

Environmental Restoration Installation Category

INTRODUCTION

Mission || The primary mission of the Portsmouth Naval Shipyard (PNSY) is to overhaul, repair, and modernize the U.S. Navy's nuclear-powered fast attack submarine fleet and to complete the work in a safe, timely, and cost-effective manner. PNSY was officially established as a Federal facility in 1800 with the primary mission of building and repairing naval warships. PNSY built submarines until 1969 when the mission was realigned to function exclusively as a submarine overhaul facility. PNSY is one of only four remaining naval shipyards in the nation and is currently undertaking multiple construction projects to modernize the three dry docks to allow servicing of all active *Los Angeles* and *Virginia*-class fast attack nuclear-powered submarines, including the most technologically-advanced nuclear-powered submarines in the world.

Population || Approximately 6,400 civilian PNSY employees and 800 active duty military currently work at the installation. Although PNSY functions primarily as an industrial facility for the overhauling of submarines, it also provides support facilities for the Navy Survival, Evasion, Resistance, & Escape (SERE) School, Naval Branch Health Clinic Portsmouth, Army New England Recruiting Battalion, and Defense Logistics Agency. PNSY also supports military personnel with on-base berthing, family programs, and recreational opportunities.

Setting || PNSY is located in the Town of Kittery at the southernmost tip of the State of Maine (ME), approximately 50 miles north of Boston, Massachusetts. PNSY encompasses Seavey Island, which is situated at the mouth of the Piscataqua River. The river is a tidal estuary that forms a natural boundary between ME and New Hampshire (NH). This federally-owned island is located across the harbor from Portsmouth, NH, with access to the mainland via two bridges connected to Kittery, ME.

Acreeage || PNSY is approximately 288 acres in size, over 62 acres of which are managed as Controlled Industrial Area (CIA). Industrial activities are concentrated at the western portion of the base within the CIA, which includes dry docks, vessel berths, and numerous trade shop buildings. Areas outside the CIA generally include additional trade shops, administration offices, military housing, recreational facilities, and vehicle parking.



U.S. Navy Photo/Released



U.S. Navy photo/Released

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ENVIRONMENTAL RESTORATION BACKGROUND

Program History | In 1983, an Initial Assessment Study identified 28 potentially-contaminated sites at PNSY requiring further investigation. Following this investigation, 15 of the 28 original sites were eliminated from the study. The 13 remaining sites were grouped together, based upon similar contaminants and/or locations, into seven distinct Operable Units (OUs) and a single Site Screening Area. The Navy formally established the Environmental Restoration (ER) Program in 1986 to address these sites. PNSY was placed on the National Priorities List (NPL) in May 1994, and in September 1999, a Federal Facility Agreement (FFA) was signed by the Navy and the Environmental Protection Agency (EPA). The Maine Department of Environmental Protection (MEDEP) elected not to be a party to the FFA, but to maintain a participatory role under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

Program Challenges | PNSY was built on a combination of five islands historically connected by over 90 acres of fill material. The heterogeneous composition of the fill makes investigation, delineation, and cleanup of ER sites exceedingly challenging. PNSY is a 223-year-old facility with a long industrial history involving the manufacturing, processing, handling, and disposal of various hazardous and non-hazardous materials used in shipbuilding. Many of these materials were managed in accordance with procedures accepted at that time, but unfortunately, resulted in the contamination of soil, groundwater, and sediment at the installation. In addition, the PNSY National Register Eligible Historic District encompasses over 200 of the 288 acres of the installation, with special consideration afforded to certain buildings, structures, landscape features, and areas of archaeological sensitivity. This contributes to the challenges of working within the installation, as facility modifications and ground disturbance within certain areas often require mitigation and monitoring. The extraordinary diversity of river usage, from recreational sailing and boating to commercial fishing and lobstering, creates a unique environment. Many residential homes, historic and recreational parks, marinas, commercial businesses, and industrial facilities are situated along both sides of the Piscataqua River.

PROGRAM ACCOMPLISHMENTS – FY22 AND FY23

The ER Program is on the verge of achieving the ultimate accomplishment with respect to CERCLA ER: delisting of PNSY from the NPL. On August 16, 2023, the EPA published the *Notification of the Proposed Delisting of PNSY from the NPL* in the Federal Register. In February 2024, PNSY will officially be delisted from the NPL upon publication of the final *Notice of Delisting* by the EPA in the Federal Register.

