



US Army Corps  
of Engineers  
New York District  
26 Federal Plaza Room 2119  
New York, N.Y. 10278-0090  
ATTN: Harbor Programs Branch  
Mr. Bryce Wisemiller

## PUBLIC NOTICE

**In replying refer to:**

Public Notice Number: FP63-PJCA2A-2004  
Issue Date: 10 November 2004  
Expiration Date: 9 December 2004

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**NEW YORK HARBOR AND ADJACENT CHANNELS  
PORT JERSEY, NEW JERSEY  
FEDERAL NAVIGATION PROJECT  
CONTRACT 2, AREA 2A**

**TO WHOM IT MAY CONCERN:**

Pursuant to Section 404 of the Federal Water Pollution Control Act (amended in 1977 and commonly referred to as the Clean Water Act, 33 U.S.C. 1344), Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403), and Section 103 of the Marine Protection, Research, and Sanctuaries Act (MPRSA) of 1972 (commonly referred to as the Ocean Dumping Act, 33 U.S.C. 1413), this Public Notice serves as the U.S. Army Corps of Engineers (New York District) notification and request for comments relating to the potential placement of HARS suitable material within the second construction contract, contract area 2A of the New York Harbor and Adjacent Channels, Port Jersey Channel Project, New Jersey, as authorized by Section 202(b) of the Water Resources Act of 1986, Public Law 99-662, as amended by, Section 337 of the Water Resources Development Act of 1999, Public Law 106-53. This will allow tested suitable pre-industrial, Holocene red-brown silty-sand material dredged as part of the second contract to be placed at the Historic Area Remediation Site (HARS) – see below for further information.

**ACTIVITY:** Constructing the federal New York Harbor and Adjacent Channel, Port Jersey Channel, New Jersey Project, which was authorized by Section 202(b) of the Water Resources Act of 1986, Public Law 99-662, as amended by, Section 337 of the Water Resources Development Act of 1999, Public Law 106-53. The proposed action is to place approximately 95,000 cubic yards of Holocene red-brown silty-sand that has been determined to be suitable Remediation Material for placement at the HARS as part of the second construction contract for the federal Port Jersey Channel Project.

**LOCATION:** Port Jersey Channel, Western Side of the Upper Bay of New York Harbor. The existing non-Federal Port Jersey Channel runs from its confluence with Anchorage Channel in the Upper Bay of New York Harbor west approximately 2.1 miles to the head of navigation in

Bayonne, New Jersey in between Port Jersey and the Peninsula at Bayonne, New Jersey (formerly known as the Military Ocean Terminal, Bayonne).

At an approximate construction cost of \$120,000,000, the Port Jersey Channel Project was justified based upon the transportation efficiencies gained through the use of larger and/or more fully loaded container vessels that require a deeper draft calling upon the existing container facility of Global Terminal and Container Service, Inc. located in Port Jersey Channel. In the Limited Reevaluation Report prepared by the New York District, dated January 1998, the average net benefits to the United States from the construction of the Port Jersey 41' Channel were estimated at over \$32,000,000 per year. When amortized over the project life, these benefits outweigh the costs of the project by a ration of approximately 4.9 to 1. Additional container facilities that would use the Port Jersey Channel are now under development by various non-federal interests. If and when these facilities are developed, they would further increase these net benefits to the nation.

A Project Cooperation Agreement to construct the Port Jersey Channel Project was executed on June 23, 2002 between the US Army Corps of Engineers and two non-federal project sponsors, the State of New Jersey Department of Transportation/Office of Maritime Resources (primary sponsor) and the Port Authority of New York and New Jersey (limited sponsor).

#### **DESCRIPTION OF PLANNED ACTION:**

The Project provides for deepening the existing non-federal Port Jersey Channel to a navigable depth of 41 feet below mean low water (MLW) from its confluence with the Anchorage Channel west approximately 2.1 miles to the end of channel located between Port Jersey in Jersey City and the former Military Ocean Terminal, Bayonne, New Jersey. Due to the hard underlying material, the channel will be constructed to 43 feet below MLW, with up to an additional 1.5 feet allowable pay overdepth.

Construction of the channel is planned to be accomplished in three contracts (see figure 1.). The first contract was completed in May 2004. The second contract was awarded in February 2004 and includes an option for suitable dredged material to be placed at the HARS as Remediation Material, as opposed to placement at a permitted upland site. Test results for the 95,000 cubic yards of pre-industrial, Holocene fluvial red-brown sandy material to be dredged from Contract Area 2A will be further described later in this Public Notice. The volumes of Holocene silt, and fluvial red-brown sandy material listed in this section are estimates to a total project depth of -44.5 feet MLW.

The third construction contract is expected to be advertised in 2005 and will be subject to a separate Public Notice.

#### **Contract Area 2A**

Contract Area 2A contains Holocene black silt overlying hard Holocene red-brown silty-sand material that are to be dredged to a depth of -43 feet for the 41-foot project depth (i.e., design depth of -41 plus an additional -2 feet for safety due to the underlying hard material). Beyond these required depths, an additional 1.5 feet of dredging depth is allowable so the contractor can achieve the required depth. Figure

2 illustrates a cross-section of this material. The following table summarizes the volumes of material proposed to be dredged from Contract Area 2A of the Port Jersey Channel:

**Table 1**

**Approximate Material Volume Estimates for Contract Area 2A of the Port Jersey Channel  
(to a total depth of -44.5')**

	<b>Upland and/or NBCDF Holocene Black Silt Sediments (CY)</b>	<b>HARS Suitable Holocene, Red-Brown Sandy Sediments* (CY)</b>	<b>Total Material Volume (CY)</b>
<b>Contract Area 2A</b>	679,200	95,000	774,200
* This material has undergone testing for potential HARS placement and was determined by the USEPA, Region 2 and the USACE, NY District to be suitable for placement as Remediation Material at the HARS by joint memorandum dated October 23, 2003. See the "Summary of Testing Results" section of this Public Notice for additional information.			

The US Environmental Protection Agency (USEPA), Region 2 and the US Army Corps of Engineers (USACE), New York District have separately evaluated the Holocene, red-brown sandy material from this contract area. This evaluation has shown that this material is suitable for use as HARS Remediation Material. The purpose of this Public Notice is to solicit comments regarding the proposed placement of this material at the HARS. These comments, along with all available technical data/information, will form the basis of a determination of whether this proposed action is in the public interest. The HARS (figures 3 & 4), located in the Atlantic Ocean off the coasts of New York and New Jersey, is described later in this notice.

With processing to stabilize and solidify the sediments, the Holocene black silt is being placed upland at the FDP Enterprises Site, the New Jersey Meadowlands Commission 1E Landfill, or the EnCap Golf Site, all located within the New Jersey Meadowlands (see figure 5). If the Holocene black silt material cannot be processed and subject to the prior approval by the New York District, The Port Authority of New York and New Jersey, and the New Jersey Department of Environmental Protection, this material may be placed at the Newark Bay Confined Disposal Facility (NBCDF) (see figure 6).

The proposed transportation of dredged material for placement in ocean waters is being evaluated to determine that the proposed placement will not unreasonably degrade or endanger human health, welfare or amenities, or the marine environment, ecological systems or economic potentialities. The criteria established by the Administrator, United States Environmental Protection Agency, pursuant to Section 102(a) of the Ocean Dumping Act will be applied. In addition, based upon an evaluation of the potential effect which the failure to place material at an ocean site will have on navigation, economic and industrial development, and foreign and domestic commerce of the United States, an independent determination will also be made of the need to place the dredged material in ocean waters, considering other possible methods of disposal and other appropriate locations.

