

Final

**Record of Decision
Site 23: Building LP-20 Plating Shop**

**Naval Station Norfolk
Norfolk, Virginia**



Prepared by
**Department of the Navy
Naval Facilities Engineering Command
Mid-Atlantic**

September 2008

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Acronyms and Abbreviations

ARAR	applicable or relevant and appropriate requirement
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
COPC	chemical of potential concern
DoD	Department of Defense
EE/CA	Engineering Evaluation/Cost Analysis
FFA	Federal Facilities Agreement
FFS	Focused Feasibility Study
ft ²	square feet
IR	Installation Restoration
LUC	land use control
Navy	United States Department of the Navy
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
NSN	Naval Station Norfolk
NTCRA	Non-time-critical Removal Action
O&M	operation and maintenance
PAH	polynuclear aromatic hydrocarbon
RAB	Restoration Advisory Board
RAO	Remedial Action Objectives
RBC	risk-based concentration
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
ROD	Record of Decision
SMP	Site Management Plan
SVOC	semivolatile organic compound
SWMU	solid waste management unit
USEPA	United States Environmental Protection Agency
UST	underground storage tank
VDEQ	Virginia Department of Environmental Quality
VOC	volatile organic compound

SECTION 1

Declaration

1.1 Site Name and Location

Site 23, Building LP-20 Plating Shop
Naval Station Norfolk
Norfolk, Virginia
USEPA ID: VA6170061463

1.2 Statement of Basis and Purpose

This Record of Decision (ROD) presents the selected remedy for soil at Site 23, Building LP-20 Plating Shop, within Naval Station Norfolk (NSN). (Groundwater associated with Site 23 is being addressed as part of Site 20, Building LP-20 Site.) This determination has been made in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended, and to the extent practicable, with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This decision is based on the Administrative Record for this site.

The United States Department of the Navy (Navy) and the United States Environmental Protection Agency (USEPA) Region III jointly issue this ROD. The Virginia Department of Environmental Quality (VDEQ) concurs with the selected remedy.

1.3 Assessment of the Site

Previous investigations have identified the presence of chemicals in soil at concentrations that pose a potential human health risk at Site 23. The response action selected in this ROD is necessary to protect the public health, welfare, and the environment from actual or threatened releases of hazardous substances into the environment from the site.

1.4 Description of the Selected Remedy

The selected remedy to address contaminated soil at Site 23 is Land Use Controls (LUCs). This remedy was selected following the completion of the *Site 23 Proposed Plan, Naval Station Norfolk, Norfolk, Virginia* (CH2M HILL, 2008c) that was made available for public review and comment as well as presented at a public meeting. This selected remedy was based on a detailed evaluation of alternatives using the following criteria: protection of human health, long-term effectiveness and performance, reduction in toxicity, mobility or volume of contamination, short-term effectiveness, implementability, cost, state acceptance, and community acceptance. There were no applicable or relevant and appropriate requirements (ARARs) for this selected remedy. Implementing LUCs provides the best alternative for eliminating current and future exposure pathways to onsite contaminants.

- Potential land use that will be available at the site as a result of the selected remedy (Section 2.6)
- Estimated capital, annual operation and maintenance (O&M), and total present worth costs; discount rate; and the number of years over which the remedy cost estimates are projected (Section 2.9)
- Key factors leading to the selection of the remedy (Section 2.11)

1.7 Authorizing Signatures

The Navy and the USEPA selected this remedy with the concurrence of VDEQ.

