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RESOURCE CONSERVATION AND RECOVERY ACT CORRECTIVE ACTION PROGRAM
FACT SHEET FOR NSY PORTSMOUTH ME
12/1/1991
PORTSMOUTH NAVAL SHIPYARD

RCRA Corrective Action Program
Fact Sheet
Portsmouth Naval Shipyard
Kittery, Maine
December 1991

Environmental Investigation of Portsmouth Naval Shipyard

This fact sheet provides background information on the Shipyard, the status of its environmental investigations, how citizens can get involved in the process, and describes the requirements of the Corrective Action Permit. A second fact sheet to follow in mid-1992 will provide more information on specific findings which will be included in a report scheduled for completion in July 1992. Additional information is available at repositories and from contact persons listed on Page 10.*

IN MARCH 1989, THE U.S. ENVIRONMENTAL PROTECTION AGENCY REGION I (EPA) ISSUED A CORRECTIVE ACTION PERMIT TO THE PORTSMOUTH NAVAL SHIPYARD. THE PERMIT REQUIRES THE SHIPYARD TO CONDUCT AN INVESTIGATIVE STUDY AND TAKE APPROPRIATE CORRECTIVE ACTIONS AT IDENTIFIED PAST HAZARDOUS WASTE SITES AT THE FACILITY. THE PERMIT GIVES EPA CONTROL

OVER THE STUDIES AND CLEANUP (REMED-IATION) PROGRAM NOW BEING UNDERTAKEN BY THE NAVY.

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Brief Shipyard History

After the Revolutionary War came a new American government, a new Department of the Navy and a need for America to have its own shipyards. From 1800, when the Portsmouth Naval Shipyard was first established, to the present, the Shipyard has had a continuing history of progress in the design, construction and repair of many types of warships, from sailing ships to modern submarines.

The first island purchased was Fernald's (Dennett) Island. Over the years, four more islands were purchased and history was made as the Shipyard became the "Shipyard of Firsts." Among the Shipyard's accomplishments are:

- FRANKLIN (1867), The largest steamship constructed by the Navy at the time.
- L-8 (1917), Construction of the first submarine in a naval shipyard.
- ALBACORE (1953), The first truly submersible hull design. The world's fastest submarine, when built.
- DOLPHIN (1968), Prototype design for deep diving submarines.

Employment at Portsmouth Naval Shipyard has ranged from 9 civilian employees in 1829 to 23,000 in 1944 when a record number of 31 submarines were built. A closure order in 1964 intended to take effect before 1975 was rescinded by President Nixon in 1971. Today, at the Shipyard there are approximately 7,000 civilian employees, plus Navy officers, enlisted,

tenant activities and government contract offices. Portsmouth Naval Shipyard remains a significant contributor to the security of our nation through the repair and overhaul of submarines.

Facility Description

The Portsmouth Naval Shipyard is located on historic Seavey Island on the north shore of the Piscataqua River. Seavey Island is at the mouth of the Great Bay Estuary two miles from the Atlantic Ocean.

At one time, the Shipyard consisted of five separate islands. As the Shipyard workload increased and more industrial space was required, the tidal flat areas between four of the islands--Pumpkin, Fernald's (Dennett's), Seavey and Jamaica--were filled from the turn of the century to the 70s. This larger land mass is now generally referred to as Seavey Island. Today, the Shipyard is composed of 376 buildings on 278 acres of land. The fifth island, Clark Island, connected to the Shipyard by a causeway about 1960, is undeveloped and heavily vegetated with shrubs and trees. In addition to other wildlife species, Clark Island is a nesting site for gulls, migrating song birds and other bird species.

Access to the Shipyard is by two bridges from the Kittery mainland. Entrance to the Shipyard is controlled by Department of Defense (DoD) Police.

Permit Requirements

CORRECTIVE ACTION PERMIT

The EPA Corrective Action permit requires the Shipyard to take corrective action at past sites (locations on the Shipyard which have a potential to be contaminated due to past disposal practices) in order to prevent adverse impacts on human health or the environment.

The permit identifies thirteen **Solid Waste Management Units (SWMUs)** relating to the above sites as requiring environmental study. These 13 SWMUs (described on Page 7) are areas which EPA, State of Maine Department of Environmental Protection (DEP) and the Navy found warranted investigation to determine if they have been contaminated as a result of past disposal practices of **hazardous substances**.