The New York District is soliciting comments in order to consider and evaluate the impacts of this proposed activity. Comments are used to assess impacts on navigation, water quality, endangered species, historic resources, wetlands, scenic and recreational values, and other public interest factors. Comments are used to determine whether the proposed activity is in the overall public interest.

ALL COMMENTS REGARDING THIS ACTIVITY MUST BE PREPARED IN WRITING AND MAILED TO REACH THE NEW YORK DISTRICT AT THE OFFICE ADDRESS SHOWN ON THE FRONT PAGE OF THIS NOTICE, BEFORE THE EXPIRATION DATE OF THIS NOTICE. Otherwise, it will be presumed that there are no objections to the activity.

Any person who has an interest, or may be affected by the placement of this dredged material may request a public hearing. The request must be submitted in writing within the comment period of this notice and must clearly set forth the interest affected and the manner in which the interest may be affected by the proposed activity. It should be noted that information submitted by mail is considered just as carefully in the process and bears the same weight as that furnished at a public hearing.

The proposed project has been reviewed based upon the "Biological Assessment for the Closure of the Mud Dump Site and Designation of the Historic Area Remediation Site (HARS) in the New York Bight and Apex" (USEPA, 1997) prepared pursuant to Section 7 of the Endangered Species Act (16 USC 1531). Based upon that review, and a review of the latest public listing of threatened and endangered species, it has been preliminarily determined that the proposed activity described herein is not likely to adversely affect any federally-listed threatened or endangered species (humpback whales, finback whales, right whales, loggerhead turtles, leatherback turtles, green turtles, and Kemp's Ridley turtles) or their critical habitat.

The material proposed for HARS placement will not be placed within 0.27 nautical miles of any identified wrecks, which are indicated in the National Register of Historic Places. Other than wrecks, there are no known sites eligible for, or included in, the Register within the dredging or any dredged material placement area. No known archaeological, scientific, prehistorical or historical data is expected to be lost by the anticipated dredging or placement of dredged material.

Review of the activity pursuant to Section 404 of the Clean Water Act will include application of the guidelines announced by the Administrator, US Environmental Protection Agency, under authority of Section 404(b) of the Clean Water Act. In accordance with Section 401 of the Clean Water Act, the New York District has obtained a water quality certificate from the New Jersey Department of Environmental Protection prior to commencement of this contract work.

Pursuant to Section 307 of the Coastal Zone Management Act of 1972 as amended [16 USC 1456(c)], relating to activities conducted or supported by a federal agency in a state which has a federally approved coastal zone management (CZM) program, the New York District has also obtained a federal consistency determination from New Jersey Department of Environmental Protection that the placement of the proposed material at the HARS is consistent with the applicable State's CZM program to the maximum extent practicable. For activities within the coastal zone of New Jersey, project information is available from the New Jersey Department of Environmental Protection, Bureau of Coastal Regulation, CN 401, 501 East State Street, Second Floor, Trenton, New Jersey 08625-0401, Telephone (609) 633-2289. Comments regarding this project's certification should be so addressed.

The work is being coordinated with the following Federal and State agencies:

- U.S. Environmental Protection Agency
- U.S. Department of the Interior, Fish and Wildlife Service
- U.S. Department of Commerce, National Marine Fisheries Service

- U.S. Coast Guard, Third District
- New Jersey Department of Environmental Protection

#### **ENVIRONMENTAL DOCUMENTATION:**

The environmental effects of the New York Harbor and Adjacent Channels, Port Jersey, New Jersey 41' Channel Project have been evaluated in the following National Environmental Policy Act (NEPA) and other regulatory documents including: (1) the final Environmental Impact Statement issued in May 1987, revised in December 1987 and filed in April 1988; (2) the final Environmental Assessment evaluating possible dredged material placement sites dated June 2000; (3) the Federal Record-of-Decision executed in October 2000; and (4) the Water Quality Certificate / Federal Consistency Determination made by the New Jersey Department of Environmental Protection (file number 0000-03-0019.1 (CDT 030001)) issued on September 18, 2003 (as amended on September 21, 2004). Copies of these documents can be viewed and/or obtained by contacting Mr. Bryce Wisemiller at (212) 264-5797.

#### **PLACEMENT SITES FOR HARS SUITABLE DREDGED MATERIAL**

#### **HISTORIC AREA REMEDIATION SITE (HARS):**

In 1972, Congress enacted the Marine Protection Research and Sanctuaries Act (MPRSA) to address and control the dumping of materials into ocean waters. Title I of the Act authorized the US Environmental Protection Agency and the US Army Corps of Engineers to regulate dumping in ocean waters. USEPA and USACE share responsibility for MPRSA permitting and ocean disposal site management. USEPA regulations implementing MPRSA are found at 40 CFR Sections 220 through 229. With few exceptions, MPRSA prohibits the transportation of material from the United States for the purpose of ocean dumping except as may be authorized by a permit issued under the MPRSA. The MPRSA divides permitting responsibility between the USEPA and USACE. Under Section 102 of the MPRSA, USEPA has responsibility for issuing permits for all materials other than dredged material. Under Section 103 of MPRSA, the Secretary of the Army has the responsibility for issuing permits for dredged material, subject to USEPA concurrence.

In the fall of 1997, the USEPA de-designated and terminated the use of the New York Bight Dredged Material Disposal Site (commonly known as the Mud Dump Site or MDS). The MDS had been designated in 1984 for the disposal of up to 100 million cubic yards of dredged material from navigation channels and other port facilities within the Port of New York and New Jersey. Simultaneous with the closure of the MDS, the site and surrounding areas that had been used historically as disposal sites for dredged materials were redesignated as the HARS (figures 3 & 4) at 40 CFR Sections 228.15(d)(6) (See 62 Fed. Reg. 46142 (August 29, 1997); 62 Fed. Reg. 26267 (May 13, 1997)). The HARS is to be managed to reduce impacts of historical disposal activities at the site to acceptable levels in accordance with 40 CFR Sections 228.11(c). The need to remediate the HARS is supported by the presence of toxic effects, dioxin bioaccumulation exceeding Category 1 levels (a definition of which appears in an evaluation memorandum reviewing the results of the testing) in worm tissue, as well as TCDD/PCB contamination in area lobster stocks. Individual elements of those data do not establish that sediments within the Study Area are imminent hazards to the New York Bight Apex ecosystem, living resources, or human health. However, the collective evidence presents cause for concern, and justifies the need for

remediation. Further information on the conditions in the Study Area and the surveys performed may be found in the Supplemental Environmental Impact Statement (USEPA, 1997).

The HARS designation identifies an area in and around the former MDS that has exhibited the potential for adverse ecological impacts. The HARS will be remediated with dredged material that shall be selected so as to ensure it will not cause significant undesirable effects including through bioaccumulation or unacceptable toxicity, in accordance with 40 CFR 227.6. This dredged material is referred to as "Material for HARS Remediation" or "HARS Remediation Material".

As of the end of September 2004, dredged materials from at least thirty-seven different completed and ongoing private and federal dredging projects in the Port of New York and New Jersey have been dredged and placed as Remediation Material in the ocean at the HARS since the closure of the Mud Dump Site and designation of the HARS in 1997. This represents approximately 22,200,000 cubic yards of Remediation Material.