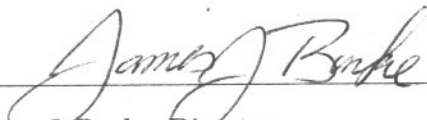
Concur and recommend for immediate implementation:



S. J. DINOBILE
Captain, U.S. Navy
Commanding Officer
Naval Station Norfolk

25 SEP 2008

Date



James J. Burke, Director
Hazardous Site Cleanup Division
USEPA Region III

9/30/08

Date

SECTION 2

Decision Summary

This ROD describes the Navy and the USEPA's selected remedy for Site 23, Building LP-20 Plating Shop at NSN, Norfolk, Virginia. VDEQ concurs with the selected remedy. The Navy is the lead agency under CERCLA and provides funding for site cleanups. NSN (EPA ID# VA6170061463) was placed on USEPA's National Priorities List (NPL) on April 1, 1997.

NSN was included under the "Federal Facilities" section of the NPL in which federal agencies are considered responsible for conducting response actions at facilities under their jurisdiction. A FFA between the USEPA Region III and NSN was finalized in February 1999 (USEPA/Navy, 1999). Because NSN has a final FFA in place, the USEPA continues to function in an oversight role for the management and cleanup of the Installation Restoration (IR) Program sites and solid waste management units (SWMUs) at NSN.

2.1 Site Name, Location, and Description

NSN is located in the northwest portion of the City of Norfolk, Virginia (**Figure 2-1**). NSN covers approximately 4,631 acres and is the largest naval base in the United States. NSN includes approximately 4,000 buildings, 20 piers, and an airfield. The western portion of NSN is a developed waterfront area containing the piers and facilities for loading, unloading, and servicing naval vessels.

A list of all IR Program sites can be found in the current version of the Site Management Plan (SMP) (CH2M HILL, 2008b), which is located in the Administrative Record. The SMP contains the location, description, contaminants of concern, and cleanup status of each site, including Site 23, at NSN.

Site 23 (Building LP-20 Plating Shop) is located within the boundary of the Building LP-20 Site (Site 20). Site 23 occupies approximately 9,500 square feet (ft²) of the building, which is approximately one quarter of the total area (**Figure 2-2**). Building LP-20 is one of many large buildings located northwest of the main runway. The plating shop contained seven process pits that extended beneath the concrete slab floor and were used for cleaning, stripping, and plating engine parts. Rinse waters generated from these activities were transferred to the industrial wastewater treatment plant via underground piping. A NTCRA was completed in 2007 to install a concrete cover over the former plating shop floor to prevent exposure to contaminated soil beneath the site. Currently, Building LP-20 is used as a motor pool and office space (excluding the portion that is Site 23). It is anticipated that use of the site will continue to be industrial.

2.2 Site History and Enforcement Activities

An enforcement order for the Plating Shop was issued in December 1990. Under the Resource Conservation and Recovery Act (RCRA) program, a Clean Closure Plan and Contingency Plan were completed for Site 23 in 1993 and approved by VDEQ in September

plating shop and former process pits. Two deep soil samples were also collected along the industrial waste sewer running through the plating shop. In addition, a total of eight soil samples were collected from background locations in the vicinity of Building LF-18. Groundwater samples were also collected from up gradient and down gradient locations as well as within the plating shop. Furthermore, five concrete floor samples within the plating shop and background concrete samples from areas with little to no industrial activity were collected.

- **Phase II Summary** — The objective of the Phase II investigation was to further delineate the areas of subsurface soil contamination where the concentrations of contamination identified in the Phase I sampling exceeded the risk-based criteria. Thirteen additional borings and 21 additional soil samples were selected to provide further horizontal and vertical delineation of contamination.
- **Phase III Summary** — The objective of the Phase III investigation was to evaluate the background soil conditions. Three additional background soils samples were collected during this sampling event.

Site 23 LP-20 Plating Shop Site Investigation

Following the transfer of regulatory oversight of Site 23 to the CERCLA program, a Site Investigation was initiated in 2004 (CH2M HILL, 2006a). Surface and subsurface soil samples were collected from three different areas of the plating shop including the previously identified hotspots, metal plating and process pits, and outside the process pits. A total of 55 samples were collected at 26 sample locations. The number and placement of samples were designed to fill spatial gaps from previous sampling events and delineate soil contamination within and outside of the pits.

