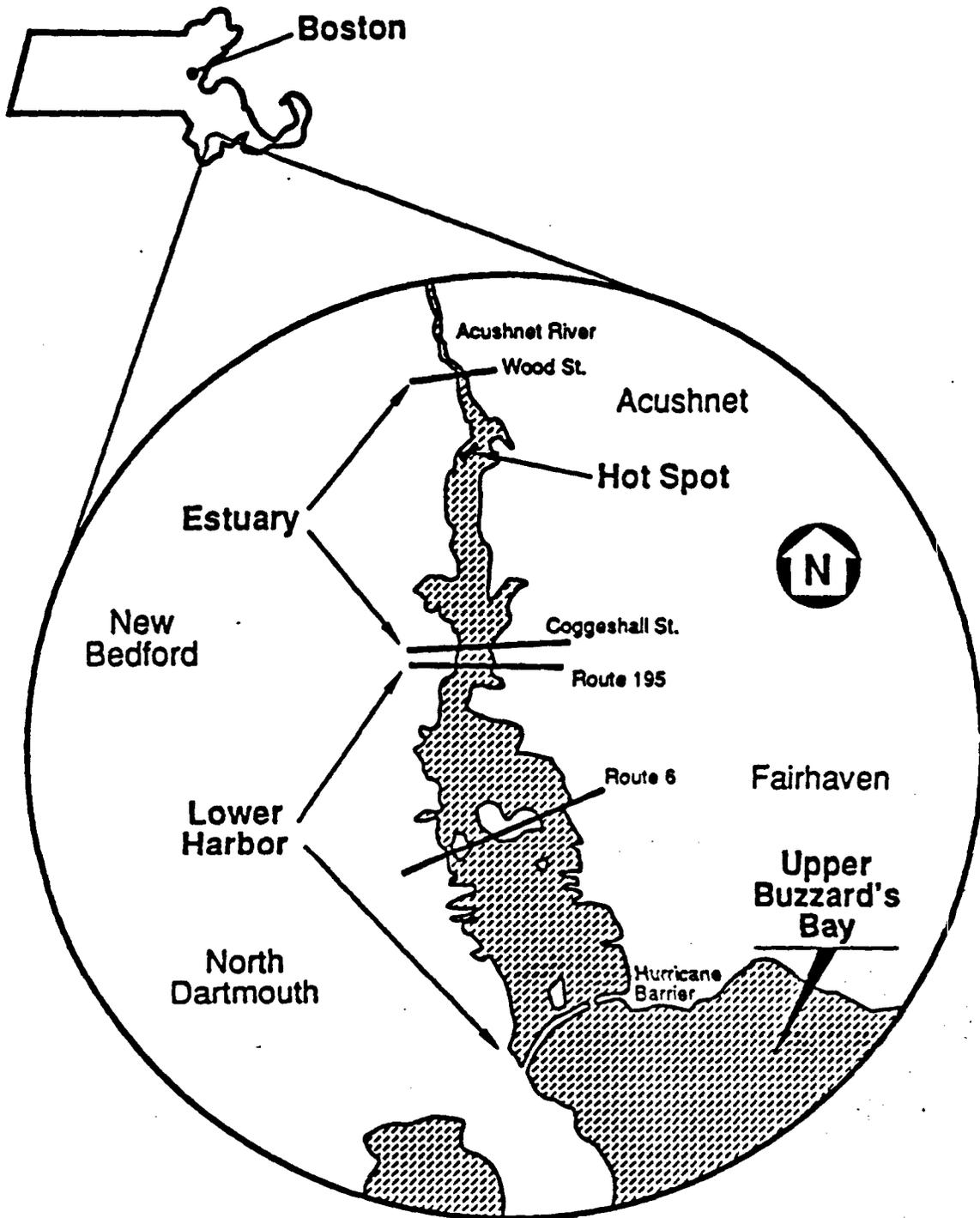




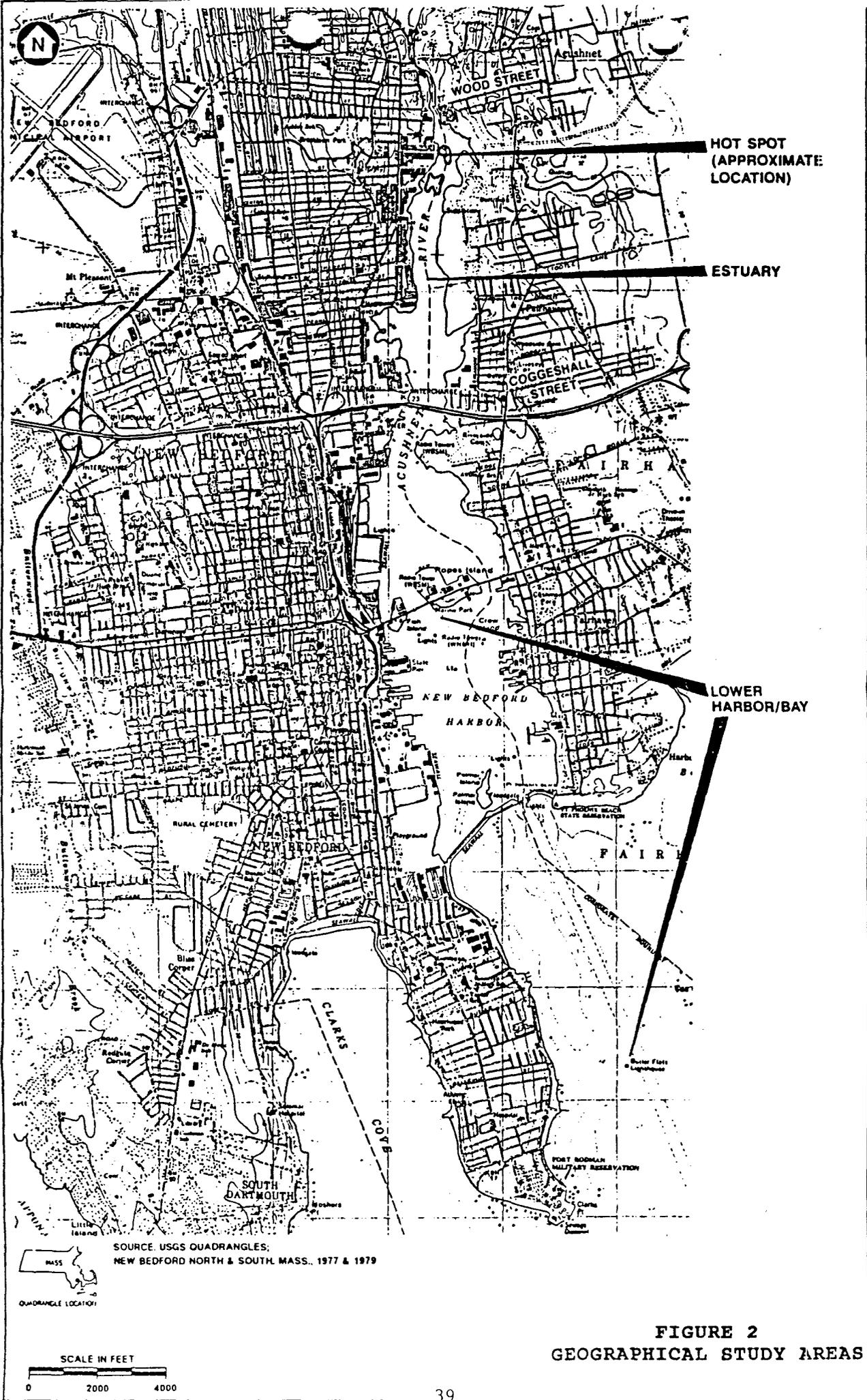
FIGURE 5

INTERPRETATION OF  
 TOTAL PCB CONCENTRATIONS\*  
 DEPTH: ZERO TO 12 INCHES  
 HOT SPOT FEASIBILITY STUDY  
 NEW BEDFORD HARBOR

\* SUM OF AVAILABLE AROCHLOR DATA



15

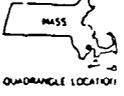


HOT SPOT  
(APPROXIMATE  
LOCATION)

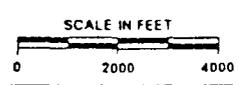
ESTUARY

LOWER  
HARBOR/BAY

SOURCE: USGS QUADRANGLES;  
NEW BEDFORD NORTH & SOUTH, MASS., 1977 & 1979



QUADRANGLE LOCATION



**FIGURE 2**  
**GEOGRAPHICAL STUDY AREAS**



<u>AREAS</u>	<u>DESCRIPTION</u>
AREA I	WATERS CLOSED TO ALL FISHING
AREA II	WATERS CLOSED TO THE TAKING OF LOBSTERS, EELS, FLOUNDERS, SCUP, AND TAUTOG
AREA III	WATERS CLOSED TO LOBSTERING ONLY