The HARS, which includes the 2.2 square nautical mile area of the former MDS, is an approximately 15.7 square nautical mile area located approximately 3.5 nautical miles east of Highlands, New Jersey and 7.7 nautical miles south of Rockaway, New York. The MDS is located approximately 5.3 nautical miles east of Highlands, New Jersey and 9.6 nautical miles south of Rockaway, New York. When determined by bathymetry that capping is complete, the USEPA will undertake any necessary rulemaking to designate the HARS. The HARS includes the following three areas:

**Priority Remediation Area (PRA):** A 9.0 square nautical mile area to be remediated with at least 1 meter of Remediation Material. The PRA encompasses an area of degraded sediments as described in greater detail in the SEIS.

**Buffer Zone:** An approximately 5.7 square nautical mile area (0.27 nautical mile wide band around the PRA) in which no placement of the Material for Remediation will be allowed, but may receive Material for Remediation that incidentally spreads out of the PRA.

**No Discharge Zone:** An approximately 1.0 square nautical mile area in which no placement or incidental spread of Material for Remediation is allowed.

To improve management and monitoring of placement activities at the HARS, electronic monitoring equipment is used on-board any barges carrying Remediation Material to the HARS. This equipment records vessel positions throughout the duration of each trip to the HARS and during remediation operations. To improve communication reliability between tugs and scows, a prescribed formal communication procedure has been put in place (copies of this procedure are available upon request).

Over the past years, U.S. Environmental Protection Agency - Region 2 and the U.S. Army Corps of Engineers - New York District have been refining the approach to the technical review and scientific and regulatory analysis of dredging projects' dredged materials proposed for placement at the HARS. Sediment testing evaluation processes are evolving, which establish a responsible framework for assessing results of physical, chemical and bioaccumulation test results, to include tissue analysis from bioaccumulation testing of dredged materials proposed for ocean placement. The bioaccumulation framework defines a standard approach for assessing each analyte (an item to be analyzed for as part of

the testing), in relation to regulatory standards and human health and environmental risk factors. The framework's purpose is to facilitate decision, and final decision making, in accordance with the Marine Protection, Research and Sanctuaries Act of 1972. The U.S. Environmental Protection Agency - Region 2 and the U.S. Army Corps of Engineer - New York District utilize these testing evaluation processes for identifying HARS-suitable dredged materials for remediation of the HARS.

Additional information concerning the HARS itself can be obtained from Mr. Douglas Pabst of U.S. Environmental Protection Agency Region 2, Team Leader of the Dredged Material Management Team, at telephone number (212) 637-3797.

#### **ALTERNATIVES TO HARS PLACEMENT:**

As regards ocean placement of dredged material, the Ocean Dumping Regulations [Title 40 CFR Sections 227.16(b)] state that "...alternative methods of disposal are practicable when they are available at reasonable incremental cost and energy expenditures which need not be competitive with the costs of ocean dumping, taking into account the environmental impacts associated with the use of alternatives to ocean dumping....". The New York District has evaluated the regional practicability of potential alternatives for dredged material disposal in the September 1999 Draft Implementation Report for the "Dredged Material Management Plan for the Port of New York and New Jersey". The Recommended Plan within the report addresses both the long and short term dredged material placement options in two specific timeframes, heretofore referred to as the "2010 Plan" and the "2040 Plan" respectively.

The 2010 Plan relies heavily on the creation, remediation, and restoration of a variety of existing degraded or impacted sites in the region with material that would and would not be considered suitable for HARS remediation. The Plan anticipates that a considerable volume of HARS suitable material will be placed at alternative beneficial use sites currently under development. Use of these sites performs habitat creation (for shellfish, oyster, and bird), habitat restoration at existing degraded pit sites, landfill and quarry remediation, provision of construction material, and beach nourishment. Many dredged material management options presented in the 2010 Plan are not presently permitted and/or are presently under construction, and are unavailable for the purposes of this notice. However, as alternative sites are developed and permitted, they may be evaluated and designated for use for the remaining dredged material from the Port Jersey Channel Project. As the specific alternative sites and their applicable testing/regulatory criteria are subject to change, future Public Notices on the remaining Port Jersey Channel Contract may be issued as evaluations and testing of the material to be dredged from those contracts are performed and as other alternative placement sites are developed.

Based upon the lowest responsive and responsible bid received for Contract Area 2A, the incremental cost for using the permitted upland placement sites without processing as an alternative site to the HARS for the Holocene red-brown sandy material is \$2,810,880. By finding that this material may be placed at the HARS, the cost of dredging and placing this material decreases from \$54.40 to \$6.60 per cubic yard, a considerable savings to the people of the United States and to the primary project sponsor, the State of New Jersey. Consequently, the incremental cost for using this alternative when compared to the HARS is not considered reasonable or practicable.

For material to be dredged from the Port Jersey Channel, Contract Area 2A that has been tested and found suitable for use as HARS Remediation Material, the New York District will prepare a Statement of

Findings (SOF) for the action described in this Public Notice based on all available information, which will consider factors such as environmental benefits, impacts, and cost, and will fully consider all the comments received in response to this Public Notice.

**TESTING:**

**Summary of Sediment Testing Results**

In accordance with the Ocean Dumping Regulations at 40 CFR Part 227, bioassays were performed to assess the toxicity of the solid phase, liquid phase and suspended particulate phase of the proposed dredged material from the project area. Bioassays were performed using appropriate sensitive marine organisms as discussed below. Bioassay testing conformed to procedures outlined in Evaluation of Dredged Material Proposed for Ocean Disposal (USEPA, USACE; 1991) commonly referred to as the "Green Book". The results of bioassay tests conducted on sediments from the project area are provided in Table 2.

USEPA, Region 2 and the Corps of Engineers, New York District have been refining the approach to the technical review and scientific and regulatory analysis of dredging projects proposed for the HARS. A testing evaluation process was developed, which established a basic framework for assessing results of tissue analysis from bioaccumulation testing of dredged material proposed for ocean placement. The framework defines a standard approach for assessing each analyte (an item to be analyzed for as part of the testing), in relation to regulatory standards and human health and environmental risk factors, to facilitate decisions in accordance with the Marine Protection Research and Sanctuaries Act of 1972. USEPA and USACE utilize this testing evaluation process for determining suitability of dredged sediments as Remediation Material at the HARS.

As depicted in Figure 2, the proposed dredging area has been characterized by using one (1) sediment testing reach with 7 core samples for the 41-foot project. The core samples were taken to a depth of -44.5 feet (i.e., design depth of -41 feet plus an additional -2 feet required for safety and -1.5 feet allowable paid overdepth). The seven core samples were combined to yield one sediment composite, which was submitted to chemical and biological testing. Based upon an analysis of sediment samples from the reach, the grain size characteristics of the proposed dredged material are:

2.6% GRAVEL, 68.8% SAND, 20.0% SILT, 8.6% CLAY

Results of the chemical and biological testing are summarized below.

**Evaluation of the Liquid Phase: Chemistry**

In accordance with requirements of 40 CFR Sections 227.6(c)(1) and 227.27(a), chemical analysis was conducted on project area site water and elutriate. Results of this evaluation are summarized in Table 1. Please note in reading Table 1 that detection limits have been listed for only those constituents that the laboratory reported as not detected (ND) in the concentration column (this reporting convention was similarly applied in reporting the results of bioaccumulation potential testing discussed below). If the constituents were detected (above the detection limit), the measured value would appear.