Specifically, the objective of the investigation was to:

- Further investigate the vertical extent of soil contamination in identified hotspots
- Determine the nature and extent of soil contamination in the metal plating/processing pits
- Delineate soil contamination within the Plating Shop areas outside of the pits
- Evaluate for a more extensive list of analytes (chemicals) compared to the limited analysis conducted during the previous RCRA investigations

The Site Investigation recommended that an interim removal action (consisting of the installation of a cover and implementation of LUCs) be evaluated. In May of 2005, the NSN Tier I Partnering Team agreed to conduct the evaluation of an interim removal action to address the soils at Site 23 in an Engineering Evaluation/Cost Analysis (EE/CA).

Site 23 EE/CA

Based on the Site Investigation results and recommendations by the NSN Tier I Partnering Team, an EE/CA was prepared in 2006 (CH2M HILL, 2006b). The EE/CA was performed to identify and analyze alternatives to mitigate potential human health risk associated with contaminated soil in the former process pits at Site 23, Building LP-20 Plating Shop. Three alternatives were evaluated under the EE/CA, including:

University, in Norfolk, Virginia. Public notice of the meeting and availability of documents were placed in *The Virginian Pilot* newspaper on August 4, 2008.

The public information repositories for Site 23, Building LP-20 Plating-Shop documents, including those in the Administrative Record used in the remedy selection process for Site 23, are maintained in the following locations:

Naval Facilities Engineering Command, Atlantic
Attention: Kelly Stirling, Public Affairs Officer
6506 Hampton Boulevard
Norfolk, Virginia 23508-1278
(757) 322-8005

Kirn Memorial Branch/Norfolk Public Library
301 East City Hall Avenue
Norfolk, Virginia 23510
(757) 644-7323

2.4 Scope and Role of Response Action

In 1975, the Department of Defense (DoD) began the IR Program and military facilities to identify, evaluate, and remediate environmental contamination resulting from activities that involved hazardous and toxic materials. In 1976, Congress passed RCRA to address human health and environmental issues related to the management and disposal practices of hazardous wastes. In 1980, Congress passed the CERCLA, more commonly known as "Superfund." This program was put in place to investigate and remediate areas affected by past hazardous waste management practices. The CERCLA program is administered by the USEPA. The DoD's IR Program is implemented in accordance with CERCLA, the Defense Environmental Restoration Program (10 U.S.C. 2701 *et seq.*), and all applicable state laws. Additionally, the President of the United States, by Executive Order, has delegated certain CERCLA responsibilities to DoD for facilities such as Naval Station Norfolk.

In 1997, NSN was placed on USEPA's NPL of Superfund sites. The purpose of the selected remedy is to address all of the potential threats posed by Site 23.

The selected remedy for Site 23 is based on information obtained from investigations conducted under both RCRA and CERCLA programs, data analysis, and streamlined risk assessment; and takes into account the Navy's future plans for the site. The selected remedy identified in this ROD addresses the contaminated soil at the site as identified in previous reports and comprises the overall LUCs for soil at Site 23.

Within 90 days following the execution of this ROD, the Navy shall develop, and submit to the USEPA and VDEQ, in accordance with the FFA, a Remedial Design that provides for LUC implementation, maintenance actions, periodic inspections, and reporting. The Navy will implement, maintain, monitor, and enforce the LUCs to ensure future use of the site does not provide for the potential exposure to unacceptable risks.

concrete cover that was installed during the NTCRA eliminates an exposure pathway and prevents unacceptable exposure to the soil as long as the LUCs are enforced.

2.6 Current and Potential Future Site and Resource Uses

NSN began operation in 1917, when the U.S. Navy acquired 474 acres of land to develop a naval base to support World War I activities. Bulkheads were built along the coast to extend available land and, after extensive dredge and fill operations, the total land under Navy control was 792 acres. An additional 143 acres of land were acquired in 1918 and officially commissioned as Naval Air Station Norfolk. Improvements to the piers and expansion of supply/material handling facilities were also completed between 1936 and 1941.