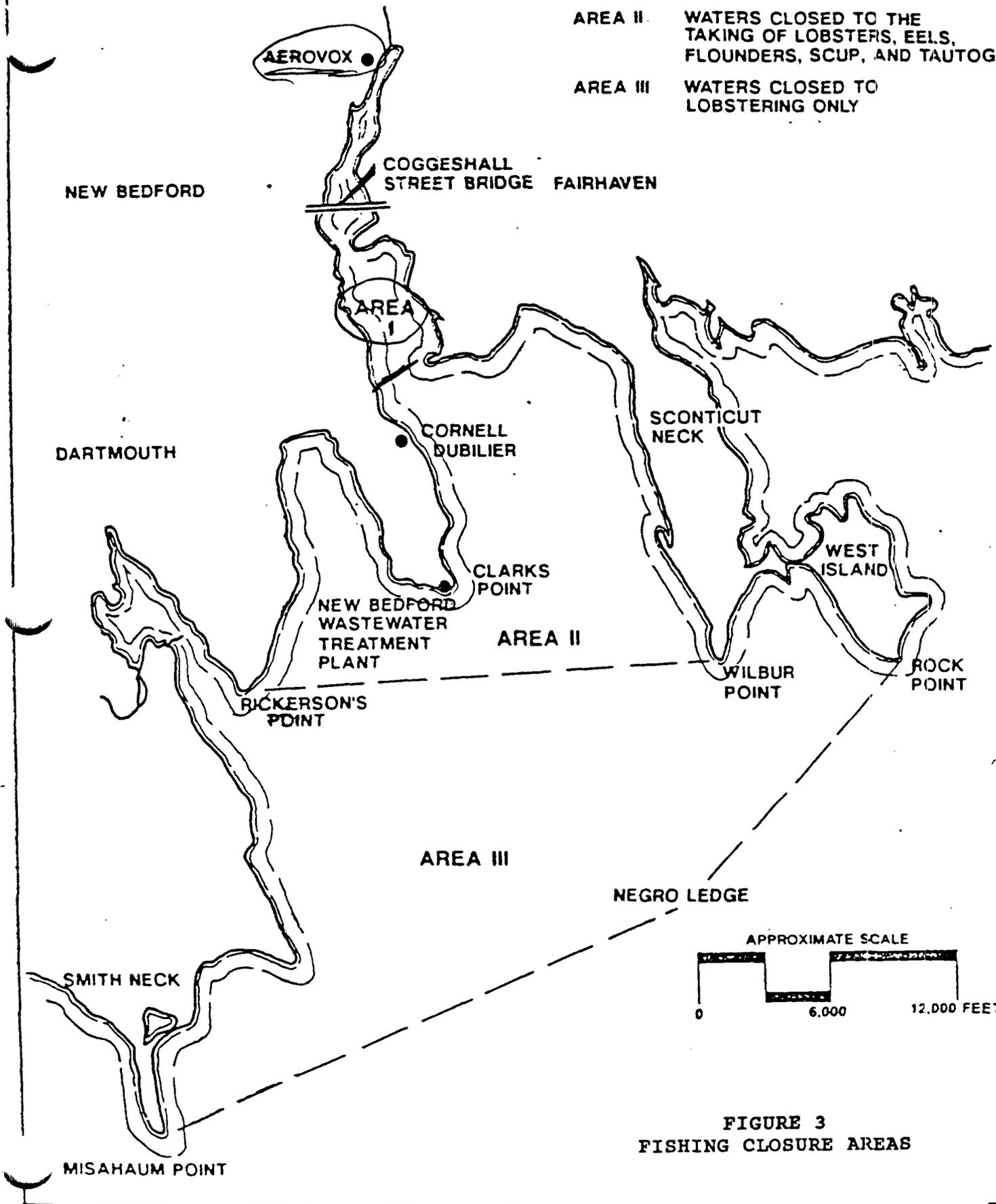


FIGURE 3  
FISHING CLOSURE AREAS