Specifically, the permit requires that the Navy perform a **Resource Conservation and Recovery Act (RCRA) Facility Investigation** to characterize the nature and extent of any releases of hazardous substances in the soils, **groundwater, surface water, biota, air, etc.** Also, the Navy must present a complete report to the regulatory agencies and the public which will include an evaluation of potential risk to human health and the environment. In addition, the Navy must propose standards and corrective measures which will protect the groundwater, soil, air, surface water and lake and river sediments.

Past Practices

Given the nature and extent of its industrial operations, the Navy has been involved with **toxic and hazardous materials** for several decades. Before hazardous waste classifications existed as we now know them, materials were disposed in accordance with standard industry practices of the day.

Existing Practices

TREATMENT & STORAGE PERMIT FOR HAZARDOUS WASTE

In addition to the EPA Corrective Action permit, the Shipyard also operates a permitted Hazardous Waste Storage Facility under RCRA and the Hazardous Waste, Septage and Solid Waste Management Act of Maine. As the permittee, the Shipyard is responsible for effective performance, adequate funding, operator staffing and training, and laboratory process controls, including appropriate quality assurance procedures.

RCRA is the authority under which the permit is issued. RCRA provides "cradle to grave" tracking of hazardous substances, from generator to transporter for treatment, storage or disposal.

How Waste is Handled Today

The Shipyard has operated a permitted hazardous waste storage facility since September 1985. This means that the Shipyard possesses the necessary facilities, procedures and

trained personnel to manage hazardous waste generation, handling, collection, storage and disposal. In addition, each person at the treatment and storage facilities is required to receive annual refresher training on hazardous waste regulations.

Shipyard-generated hazardous waste is disposed at licensed disposal facilities and certain liquid wastes are treated at the Shipyard Industrial Waste Treatment Plant.

Legal/Historical Context

The Navy Installation Restoration (IR) Program provides the authority under which Navy facilities are mandated to manage environmental restoration issues caused by past practices. Department of Defense (DoD) efforts to address the problem of past hazardous material sites on DoD installations preceded the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and Superfund Amendments and Reauthorization Act of 1986 (SARA) by several years. In 1975, the DoD began a pilot program to investigate past hazardous material disposal sites at DoD installations. The purpose of the Navy IR program is to identify, assess, and cleanup or control contamination from past hazardous material disposal operations and hazardous material spills at Navy activities.

The federal laws and regulations which affect the Navy's IR program include:

- Clean Water Act of 1967 (CWA)
- Clean Air Act of 1970 (CAA)
- Resource Conservation and Recovery Act of 1976 (RCRA)
- Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA)
- Hazardous and Solid Waste Amendments [to RCRA] of 1984 (HSWA)
- Superfund Amendments and Reauthorization Act of 1986 (SARA)
- National Contingency Plan (NCP)
- National Environmental Policy Act (NEPA)

Past Investigations

Chronology of Key Events

Jun 1983: Navy consultant completes Initial Assessment Study (IAS) of Portsmouth Naval Shipyard. The purpose of the IAS was to identify and assess sites posing a potential threat to human health or the environment from past hazardous materials operations.

May 1985: EPA requests information under Section 3007 of RCRA (HSWA).

Jun 1985: EPA conducts visual site inspection of Shipyard.

The RCRA Corrective Action Process

Jun 1986: Navy consultant completes the **Final Confirmation Study (FCS)** on hazardous material sites at the Shipyard. The purpose of the FCS was to evaluate previously identified sites to confirm the presence of contaminants through sampling and testing.

Jul 1986: EPA completes RCRA Facility Assessment.

Dec 1987: Technical Review Committee (TRC) is formed and meets for the first time.

Apr 1988: EPA issues draft Corrective Action Permit to the Shipyard and presents to the public.

Mar 1989: EPA issues final Permit.

Aug 1989: Navy submits draft workplan for environmental studies.

Nov 1989: Navy begins environmental field work in advance of an approved workplan with guidance from EPA and DEP. Intent is to save time while the draft workplan is being discussed by EPA, DEP and the Navy.

Jan 1991: EPA issues approval with conditions of second draft of Navy workplan.

Apr 1991: Navy revises workplan to meet EPA conditions.

Aug 1991: Navy submits final rewrite of RFIP at EPA's request.

Step 1: RCRA Facility Assessment (RFA). EPA conducts a comprehensive review of pertinent site information. This is followed by visual site inspection and, if necessary, a sampling visit to make release determinations.