During World War II major construction projects were completed at NSN, including a power plant, numerous runways and hangars, a tank farm, and several barracks/housing complexes. During this time, the area of NSN expanded to more than 2,100 acres. After World War II, NSN continued to acquire land through various types of land transfers and dredge and fill operations conducted in areas of Mason Creek, the Bousch Creek Basins, and Willoughby Bay.

During its history, NSN has expanded to become the world's largest naval installation, with 105 ships homeported in Norfolk. The facility currently has 20 piers handling approximately 3,100 ship movements annually. NSN currently covers approximately 4,631 acres. The mission of NSN is to provide fleet support and readiness for the U.S. Atlantic Fleet. Future land use at Site 23 is expected to remain similar to the current industrial land use.

2.7 Summary of Risks and Recommendations

2.7.1 Human Health Risk Summary

A streamlined risk evaluation was conducted as part of the EE/CA (CH2M HILL, 2006b) to evaluate the potential human health risks associated with exposure to soil at Site 23. Exposure scenarios evaluated were future onsite industrial worker and future construction worker. The screening of the Site 23 surface soil and subsurface soil data resulted in a number of COPCs which indicates a potential for unacceptable human health risks associated with exposure to the surface and subsurface soil at Site 23. For surface soil, the COPCs retained are inorganic constituents: cadmium, chromium, lead, and nickel. The COPCs retained for the subsurface soil are polynuclear aromatic hydrocarbons (PAHs) and metals: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene, arsenic, and cadmium. **Table 2-1** presents the conclusions of the human health risk screening assessment prior to the installation of the concrete cover.

Implementation of the selected alternative from the EE/CA was completed in 2007. A concrete cover was installed over the surface soil to provide a protective barrier as well as serve as usable warehousing space for the Site 23 portion of LP-20. As a result, there is no potential exposure to the surface and subsurface soil, and no unacceptable risks to current/future onsite workers as long as the cover is not disturbed and is properly maintained.

The No Action involves no remedial action, and is included as a baseline for comparison. There is no cost associated with the No Action alternative. The presence of the concrete cover at Site 23 prevents exposure to the soil beneath the site under current use; however, the No Action alternative does not include measures to ensure that unacceptable exposures are prevented in the future.

The major components of implementing the LUCs alternative include preparing a Remedial Design, posting signage, conducting periodic site inspections, and conducting five year site reviews.

Table 2-3 provides a summary of the capital, annual O&M, and present worth cost for each of the alternatives.

TABLE 2-3
Descriptions of Alternatives

Alternative	Components	Details	Cost ¹	
1—No Action	Existing Site 23 Area	Not Applicable	Capital Cost	\$0
			Annual O&M	\$0
			Present-Worth	\$0
			Time Frame >70 years	
2—Land Use Controls	Land Use Controls (LUCs) to cover Site 23 Area	- Sign Installation		
		- Remedial Design for LUCs	Capital Cost	\$11,600
		- Integrity Inspections	Annual O&M	\$1,526
		- Statutory remedy 5-year reviews	Net Present-Worth	\$64,998
			Time Frame 30 years	

¹ The information in this cost estimate summary is based upon the best available information regarding the scope of the remedial alternative. This is intended to be an order-of-magnitude engineering cost estimate expected to be within +50 to -30 percent of the actual project cost.

2.10 Summary of Comparative Analysis of Alternatives

A comparative analysis of alternatives was conducted during the FFS. In conformance with the NCP, seven of the following nine criteria were evaluated in the detailed analysis:

- Overall protection of human health and the environment
- Compliance with ARARs
- Long-term effectiveness and permanence
- Reduction of toxicity, mobility or volume through treatment
- Short-term effectiveness
- Implementability
- Cost
- State acceptance (evaluated in this document)
- Community acceptance (evaluated in this document)

State and community acceptance criteria are evaluated as part of this ROD. This evaluation is presented in the Responsiveness Summary of the ROD.