The delisting will have been accomplished through more than 30 years of accelerated and innovative assessment and remediation. This effort has included multiple rounds of field investigations, six Remedial Investigation Reports, six Feasibility Studies, six Proposed Plans, and six Records of Decision (RODs). Construction of all remedies has been completed, and the associated Remedial Action Completion Reports have been finalized. Four Five-Year Reviews have been completed, with the results of all of the reviews documenting that the implemented remedies are protective of human health and the environment. In FY22 and FY23, the PNSY ER Program completed a number of activities that have led to the delisting, as detailed on the following pages.



Five-Year Review || In FY22, the Navy completed the fourth Five-Year Review for PNSY. The Five-Year Review concluded that all remedies remain protective of human health and the environment. This conclusion was critical to allowing the EPA to begin the NPL delisting process.

PFAS Management || In FY23, the ER Program successfully amended the groundwater Land Use Control (LUC) component of the OU3 remedy to include four per- and polyfluoroalkyl substances (PFAS) screening areas to allow management of PFAS via the CERCLA process. Amending the OU3 LUC to include PFAS eliminated the need to prepare a separate Proposed Plan and ROD for PFAS and thereby reduced the time required to have the PFAS remedy in place by 18 months.

Long-term Management & LUC Inspections || In FY22 and FY23, the ER Program continued performance of Long-term Management, LUC Inspections, and Groundwater Monitoring. These activities confirmed the effectiveness of the chosen and implemented remedies in all locations, documenting that all remedies were protective of human health and the environment. The results further reduced the need for ongoing groundwater monitoring at OU2 and OU3. The frequency of sampling was reduced from annually to every 5 years at OU2, and 9 wells were removed from the OU3 long-term monitoring program. This optimization of the long-term monitoring program will yield a significant cost savings to the Navy.

ER Area Construction Support || In FY22 and FY23, the ER Program provided technical and regulatory support to all stakeholders on two major projects within ER boundaries at PNSY: the \$1.8B Modernization and Expansion of Dry Dock 1 (P381), and the \$100M Consolidation and Construction of the Paint, Blast, and Rubber Facility. Combined, the projects to date have included characterization, excavation, management, and disposal of nearly 75,000 tons of ER soils, including 6,300 tons requiring disposal as hazardous waste. ER Program support ensured regulatory compliance and appropriate transportation and disposal, reducing delays and costs associated with disposal fees and transportation.

Final Close-Out Report Preparation || In FY23, the ER Program prepared the Final Close-Out Report (FCOR) on behalf of the EPA. The FCOR is an EPA report that documents that all remedies are in place at a facility. In June 2023, the FCOR was signed by the EPA, and MEDEP concurred. Completion of the FCOR allows for PNSY to be delisted from the NPL.

ER Area Beneficial Reuse Support || In FY22 and FY23, the ER Program provided regulatory and technical support to PWD-ME Design and Construction Managers and PNSY tenants towards beneficial reuse of multiple locations within ER areas. Representative examples include:

- Finalization of the construction of a new facility for Naval Branch Health Clinic Portsmouth within OU7.
- Evaluation of the expansion of much-needed parking facilities on the Jamaica Island Landfill cap (OU3).
- Construction support for improvement of on-base berthing and MWR facilities within or immediately adjacent to OU3 and OU7.

Delisting of a DOD facility from the NPL is a major accomplishment; in the past 20 years, only 15 federal facilities have been fully delisted, and of these, only one has been a Navy facility. Key ER Program components that have led to the unique achievement of delisting from the NPL are detailed below.

PROGRAM MANAGEMENT

Management Approach || The PNSY ER Program has been successful in maintaining and promoting environmental stewardship, while never losing focus on PNSY's mission to support Navy Warfighters. Specific program objectives include: closure of active sites to prepare for delisting; optimizing existing remediation systems and long-term monitoring plans; maintaining community relations and stakeholder partnerships after delisting; and providing efficient program management. The ER Program is committed to the protection of human health and the environment, accomplished in part through direct partnership with regulatory counterparts and collaboration with local community stakeholders. Restoring PNSY ER sites impacted by historic activities protects military personnel, their families, and the public from potential human health, environmental, and safety hazards.