Step 2: RCRA Facility Investigation (RFI). If the RFA indicates a suspected release, the regulatory agency prescribes an RFI. Such investigations can range from small, specific activities to complex, multi-media studies designed to investigate releases of concern, such like a Remedial Investigation under Superfund.

Step 3: Corrective Measures Study (CMS). If the RFI reveals a potential need for corrective measures, the agency requires the owner to perform a CMS to identify and recommend specific measures to correct the releases.

Past Public Informational Workshops

- 1st • Aug 1986
- 2nd • Oct 1986
- 3rd • Mar 1987
- 4th • May 1988
- 5th • Jun 1988 (with Shipyard participation)

Past Technical Review Committee Meetings

- 1st • Dec 1987
- 2nd • Mar 1989
- 3rd • Apr 1989
- 4th • Nov 1989
- 5th • Sep 1990
- 6th • Mar 1991
- 7th • May 1991
- 8th • Jul 1991
- 9th • Sep 1991
- 10th • Dec 1991

Areas of Study

The Corrective Action Permit targets 13 of the original 28 areas identified on the Shipyard which potentially could have been involved with releases of hazardous substances to the environment. These areas require investigations and are called "units" or "Solid Waste Management Units (SWMUs)" in the permit. The following paragraphs provide a brief description of each of these units.

SWMU 5 Industrial Waste Outfalls: Discharges into the river from industrial operations between 1945-1975. These

discharges were terminated in 1975 when the Shipyard began operating an Industrial Waste Treatment Plant (IWTP).

SWMU 6 Defense Reutilization Marketing Office Storage Yard: A 2-acre site that serves as a temporary storage area for excess Government property prior to recycling or disposal. Component parts of lead acid batteries and other hazardous materials were previously stored on the grounds.

SWMU 8 Jamaica Island Landfill (JILF): A 25-acre site, formerly a tidal flat area, that was used from 1946 to 1976 for landfilling. Materials deposited there include trash, plating sludges, possibly full cylinders of chlorine or acetylene gas, sandblast grit and asbestos insulation, dredge spoils and other industrial wastes. A portion of the area was capped with clay soil to reduce infiltration of rain and melted snow.

SWMU 9 Mercury Burial Sites: Two areas located within JILF where concrete vaults were used to dispose fluorescent bulbs, mercury switches and dials, mercury-contaminated debris and small quantities of elemental mercury.

SWMU 10 Battery Acid Tank: An underground tank, now removed, had been used to store waste battery acid.

SWMU 11 Waste Oil Tanks: Two underground tanks, now removed, had been used to temporarily store waste oil and chemicals before being shipped offsite.



Figure 2: Mercury Waste Burial Site #1 was excavated to determine the integrity of the concrete vaults and to obtain a sample of the surrounding soil.

SWMU 12 Boiler Blowdown Tank: Blowdown water from 3 of the Shipyard power plant boilers is temporarily stored for cooling in this underground storage tank.

SWMU 13, 16, 21 & 23 Rinse Tanks: Four underground tanks, now removed, had been used to temporarily store rinse water, or cleaning solutions.

SWMU 26 Portable Oil/Water Tanks: Portable tanks stationed at the berths and dry-docks used for collection of bilge waters and various other oily wastes.

SWMU 27 Fuel Oil Spill: A buried fuel line was found to be leaking in 1978 and was subsequently excavated and removed. This SWMU is also being studied to determine what impact, if any, the above-ground fuel farm tanks and piping may have had on the area.

Present Investigations

Present field investigations, which were initiated prior to EPA's approval of the RCRA Facility Investigation Proposal are on schedule and nearing completion. EPA and DEP have been involved through-

out the investigation to ensure that all work conforms to the Corrective Action Permit.

During the onshore field investigation, numerous samples were taken from the air, soil, groundwater, and surface water in order to determine the present environmental conditions at the Shipyard. Upon completion of the final analysis, the Navy's environmental consultant will prepare a comprehensive report to submit to EPA and DEP. This report will assist in developing an action plan that will include any necessary corrective measures at the SWMUs.

In addition to the onshore investigatory effort, the Corrective Action Permit requires offshore environmental sampling of the water, sediment, and biota of the Piscataqua River. The purpose of the offshore study is to assess the health of the ecosystem in the surrounding waters.