Concentrations of chemical constituents in the water column following ocean placement, after allowing for initial mixing, were calculated using the Automated Dredging and Disposal Alternatives Management System (ADDAMS), a mixing model developed by the U.S. Army Corps of Engineers, Waterways Experiment Station (WES) and described in the joint USEPA/USACE manual referred to as the "Green Book". The material can be considered suitable for ocean disposal only if the concentration of the Suspended Particulate Phase (SPP) of the dredged material, after allowance for initial mixing, will not exceed the Limiting Permissible Concentration (LPC) beyond the boundaries of the disposal site within the first four hours following dumping or at any point in the marine environment after the first four hours. The ADDAMS Model predicted that applicable marine water quality criteria for listed constituents were not exceeded after allowance for initial mixing (40 CFR 227.29(a)). Results of the analyses indicate that the LPC will be met for the proposed dredged material from the project area.

### **Bioassays**

In accordance with 40 CFR Part 227 of the Ocean Dumping Regulations, bioassays were performed to assess the toxicities of the solid phase, liquid phase, and suspended particulate phase of the proposed dredged material from the project area. Liquid phase bioassays, run as part of the suspended particulate phase on three appropriate sensitive marine organisms, mysid shrimp (*Mysidopsis bahia*), inland silversides (*Menidia beryllina*), and blue mussels (*Mytilus edulis*), show that after initial mixing (as determined under 40 CFR Sections 227.29(a)(2)), the liquid phase of the material would not exceed a toxicity threshold of 0.01 of a concentration shown to be acutely toxic to appropriate sensitive marine organisms. Accordingly, it is concluded that the liquid phase of the material would be in compliance with 40 CFR Sections 227.6(c)(1) and 227.27(a). The specific test results and technical analysis of the data underlying this conclusion are described and evaluated in the joint New York District/USEPA, Region 2 memorandum dated 23 October 2003.

### **Evaluation of the suspended particulate phase**

The suspended particulate phase of the material was evaluated for compliance with 40 CFR Sections 227.6(c)(2) and 227.27(b). Bioassay testing of the suspended particulate phase of the material has been conducted using three appropriate sensitive marine organisms (mysid shrimp (*Mysidopsis bahia*), inland silversides (*Menidia beryllina*), and blue mussels (*Mytilus edulis*). Median lethal concentrations (LC<sub>50</sub>), those concentrations of suspended particulate phase resulting in 50% mortality, were determined for all three test species. In addition, the median effective concentration (EC<sub>50</sub>), based on normal larval development to the D-cell stage, was determined for the bivalve larvae of *M. edulis*. The Limiting Permissible Concentration was then calculated as 0.01 of the LC<sub>50</sub> or EC<sub>50</sub> of the most sensitive organism. The LPC for the suspended particulate phase of the Port Jersey Channel, Contract Area 2A composite can be found in Table 2.

The information shows that when placed at the HARS, and after initial mixing (as determined under 40 CFR Sections 227.29(a)(2)), dredged material in the suspended particulate phase would not exceed a toxicity threshold of 0.01 of a concentration shown to be acutely toxic in the laboratory bioassays, and thus would not cause significant mortality. Moreover, after placement, the suspended particulate phase would only exist in the environment for a short time, indicating that the suspended particulate phase of the project material would not cause significant undesirable effects, including the possibility of danger associated with bioaccumulation, since these impacts require long duration exposures (see USEPA, 1994).

Accordingly, it is concluded that the suspended phase of the material from Port Jersey Channel, Contract Area 2A would be in compliance with 40 CFR Sections 227.6(c)(2) and 227.27(b). The results from the suspended particulate phase evaluation conducted on proposed dredged sediments from the project area are presented in Table 2 of this Public Notice. The specific test results and technical analyses of the data underlying this conclusion are described in the joint New York District/USEPA, Region 2 memorandum referenced previously.

#### **Evaluation of the solid phase toxicity**

The solid phase evaluation tests the whole test sediment before it has undergone processing that might alter its chemical or toxicological properties. The reference sediment represents existing background conditions in the vicinity of the dumpsite, removed from the influence of any disposal operation. For the solid phase bioassay, 10-day toxicity was determined by exposing a filter feeding mysid shrimp (*Mysidopsis bahia*) and a deposit feeding, burrowing amphipod (*Ampelisca abdita*) to a composite of sediment from the project area and comparing mortalities in those treatments to mortalities experienced after exposure to a reference sediment. These organisms are good predictors of adverse effects to benthic marine communities (see USEPA, 1996a). Results are evaluated for biologically and statistically significant differences in mortality between treatments. The 1991 Green Book guidance considers that dredged material does not meet the whole sediment toxicity criterion when mortality in the test treatments is (a) statistically significant and greater than in the reference sediment and (b) exceeds mortality in the reference treatment by at least 10% for mysid shrimp and 20% for amphipod species. The following sections address the results of those tests and further analyze compliance with the regulatory criteria of 40 CFR Sections 227.6(c)(3), 227.27(b), and 228.15 and with USEPA, Region 2/New York District guidance.

The toxicity of project sediments was not statistically greater than reference for either mysids or amphipods, and the difference between percent survivals in test and reference sediments was less than 10% for mysid shrimp and less than 20% for amphipods. These results show that the solid phase of the material would not cause significant mortality. The results of the toxicity portion of the solid phase bioassays can be seen in Table 2.

#### **Evaluation of the solid phase bioaccumulation**

Bioaccumulation tests for sediments from the project area reaches were conducted on the solid phase of the project material for contaminants of concern using two appropriate sensitive benthic marine organisms, a sand worm (*Nereis virens*) and a littleneck clam (*Tapes japonica*). These species are considered to be good representatives of the phylogenetically diverse base of the marine food chain. Contaminants of concern, identified for the regional testing manual are listed in the NY/NJ Harbor Estuary Program Toxics Characterization report (Squibb, *et al.* 1991). Table 3 of this notice addresses the bioaccumulation of contaminants of concern for the project area. Additional information on more rigorous evaluations conducted on individual contaminants may be found in the Testing Evaluation Memos for this project. Table 3 indicates that several contaminants in these reaches bioaccumulated above reference in the clam and/or worm. The Testing Memo further evaluates these contaminants and concludes that any contaminant that exceeded reference did not exceed any existing regional matrix or dioxin value. Several contaminants that do not have matrix values did exceed background levels, but in no case did any contaminant accumulate to toxicologically important concentrations, even when very

conservative assumptions were used in the analysis. Any contaminants that exhibited bioaccumulation test results above reference were all below the acceptable human health risk range and acceptable aquatic effects range, again using conservative approaches and analyses.

Based on the requirements of 40 CFR Parts 227.6 and 227.27, bioaccumulation analyses were performed for the chemical constituents listed in Table 3 of this Public Notice. All constituents identified in worm and clam tissue were compared to existing Food and Drug Administration (FDA) action levels for poisonous or deleterious substances in fish and shellfish for human food, regional disposal criteria, background concentrations and risk-based criteria provided by USEPA, Region 2.

### **Conclusion**

Based upon the results of testing of the sediments proposed for dredging from Port Jersey 41-foot Channel, Contract Area 2A, the USACE and the USEPA have determined October 23, 2003 that the sediments meet the criteria for ocean placement as described in 40 CFR parts 227.6 and 227.27, and in USEPA, Region 2/USACE, New York District guidance. The sediments are also suitable for placement at the HARS as Remediation Material as described at 40 CFR Part 228.15.