Leadership Involvement || Command support is provided by the PNSY Commanding Officer (CO) and Executive



Officer (XO), the NAVFAC Public Works Department Maine (PWD-ME) Public Works Officer (PWO), and the Public Affairs Office (PAO). The PNSY Command provides superb leadership support of the ER Program in its steadfast dedication to environmental stewardship. The PNSY Command has also been consistently involved in community interaction via Remedial Advisory Board (RAB) meeting attendance, All-Hands outreach, and response to public inquiries. The PNSY Command is committed to continued community outreach even after PNSY is delisted from the NPL.

Organization Staffing || The Remedial Project Manager (RPM), with Naval Facilities Engineering System Command (NAVFAC) Mid-Atlantic, is the lead for the Navy with regards to regulatory collaboration, technical review, contractor management, funding and budgeting requirements, and overall program management. The PNSY ER Program Coordinator, with the NAVFAC PWD-ME Environmental Division, provides installation support for the RPM, serves as the local technical representative for all ER-related issues at PNSY, and enforces compliance for PNSY and contractors conducting work within ER sites. The PWD-ME EV Division Director provides installation ER support and command coordination and has served as the Navy RAB Co-chair.

Substantive Involvement of Internal Offices || Since the majority of the areas at PNSY are used for mission-critical purposes, close coordination with PNSY base personnel has been critical during the development of remedies for all of the OUs. All the remedies were designed to protect human health and the environment, while minimizing mission impacts. Working with internal stakeholders, PNSY has facilitated more efficient land use planning and construction and mission coordination through effective use of the base mapping system, Environmental Checklists, excavation permits, All-Hands messages, and personnel training. Through the use of these tools, potential environmental concerns and impacts of the modernization and expansion of PNSY Dry Dock 1 and the consolidation and construction of the Paint, Blast, and Rubber Facility have been minimized.

Site Management Plan || The ER investigation and cleanup schedules were established and have been updated annually as part of the Site Management Plan (SMP). The SMP has served as a critical management tool for planning, reviewing, and setting priorities for ER Program activities at PNSY; the aggressive schedule established in the SMP has allowed the timely delisting of PNSY from the NPL.

STAKEHOLDER INTERACTION

Community Involvement || The Navy, EPA, MEDEP, and representatives of local communities from Kittery, ME and Portsmouth, NH have worked together for nearly 30 years as part of a RAB. Evolving from the Technical Review Committee formed in 1987, the RAB was established in 1995 and has maintained a formal charter to provide an open forum between the Navy, regulatory agencies, and local community members to discuss PNSY ER investigation and cleanup activities. NH Department of Environmental Services representatives have also historically participated in the RAB. The public has been represented in the process by residents as well as the Seacoast Anti-Pollution League, a local citizen's group supported by the EPA's Technical Assistance Grant. In May 2023, the RAB met to discuss the delisting process. Because of the impending delisting of PNSY from the NPL, the RAB agreed to adjourn. Adjournment occurred in November 2023 in accordance with CERCLA protocols. The Navy will continue to prepare an annual fact sheet with updates on activities that have occurred in the ER Program and will welcome the ongoing involvement of past RAB members and the public in the PNSY ER Program process.

Promotion of Public Access || To keep the community and stakeholders informed on environmental issues at PNSY, an index of ER Program documents is maintained in an Administrative Record File (ARF) for review by the public in repositories at the Portsmouth Public Library in Portsmouth, NH and the Rice Public Library in Kittery, ME. Additionally, the Navy hosts a public website for PNSY that includes site description and background information, community outreach information, and access to the ARF, allowing the community to download any of the final pre-decision documents. The EPA also maintains a website for PNSY that includes a full docket related to the delisting.



Opportunities for Continued Public Involvement || After delisting of PNSY from the NPL, the Navy will continue to provide updates to the public regarding ongoing Long-term Management, LUC inspections, and other ER Program activities. This information sharing will occur through preparation of an annual fact sheet and via the Navy's public website.

Installation Education & Awareness || PNSY provides frequent education on the ER Program to PNSY personnel

Modernization/Expansion of Dry Dock 1 (P381)



U.S. Navy Photo/Released

Construction of Paint, Blast, and Rubber Facility (P293)



U.S. Navy Photo/Released

through many forms of communication, including All-Hands messages, signage, PNSY Instructions, PNSY's intranet website, and NAVFAC's PNSY ER public website. Guidance and direction is also consistently provided to PNSY tenants and NAVFAC PWD-ME planning, engineering, construction, and facilities management branches. PWD-ME EV provides training to construction and design personnel and educates contractors through participation in pre-construction meetings and weekly environmental meetings. As noted above, the ER Program has played an integral role in regulatory and technical support on mission critical construction projects within ER areas.