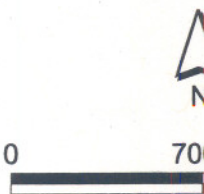
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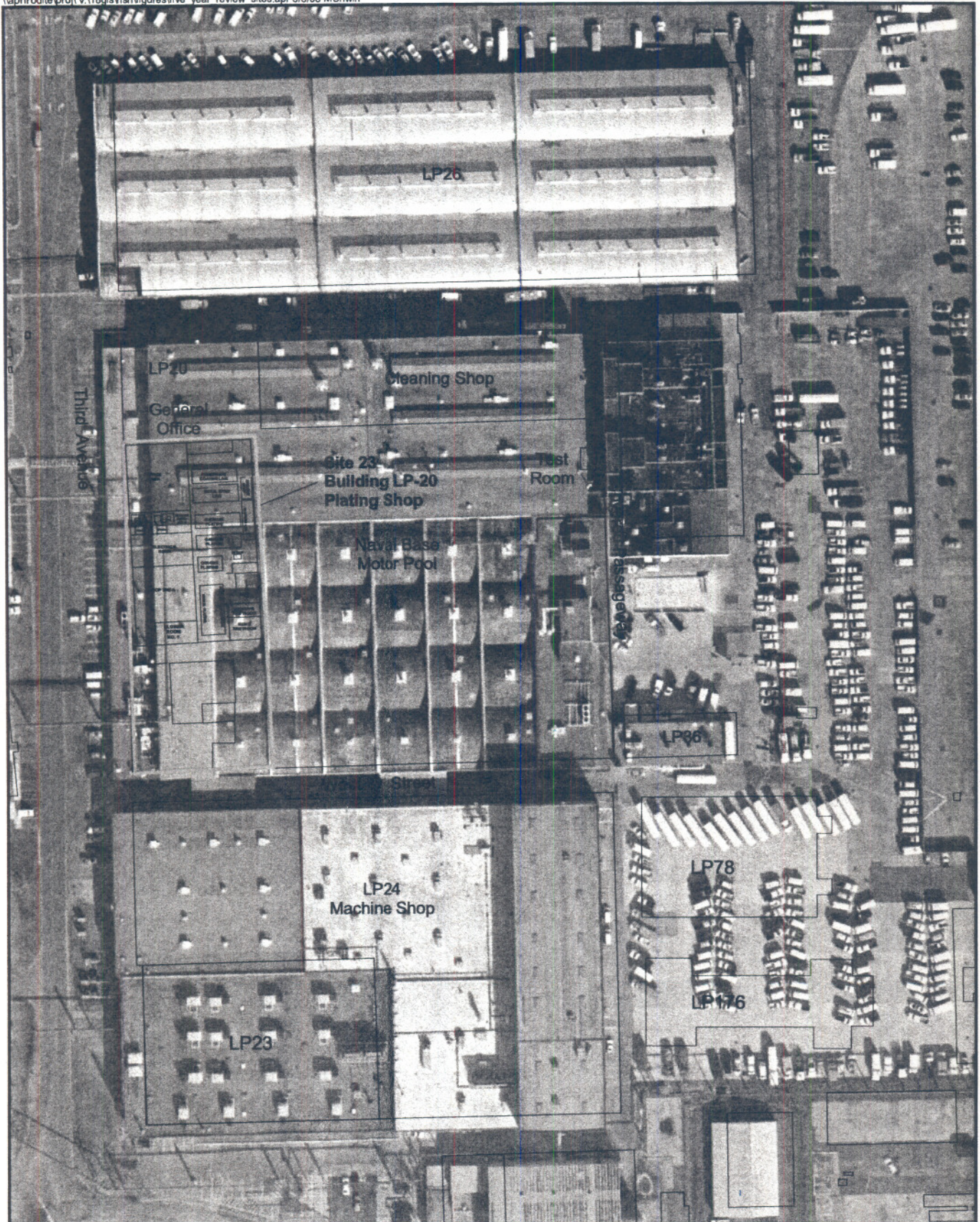