The offshore studies are being conducted through a memorandum of agreement between:

- Portsmouth Naval Shipyard,
- Environmental Research Lab in Narragansett Bay (ERLN),
 - Naval Oceans Systems Center (NOSC),

The offshore studies also involve participation from:

- University of New Hampshire (UNH) Jackson Estuarine Laboratory (JEL),
- University of Rhode Island Graduate School of Oceanography,
- McLaren/Hart Environmental Engineering, and
- Normandeau Associates.

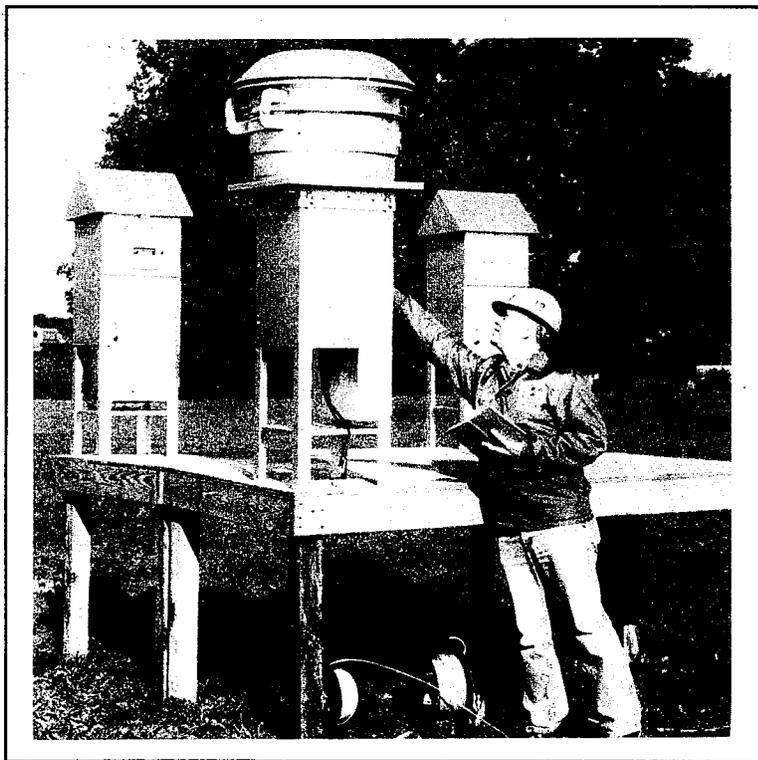


Figure 3: Air quality check. One of nine air monitoring stations used during a recent phase of field studies to determine potential air emissions.

Future Investigations

At the end of the current RCRA Facility Investigation the Navy will propose **media protection standards** for soil, sediment, air, surface water and groundwater for the protection of human health and the environment. The Navy will also draft a Corrective Measures Study to address the cleanup of any areas which exceed the media protection standards.

Where Can You Get More Information?

Copies of all public documents relating to the environmental cleanup are on file and can be reviewed at the Informational Repositories located at:

Rice Public Library
(Taylor Building)
8 Wentworth Street
Kittery, ME 03904
Telephone (207) 439-1553
Hours: Mon., Tue., Wed., Fri.:
10:00-5:00. Thu.: 10:00-8:00.
Sat.: 10:00-4:00.

Portsmouth Public Library
8 Islington Street
Portsmouth, NH 03801
Telephone (603) 427-1540
Hours: Mon.-Thu.: 9:00-9:00.
Fri.: 9:00-5:30. Sat.: 9:00-
5:00.

List of Contacts

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- - -

Technical Review Committee
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Technical Dictionary

Bedrock, rock which is either exposed at the surface or buried below the surficial soil. Bedrock can be either solid or fractured (cracked); fractured bedrock may contain enough water to support a drinking water well.

Biota, the animal and plant life of the region.

Blowdown, the withdrawal of water from the steam generating plant to control the solids balance within specified limits of concentration of these solids.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), regulates cleanup of hazardous waste sites. Also known as "Superfund." Amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA).

Corrective Action Permit, issued to the Portsmouth Naval Shipyard after public notice and comments under the provisions of the Hazardous and Solid Waste Amendments of 1984 to RCRA and Title 40 Code of Federal Regulations Section 264.101. The conditions imposed on the Shipyard as the permittee pertain to 13 SWMUs defined on Page 13 and described on Page 7 of this document.