ORIENTATION TO MISSION

Enhancement of Military Readiness & Mitigation of Restrictions || The ER Program is providing key technical and regulatory support to NAVFAC Design and Construction Managers, contractors, tenants, regulators, and the public on two major projects within ER boundaries at PNSY: the Modernization and Expansion of Dry Dock 1 (P381) and Consolidation/Construction of the Paint, Blast, and Rubber Facility (P293). Both of these projects are critical to the mission of overhauling and modernizing submarines. ER Program support has ensured regulatory compliance and appropriate transportation and disposal, minimizing delays and costs associated with disposal fees and transportation.

EFFECTIVENESS AND EFFICIENCIES

Quantity & Scale of Projects || The PNSY ER Program has completed more than 30 years of accelerated and innovative assessment and remediation, including multiple rounds of field investigations, six Remedial Investigation Reports, six Feasibility Studies, six Proposed Plans, and six RODs. Construction of all remedies has been completed, and the associated Remedial Action Completion Reports have been finalized. Four Five-Year Reviews have been completed, with the results of all the reviews confirming and documenting that the implemented remedies are protective of human health and the environment.

Accelerated Environmental Cleanup || The ER Program undertook an accelerated investigation for PFAS at PNSY. From 2020 to 2022, the ER Program worked closely to complete several investigations, compile all of the data, and prepare an approved Site Screening Process Report. The ER Program coordinated with the EPA to incorporate PFAS LUCs into the OU3 ROD through development of an Explanation of Significant Differences (ESD). This streamlined approach eliminated the need to prepare a separate Proposed Plan and ROD for PFAS, reducing the time required to have the PFAS remedy in place by 18 months and thereby significantly reducing the costs for additional investigation and remediation.

TECHNICAL MERIT

Innovative Technology || The ER Program utilized an innovative approach to completing the remedy for PFAS by developing LUCs (restrictions against groundwater usage). The LUCs allow for continued use of these sites in support of the mission and are considered protective of human health and the environment. Furthermore, by preparing an ESD for OU3, the ER Program was able to avoid the time and expense required for preparation of a separate Proposed Plan and ROD for this remedy. PNSY is one of the only Navy facilities that has a Remedy-in-Place for PFAS.

TRANSFERABILITY

Ability to Adopt/Transfer Program Innovations || The extensive collaborative effort of the Navy, EPA, MEDEP, and other stakeholders in designing and finalizing the OU3 ESD for PFAS may serve as a template for management of

PFAS at sites throughout EPA Region 1. PFAS is an emerging contaminant that currently is receiving a great deal of attention from regulators and the public. Preparing this remedy for PFAS was a great accomplishment for the ER Program, as PNSY currently has one of the only Remedies-in-Place for PFAS. This accomplishment speaks to the integrity of the ER Program and its ability to produce a practical, protective approach that others can now use as a guide for successful long-term site management.

Engineering, Science & Research Contributions || The large, mission-critical Modernization and Expansion of Dry Dock 1 (P381) that is underway at PNSY is being performed under very unique circumstances, including work within an ER site, adjacent to a river, and below water level. Given the location and circumstances, the project team (including the ER Program) have had to develop complex, site-specific strategies and protocols for environmental compliance. As the project is being performed by some of the largest construction companies in the Northeast, it is expected that the ER compliance strategies utilized at PNSY will subsequently be utilized on construction projects throughout the country.

FUTURE IMPACTS / OUTCOMES

Program Endurance & Framework || The LUCs and Long-term Management Plans (LTMPs) required pursuant to the LUC Remedial Designs will continue to provide appropriate protection of human health and the environment while considering land use management. The collaborative agreements established under the ER Program are firmly based on sound science, planning, and execution, with every decision providing environmental stewardship and supporting the PNSY mission. By achieving Remedy-in-Place for each site, the PNSY ER Program will have a lasting benefit and serve as a framework for continued environmental protection.