Placement of this material at the HARS would serve to reduce impacts at the HARS to acceptable levels and improve benthic conditions. Sediments in the HARS have been found to be acutely toxic to sensitive benthic marine organisms in laboratory tests. Project dredged material used in laboratory acute toxicity tests with the same species was determined not to be toxic. Placement of project material over existing toxic sediments would serve to remediate those areas for toxicity. In addition, by covering the existing sediments in the site with this project material, surface dwelling organisms will be exposed to sediments exhibiting Category 1 qualities, which will ameliorate the existing sediment conditions.

The Testing Evaluation Memos for this project may be obtained by contacting Mr. Douglas Pabst, Team Leader of the USEPA, Region 2 Dredged Material Management Team at (212) 637-3797 or Ms. Oksana Yaremko at the USACE at (212) 264-9268. The bioaccumulation test results were used in evaluating the potential impacts of the material.

Please contact Mr. Bryce Wisemiller, the Port Jersey Channel Project Manager; at 212-264-5797 should you have any questions regarding this Public Notice or the Port Jersey Channel Project in general. Comments or questions may be FAXED to (212) 264-2924. For more information on New York District programs, visit our website at <http://www.nan.usace.army.mil>.

We request that you communicate the foregoing information concerning the proposed work to any persons known by you to be interested and who did not receive a copy of this notice.

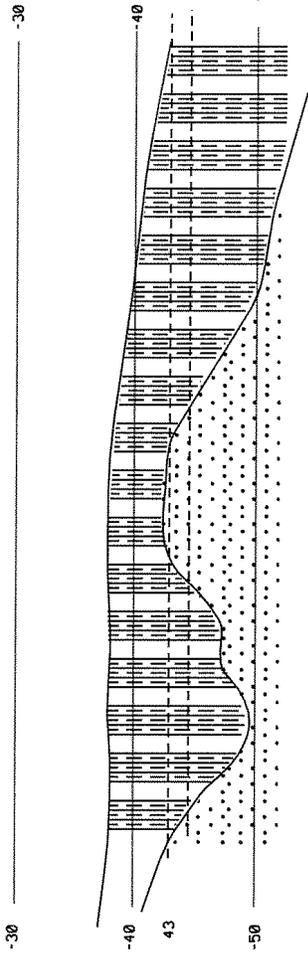


William F. Slezak  
Chief, Harbor Programs Branch

Enclosures



A' A



B' B

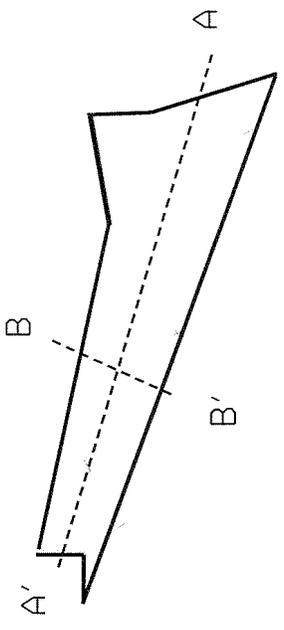
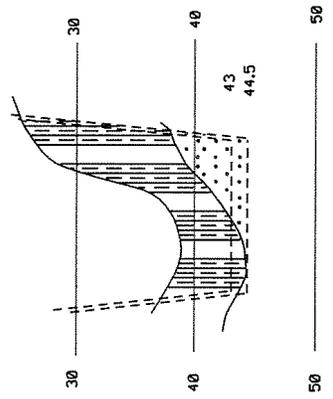
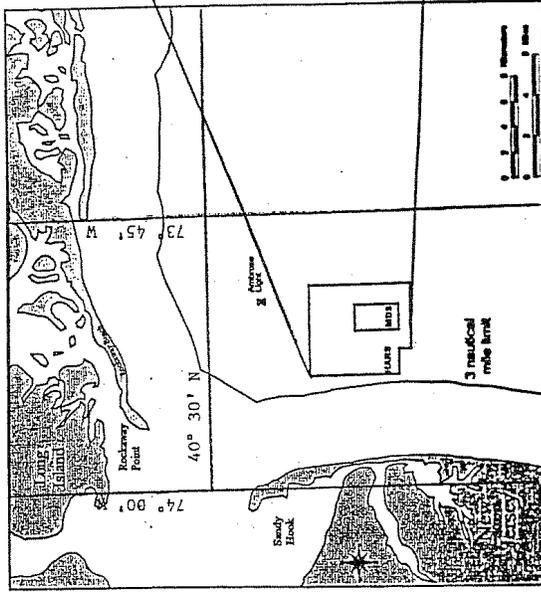


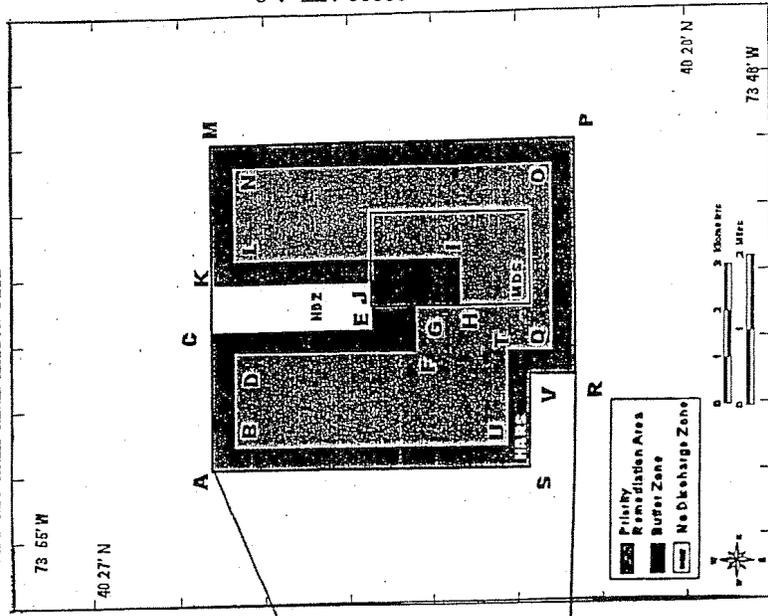
FIGURE 2  
PORT JERSEY CHANNEL  
Contract 2, Area 2A  
Cross-Sections

BLACK SILT  
SILTY SAND

HISTORIC AREA REMEDIATION SITE LOCATION MAP



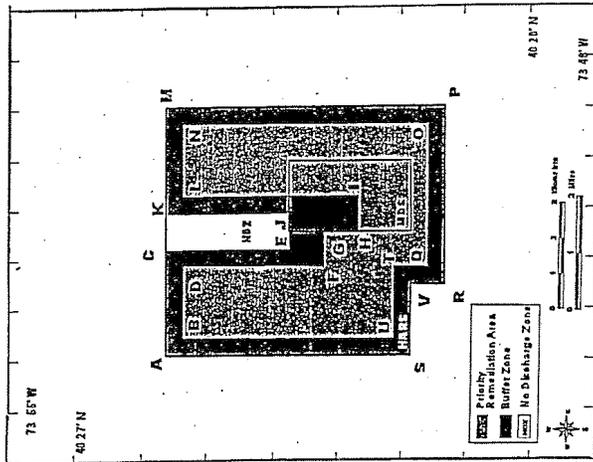
LOCATION OF PRIMARY REMEDIATION AREA WITHIN THE HISTORIC AREA REMEDIATION SITE



00900 ATT. A-2

B

Figure 3



Priority Remediation Area (PRA): 9.0 square nautical mile area to be remediated with at least one meter of Remediation Material, bounded by the following coordinates:

Point	Latitude DMS <sup>k</sup>	Longitude DMS	Latitude DDM <sup>**</sup>	Longitude DDM
B	40° 25' 23" N	73° 53' 34" W	40° 25.38' N	73° 53.57' W
D	40° 25' 22" N	73° 52' 08" W	40° 25.37' N	73° 52.13' W
F	40° 23' 13" N	73° 52' 09" W	40° 23.22' N	73° 52.15' W
G	40° 23' 13" N	73° 51' 28" W	40° 23.22' N	73° 51.47' W
H	40° 22' 41" N	73° 51' 28" W	40° 22.68' N	73° 51.47' W
I	40° 22' 41" N	73° 50' 43" W	40° 22.68' N	73° 50.72' W
L	40° 25' 22" N	73° 50' 44" W	40° 25.37' N	73° 50.73' W
N	40° 25' 22" N	73° 49' 19" W	40° 25.37' N	73° 49.32' W

<sup>k</sup>-- DMS = Degrees, Minutes, Seconds

<sup>\*\*</sup> -- DDM := Degrees, Decimal Minutes

Figure 4

Figure 5: Permitted Upland Placement Sites for Port Jersey Contract 2, Area 2A Dredged Material

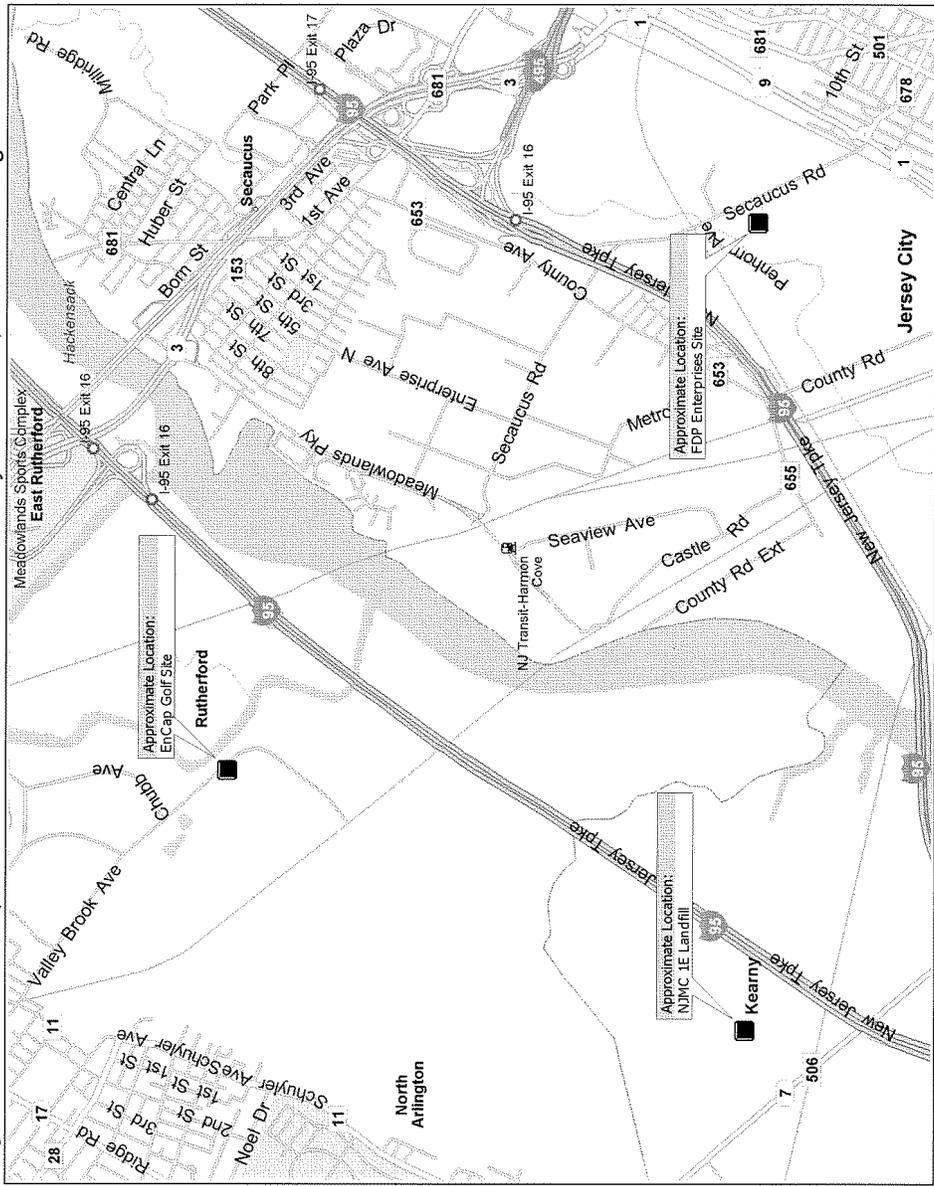
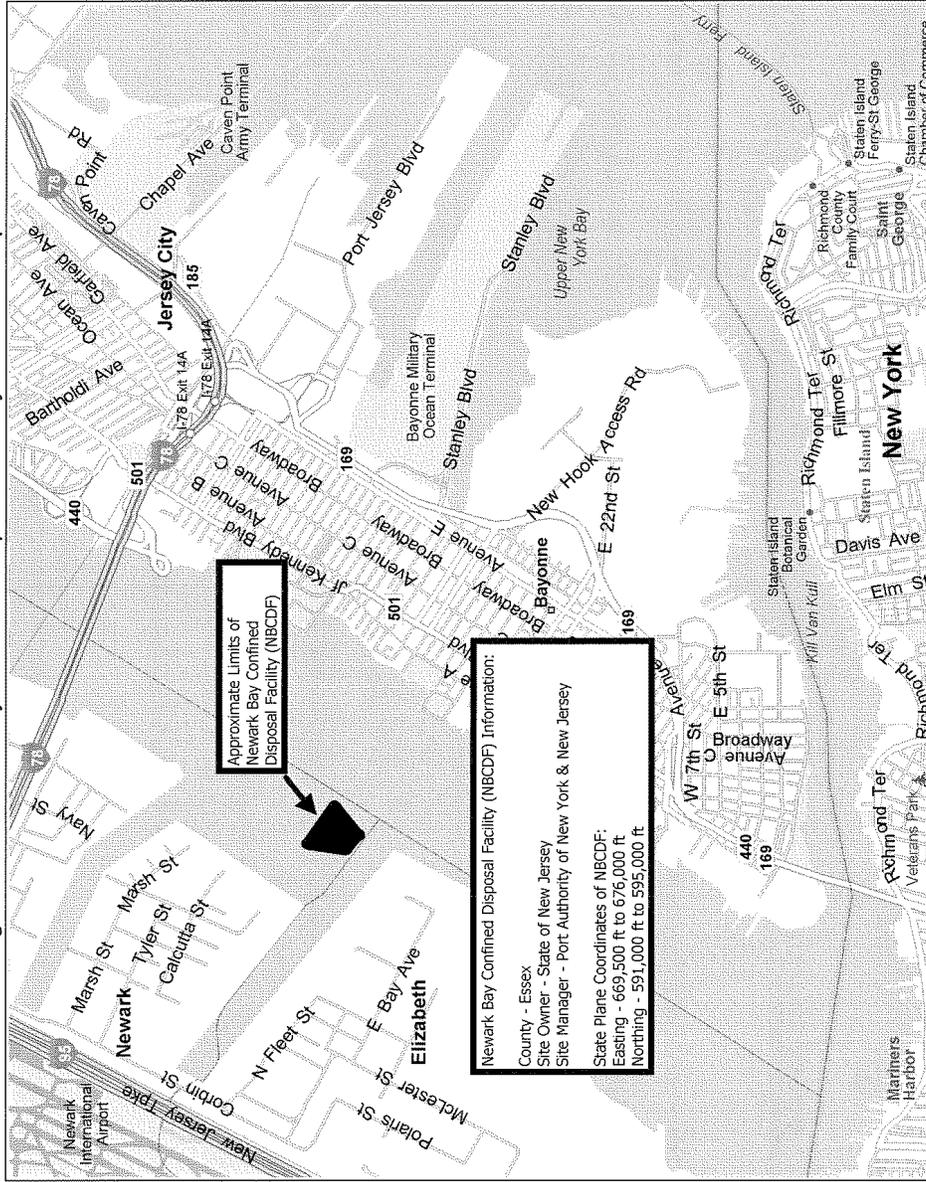