Ecological Risk Assessment, determination of any potentially adverse effects on animal and plant life and their environment resulting from exposure to toxic substances from hazardous waste release.

Ecosystem, a system of organisms and their interaction with their community.

Feasibility Study (FS), a study that identifies and evaluates alternatives for addressing site contamination.

Final Confirmation Study (FCS), part of the Navy assessment program designed to identify contamination of Navy lands resulting from past operations and to institute corrective measures as needed. (See Page 6.)

Groundwater, water found beneath the earth's surface that fills pores between materials such as sand, soil, gravel and cracks in bedrock. Groundwater can serve as a source of drinking water.

Hazardous and Solid Waste Amendments [to RCRA] of 1984 (HSWA), regulations on waste minimization, land disposal of hazardous wastes, and underground storage tanks.

Hazardous Substance, an element, compound, or mixture that when discharged in any quantity, onto land or water, poses an imminent and substantial threat to public health and welfare.

Hazardous Waste, waste that because of its quantity, concentration, or characteristics may pose a substantial hazard to human health or the environment.

Inorganics, chemicals without organic carbon, including metals and other ions such as chloride, sulfate and nitrate. Metals are commonly referred to as inorganics.

Installation Restoration (IR) Program, Navy program developed to identify, assess, and clean-up or control contamination from past hazardous waste disposal activities.

Ion, an element or compound that has gained or lost an electron, so that it is no longer neutral electrically, but carries a charge.

Media Protection Standards (MPS), a detailed plan outlined in the Corrective Measures Permit with specific parameters to control the release of hazardous substances to at least the following media: groundwater, surface water and sediment, soil and air. The Navy will propose the standards and submit the information to EPA for review. EPA will then

establish the MPS based on the information but not limited to the information provided by the Navy. The development of the corrective measures is based on the MPS and the public will have an opportunity to comment on the MPS when it is proposed.

Monitoring Wells (MWs), wells drilled to "monitor" groundwater quality and water movement. These wells do not supply water for drinking or industrial use. MWs are used to verify the presence of groundwater and secure water samples that can be tested for chemical constituents. Comparing water levels in MWs shows the direction of groundwater flow.

Organics, chemicals containing carbon with the exception of carbon dioxide and carbonates.

Remedial Investigation (RI), an investigation which defines the types and extent of possibly hazardous metals or chemicals present at a site, and gathers information needed to identify possible ways to clean up the site. As its name suggests, it investigates remedies for problems.

Remediation, restoring to the natural or proper order. Cleanup.

Resource Conservation and Recovery Act (RCRA), establishes guidelines and standards for hazardous waste generation, transportation, treatment, storage, and disposal. Amended by HSWA.

Risk assessment, a qualitative or quantitative evaluation of human health and/or environmental risk resulting from exposure to a chemical or physical agent (pollutant); takes into account the toxicity of the pollutants and the likelihood of exposure to the pollutants.

Sediments, mineral or organic matter that settles at the bottom of a water body.

Solid Waste Management Unit (SWMU), any discernible waste management unit at a RCRA facility from which hazardous constituents might migrate, irrespective of whether the unit was intended for the management of solid and/or solid waste.

Superfund Amendments and Reauthorization Act of 1986 (SARA), establishes standards for cleanup activities and also stipulates the conditions for off-site disposal of wastes.

Surface water, water occurring immediately adjacent to land as overland flow, open channel flow, closed conduit flow and waters in lakes, ponds, reservoirs, estuaries and oceans.

Technical Review Committee (TRC), a committee established to review and comment on actions and proposed actions with respect to releases or threatened releases at sites. Committee participants may include representation from the EPA, appropriate state and local authorities, federal and state natural resources trustees, representatives of the community, and Navy.

Tidal Flat, land that is alternately exposed and covered by ordinary ebb and flow of the tide.

Toxic, poisonous.

Workplan, the RCRA Facility Investigation (RFI) Proposal (RFIP) developed in accordance with RCRA, RCRA regulations and relevant guidance documents in support of, and in response to, the HSWA permit issued by the EPA to Portsmouth Naval Shipyard.



Mailing List Additions

If you or someone you know would like to be placed on the RCRA Corrective Action mailing list for the Portsmouth Naval Shipyard site, please complete the form below, fold in half, tape closed, affix a stamp, and mail. Thank you.

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Affiliation: _____ Phone: _____

Fold
Here



Cut
Here

**Please
Place
Stamp
Here**

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