Restoration Partnerships & ER Area Beneficial Reuse Support || Through 30 years of assessment and remediation at PNSY, the ER Program has established strong partnerships with all stakeholders, including regulators, tenants, and the public. During FY22 and FY23, these partnerships were bolstered through cooperation on several projects within ER sites, including:

- Partnerships with the Navy Bureau of Medicine and Surgery, NAVFAC Construction Managers, Code 106, regulators, and contractors on finalization of the construction of a new facility for Naval Branch Health Clinic Portsmouth within OU7.
- Partnerships with the PNSY CO and XO, NAVFAC PWD-ME PWO and other leadership, and PNSY tenants on the evaluation of the expansion of much-needed parking facilities on the Jamaica Island Landfill cap (OU3).
- Partnerships with MWR, NAVFAC Construction Managers, Code 106, regulators, and contractors on construction support for improvement of on-base berthing and MWR facilities within OU3 and OU7.

Naval Branch Health Clinic Portsmouth



U.S. Navy Photo/Released

Reducing Risk to Human Health & the Environment || All remedies at PNSY are in place and currently protecting human health and the environment. Four Five-Year Reviews have been conducted at PNSY. Each Five-Year Review resulted in documentation that all remedies are functioning as intended and are protective of human health and the environment. Although PNSY is being delisted from the NPL, the Navy is committed to continuing to integrate environmental stewardship into day-to-day activities and long-term planning processes across all levels and functions of the Navy enterprise. The Navy will continue long-term stewardship activities that include inspection, monitoring, and operation and maintenance, as needed, to maintain institutional controls and security, and to ensure future land use is consistent with requirements identified in the RODs. The EPA will continue to assess the condition and effectiveness of the selected Remedies-in-Place at PNSY every five years to ensure that the remedies continue to protect human health and the environment, as required by the Superfund law.

Green Remediation || Through 30 years of assessment and remediation at PNSY, the ER Program has selected a number of green remediation techniques to minimize the environmental impacts of the site cleanup, including:

- Placement of caps at OU2 and OU3 to minimize the quantity of waste requiring off-site transportation;
- On-site treatment of heavy metal-containing soils to reduce waste transportation distances;
- Stabilization of embankments on the Piscataqua River to prevent siltation and contaminant migration; and,
- Removal of waste fill materials and subsequent construction of a salt marsh at OU3.

In FY22 and FY23, LUC inspections and groundwater monitoring demonstrated that these innovative, green remediation techniques continue to protect human health and the environment.

Sustainable Use of Resources || The two major, mission critical projects ongoing at PNSY, Modernization and Expansion of Dry Dock 1 (P381) and Consolidation and Construction of the Paint, Blast, and Rubber Facility (P293), have involved the excavation of nearly 75,000 tons of ER soil to date. Careful testing, segregation, and management of the ER soil has minimized the quantity of soil requiring offsite transportation and disposal as hazardous waste. There is an approximately 600-mile difference in roundtrip distance for waste transport to a hazardous waste disposal facility in Canada versus a non-hazardous waste disposal facility in NH. As such, proper characterization and management (versus assumption of hazardous waste) has potentially reduced travel by up to 1.3 million miles. This effective management of transportation and disposal has also substantially reduced project costs and time.

Summary || In FY22 and FY23, the PNSY ER Program continued its outreach and relationships with regulators, the public and stakeholders. The PNSY ER Program accelerated environmental investigation and cleanup and implemented green and innovative remedial techniques. Most importantly, a long-term management framework was put into place that will endure over time and provide continued protection of human health and the environment for the future of PNSY, all while focusing on the PNSY mission and the interests of the installation. PNSY is on the verge of achieving the ultimate goal of an ER Program by being delisted from the NPL. The initial public notice was published in August 2023, and no comments from the public were received on the delisting. Once the EPA publishes the final notice in the Federal Register (February 2024), PNSY will be officially delisted from the NPL.



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EPA Proposes to Remove Portsmouth Naval Shipyard Superfund Site in Kittery, Maine from Superfund List

Public comments accepted until September 15

August 16, 2023

Contact Information

David Deegan (deegan.dave@epa.gov)

(617) 918-1017

BOSTON – The U.S. Environmental Protection Agency (EPA) has proposed to remove the Portsmouth Naval Shipyard, located in Kittery, Maine, from the National Priorities List (NPL), commonly referred to as Superfund. EPA has determined that the site cleanup is complete, and no further remedial action is required. Operation, maintenance, and monitoring activities will continue at the site as needed, as well as five-year reviews to ensure the remedies continue to protect human health and the environment. The agency will accept public comments on the proposed deletion until September 15, 2023.