Base Boundary

Installation Restoration Site

Aerial Photography - February 2005





LEGEND

□ Site 23



0 65 130 Feet

Figure 2-2
Site Map
Site 23 ROD
Naval Station Norfolk
Norfolk, Virginia

SECTION 3

Responsiveness Summary

The Commonwealth of Virginia concurs with the selected remedy.

During the public comment period, written comments, concerns and questions were solicited. A public meeting was held on August 6, 2008 at the SpringHill Suites Norfolk Old Dominion University in Norfolk, Virginia to formally present the Proposed Plan (CH2M HILL, 2008c), answer questions, and receive comments. No comments were received during the public comment period or the public meeting.

SECTION 4

References

- Baker Environmental, Inc. (Baker). 1996. *Final Remedial Investigation and Baseline Risk Assessment for Building LP-20 Site, Naval Base, Norfolk, Virginia*. September.
- CH2M HILL, Inc. 2008a. *Final Focused Feasibility Study for Site 23 – Building LP-20 Plating Shop, Naval Station Norfolk, Norfolk, Virginia*. March.
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- CH2M HILL, Inc. 2007. *Final Action Memorandum, Site 23 (Building LP-20 Plating Shop), Naval Station Norfolk, Norfolk, Virginia*. April.
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- Norfolk Naval Base. 1993. *Clean Closure Plan (Building LP-20)*. February
- O'Brien and Gere. 1997. *Building LP-20 RCRA Closure Report. NADEP Naval Air Station Norfolk*. December.
- Shaw Environmental, Inc. 2008. *Final Completion Report, Site 23- Building LP-20 Plating Shop, Naval Station Norfolk, Norfolk, Virginia*. February.
- U.S. Environmental Protection Agency (USEPA) and the United States Navy (Navy). 1999. *Federal Facilities Agreement, Naval Base Norfolk, Norfolk, Virginia*. May.
- Versar. 2000a. *Clean Closure Plan for RCRA Closure of Hazardous Waste Storage Facility Building LP-20 Plating Shop, Norfolk Naval Base, Norfolk, Virginia*. September.
- Versar. 2000b. *Contingent Closure Plan, Closure in Place and Post-Closure Care RCRA Closure of Hazardous Waste Storage Facility Building LP-20 Plating Shop, Norfolk Naval Base, Norfolk, Virginia*. September.



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L. Preston Bryant, Jr.
Secretary of Natural Resources

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September 26, 2008

Mr. James J. Burke, Director
Hazardous Site Cleanup Division (3HS00)
U. S. Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

RE: Final Record of Decision for Site 23 Bldg. LP-20 Plating Shop
Norfolk Naval Station, Norfolk, Virginia

Dear Mr. Burke:

The Virginia Department of Environmental Quality (VDEQ) staff has reviewed the Record of Decision (ROD) for Site 23. The ROD was signed by Naval Captain S. J. Dinobile, Commanding Officer Norfolk Naval Station, on September 25, 2008. My office has reviewed the Final ROD and concurs with the selected remedy.

Should you have any questions concerning this letter, please contact Mr. Eric J. Salopek at your convenience, at 804/698-4427.

Sincerely,

A handwritten signature in cursive script that reads 'Durwood H. Willis'.

Durwood H. Willis
Director, Office of Remediation Programs.

CC: Milt Johnston, VDEQ TRO
Eric J. Salopek; VDEQ ORP
Steve Hirsh; EPA Region III
Winoma Johnson; NAVFAC