Figure 6: Newark Bay Confined Disposal Facility Location Map



**TABLE 1. RESULTS OF CHEMICAL ANALYSIS OF SITE WATER AND ELUTRIATE  
PORT JERSEY CHANNEL  
CONTRACT AREA 2A- REACH 2**

CONSTITUENTS	SITE WATER		ELUTRIATE	
	DETECTION LIMITS	CONCENTRATION	DETECTION LIMITS	CONCENTRATION
<b>Metals</b>	<b>ppb</b>	<b>ppb</b>	<b>ppb</b>	<b>ppb</b>
Ag		0.054		0.081
Cd		0.098		0.071
Cr		0.757		3.413
Cu		2.28		4.263
Hg		0.007		0.047
Ni		0.98		3.61
Pb		1.06		3.56
Zn		6.01		8.57
<b>Pesticides</b>	<b>pptr (ng/L)</b>	<b>pptr (ng/L)</b>	<b>pptr (ng/L)</b>	<b>pptr (ng/L)</b>
Aldrin	1.13	ND	1.13	ND
a-Chlordane	0.43	ND	0.43	ND
trans Nonachlor	0.41	ND	0.41	ND
Dieldrin	0.39	ND	0.39	ND
4,4'-DDT	0.22	ND		0.430
2,4'-DDT	0.79	ND	0.79	ND
4,4'-DDD	0.24	ND		1.74
2,4'-DDD	0.30	ND	0.30	ND
4,4'-DDE	0.34	ND		0.73
2,4'-DDE	0.68	ND	0.68	ND
<b>Total DDT</b>		<b>1.3</b>		<b>3.8</b>
Endosulfan I	0.44	ND	0.44	ND
Endosulfan II	0.20	ND	0.20	ND
Endosulfan sulfate	0.23	ND	0.23	ND
Heptachlor	0.47	ND	0.47	ND
Heptachlor epoxide	0.38	ND	0.38	ND
<b>Industrial Chemicals</b>	<b>pptr (ng/L)</b>	<b>pptr (ng/L)</b>	<b>pptr (ng/L)</b>	<b>pptr (ng/L)</b>
PCB 8	6.40	ND	6.40	ND
PCB 18	0.55	ND		1.08
PCB 28	0.69	ND	0.69	ND
PCB 44	0.58	ND		0.56
PCB 49	0.59	ND		1.07
PCB 52	0.57	ND		1.33
PCB 66	0.60	ND	0.60	ND
PCB 87	0.45	ND	0.45	ND
PCB 101	0.46	ND		0.56
PCB 105	0.23	ND	0.23	ND
PCB 118	0.35	ND	0.35	ND
PCB 128	0.56	ND	0.56	ND
PCB 138	0.53	ND	0.53	ND
PCB 153	0.43	ND		0.39
PCB 170	0.41	ND	0.41	ND
PCB 180	0.38	ND	0.38	ND
PCB 183	0.37	ND	0.37	ND
PCB 184	0.37	ND	0.37	ND
PCB 187	0.34	ND	0.34	ND
PCB 195	0.43	ND	0.43	ND
PCB 206	0.49	ND		0.21
PCB 209	0.51	ND	0.51	ND
<b>Total PCB</b>		<b>27.9</b>		<b>32.3</b>

ND = Not detected

Total DDT = sum of 2,4'- and 4,4'-DDD, DDE, and DDT

Total PCB = sum of congeners reported x 2

Concentrations shown are the mean of three replicate analyses.

Means were determined using conservative estimates of concentrations of constituents that were at concentrations below the detection limit.

TABLE 2. PORT JERSEY CHANNEL - CONTRACT AREA 2A - REACH 2

TOXICITY TEST RESULTS

Suspended Particulate Phase

Test Species	Test Duration	LC <sub>50</sub> /EC <sub>50</sub>	LPC (a)
<i>Menidia beryllina</i>	96 hours	(b) >100%	1.00
<i>Mysidopsis bahia</i>	96 hours	(b) >100%	1.00
<i>Mytilus edulis</i> (larval survival)	48 hours	(b) >100%	1.00
<i>Mytilus edulis</i> (larval normal develop.)	48 hours	(c) 22.4%	0.22

(a) Limiting Permissible Concentration (LPC) is the LC<sub>50</sub> or EC<sub>50</sub> times 0.01.

(b) Median Lethal Concentration (LC<sub>50</sub>) resulting in 50% mortality at test termination.

(c) Median Effective Concentration (EC<sub>50</sub>) based on normal development to the D-cell, prodissoconch 1 stage.

Whole Sediment (10 days)

Test Species	% Survival in Reference	% Survival in Test	% Difference  Reference -Test	Is difference statistically significant? (α=0.05)
<i>Ampelisca abdita</i>	97%	97%	0%	No
<i>Mysidopsis bahia</i>	98%	96%	2%	No

**TABLE 3. 28 DAY BIOACCUMULATION TEST RESULTS: CHEMICAL ANALYSIS OF TISSUE  
PORT JERSEY CHANNEL - CONTRACT AREA 2A - REACH 2  
Wet weight concentrations**

CONSTITUENTS	<i>Tapes japonica</i>				<i>Nereis virens</i>			
	REFERENCE		TEST		REFERENCE		TEST	
	DETECTION LIMITS	CONCENTRATION	DETECTION LIMITS	CONCENTRATION	DETECTION LIMITS	CONCENTRATION	DETECTION LIMITS	CONCENTRATION
<b>Metals</b>	ppm (mg/kg)	ppm (mg/kg)	ppm (mg/kg)	ppm (mg/kg)	ppm (mg/kg)	ppm (mg/kg)	ppm (mg/kg)	ppm (mg/kg)
Ag		0.09		0.10		0.04		0.04
As		2.11		2.09		3.19		2.72
Cd		0.19	*	0.20		0.05	*	0.06
Cr		0.09		0.10		0.14	*	0.28
Cu		0.77		0.76		1.53	*	1.86
Hg		0.01		0.01		0.04		0.03
Ni		0.92		0.94		0.52	*	0.80
Pb		0.03	*	0.04		0.11	*	0.22
Zn		7.93		8.19		30.66		35.08
<b>Pesticides</b>	ppb (ug/kg)	ppb (ug/kg)	ppb (ug/kg)	ppb (ug/kg)	ppb (ug/kg)	ppb (ug/kg)	ppb (ug/kg)	ppb (ug/kg)
Aldrin	0.070	ND	0.07	ND		0.03	0.07	ND
a-Chlordane		0.02		0.03		0.09	*	0.14
trans Nonachlor		0.02		0.02		0.25	*	0.24
Dieldrin		0.11		0.12		0.28	*	0.45
4,4'-DDT	0.11	ND	0.11	ND		0.04	*	0.09
2,4'-DDT	0.10	ND	0.10	ND		0.04	0.10	ND
4,4'-DDD		0.04	*	0.07		0.12	*	1.01
2,4'-DDD		0.03		0.02		0.10	*	0.27
4,4'-DDE		0.03	*	0.12		0.03	*	0.40
2,4'-DDE		0.02		0.02	0.05	ND	0.05	ND
<b>Total DDT</b>		<b>0.22</b>		<b>0.34</b>		<b>0.35</b>		<b>1.83</b>
Endosulfan I	0.10	ND		0.05	0.11	ND	0.11	ND
Endosulfan II	0.08	ND	0.08	ND	0.09	ND	0.09	ND
Endosulfan sulfate		0.02	*	0.03		0.07		0.06
Heptachlor	0.10	ND	0.10	ND		0.04		0.03
Heptachlor epoxide		0.02		0.02		0.06		0.02
<b>Industrial Chemicals</b>	ppb (ug/kg)	ppb (ug/kg)	ppb (ug/kg)	ppb (ug/kg)	ppb (ug/kg)	ppb (ug/kg)	ppb (ug/kg)	ppb (ug/kg)
PCB 8		0.39		0.23		0.80		0.36
PCB 18		0.04		0.09		0.03	*	0.82
PCB 28		0.03	*	0.23		0.03	*	0.93
PCB 44		0.02	*	0.18		0.18	*	0.76
PCB 49		0.06	*	0.22		0.10	*	0.77
PCB 52		0.15	*	0.35		0.21	*	1.90
PCB 66	0.12	ND	*	0.13		0.02	*	0.56
PCB 87		0.04	*	0.08		0.04	*	0.23
PCB 101		0.05	*	0.18		0.21	*	0.90
PCB 105		0.02	*	0.05		0.13	*	0.34
PCB 118		0.05	*	0.12		0.16	*	0.58
PCB 128		0.02		0.02		0.16	*	0.22
PCB 138		0.11	*	0.17		1.00	*	1.51
PCB 153		0.10	*	0.21		1.50	*	2.09
PCB 170		0.01	*	0.02		0.21	*	0.29
PCB 180		0.09	*	0.11		0.57	*	0.84
PCB 183		0.02		0.02		0.28	*	0.38
PCB 184	0.08	ND	0.08	ND	0.08	ND		0.05
PCB 187		0.04	*	0.07		0.61	*	0.82
PCB 195		0.01		0.01		0.11	*	0.23
PCB 206		0.01	*	0.02		0.24	*	0.44
PCB 209		0.01	*	0.03		0.17	*	0.37
<b>Total PCB</b>		<b>2.73</b>	*	<b>5.18</b>		<b>13.57</b>	*	<b>30.76</b>
1,4-Dichlorobenzene		0.19		0.19		0.26		0.31

TABLE 3. (Continued)

## PORT JERSEY CHANNEL - CONTRACT AREA 2A - REACH 2

CONSTITUENTS	<i>Tapes japonica</i>				<i>Nereis virens</i>			
	REFERENCE		TEST		REFERENCE		TEST	
	DETECTION LIMITS	CONCEN TRATION	DETECTION LIMITS	CONCEN TRATION	DETECTION LIMITS	CONCEN TRATION	DETECTION LIMITS	CONCEN TRATION
PAH's	ppb (ug/kg)	ppb (ug/kg)	ppb (ug/kg)	ppb (ug/kg)	ppb (ug/kg)	ppb (ug/kg)	ppb (ug/kg)	ppb (ug/kg)
Naphthalene		0.38		0.38		0.76		* 1.82
Acenaphthylene		0.09		0.05		0.12		* 0.62
Acenaphthene		0.07		0.06		0.21		* 0.70
Fluorene		0.11		0.12		0.10		* 0.19
Phenanthrene		0.50		0.36		0.11		* 0.74
Anthracene		0.19		0.12		0.05		* 0.67
Fluoranthene		1.17		1.50		0.16		* 7.39
Pyrene		1.21		3.27		0.16		* 14.87
Benzo(a)anthracene		0.79		* 1.59		0.04		* 1.97
Chrysene		1.02		* 2.24		0.15		* 7.68
Benzo(b)fluoranthene		0.22		0.64	0.16	ND		* 1.44
Benzo(k)fluoranthene		0.21		0.36	0.11	ND		* 1.45
Benzo(a)pyrene		0.30		0.42	0.14	ND		* 1.92
Indeno(1,2,3-cd)pyrene		0.17		0.06	0.10	ND		* 0.46
Dibenzo(a,h)anthracene		0.08		0.05	0.09	ND		* 0.21
Benzo(g,h,i)perylene		0.20		0.20		0.07		* 0.71
<b>Total PAH's</b>		<b>6.71</b>		<b>11.33</b>		<b>2.23</b>		<b>* 42.84</b>
Dioxins	pptr(ng/kg)	pptr(ng/kg)	pptr(ng/kg)	pptr(ng/kg)	pptr(ng/kg)	pptr(ng/kg)	pptr(ng/kg)	pptr(ng/kg)
2,3,7,8 TCDD	0.07	ND		0.05		0.11		* 0.26
1,2,3,7,8 PeCDD	0.15	ND		0.07		0.09		* 0.26
1,2,3,4,7,8 HxCDD	0.05	ND		0.02		0.04	0.32	* ND
1,2,3,6,7,8 HxCDD	0.05	ND		0.03		0.22		* 0.20
1,2,3,7,8,9 HxCDD	0.05	ND		0.03		0.12		* 0.17
1,2,3,4,6,7,8 HpCDD		0.16		* 0.21		1.16		* 1.18
1,2,3,4,7,8,9 OCDD		1.20		1.44		6.13		* 7.16
2,3,7,8 TCDF		0.10		* 0.26		0.75		* 0.83
1,2,3,7,8 PeCDF	0.12	ND		0.07		0.13		* 0.18
2,3,4,7,8 PeCDF	0.11	ND		0.06		0.21		* 0.26
1,2,3,4,7,8 HxCDF		0.07		* 0.11		0.18		* 0.29
1,2,3,6,7,8 HxCDF		0.02		0.03		0.09		* 0.12
2,3,4,6,7,8 HxCDF		0.03		0.02		0.08		* 0.10
1,2,3,7,8,9 HxCDF		0.01		0.03		0.03		* 0.08
1,2,3,4,6,7,8 HpCDF	0.15	ND		0.07	0.15	ND		* 0.66
1,2,3,4,7,8,9 HpCDF	0.18	ND	0.13	ND		0.07		* 0.20
1,2,3,4,6,7,8,9 OCDF		0.16		0.10		0.46		* 0.62

ND = Not detected

Total PAH = Sum of all PAH's.

Total DDT = sum of 2,4'- and 4,4'-DDD, DDE, and DDT

Total PCB = 2(x), where x = sum of PCB congeners

Concentrations shown are the mean of 5 replicate analyses in wet weight.

Means were determined using conservative estimates of concentrations of constituents that were at concentrations below the detection limit.

\* = Statistically significant at the 95% confidence level.