Proposed Plan

Site 17 - Former Pesticide Shop, Building 95

Former Naval Air Station Brunswick, Maine

The No Further Action Proposal

This Proposed Plan has been prepared in accordance with federal laws to present the Navy's proposal that **no further action** is required for soil at Site 17 – Former Pesticide Shop, Building 95, Naval Air Station (NAS) Brunswick. Groundwater at Site 17 is still under investigation and will be addressed in a separate Proposed Plan.

This plan provides information on the results of soil investigations and removal actions used to make the **no further action** determination, the public comment period, a public information session and public hearing, and how the final remedy for Site 17 will be selected.

Let us know what you think

Mark Your Calendar!

Public Comment Period

August 1, 2011, to August 31, 2011

The Navy will accept written comments on the Proposed Plan for Site 17 during this comment period. Comments can also be sent by mail, e-mail, or fax. You can also offer oral or written comments at the formal public hearing (see page 6 for details).

Informational Open House and Public Meeting

August 17, 2011

The Navy invites you to attend an informational open house from 5:30 pm to 7:00 pm to learn about the Site 17 proposal. The informational session will include posters describing the Proposed Plan and an informal question-and-answer session. A formal public hearing will follow during which the Navy will receive comments on the Proposed Plan from the public. It is at this formal hearing that an official transcript of the comments will be recorded. The above activities will be held in at the Parkwood Inn, 71 Gurnet Road, Brunswick, Maine.

For more information, visit the Information Repository at the location provided on page 6 of this Proposed Plan.

Federal and state environmental laws govern cleanup activities at federal facilities. A federal law called the **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)**, better known as Superfund, provides procedures for investigation and cleanup of environmental problems. Under this law, the Navy is investigating and pursuing cleanup, as necessary, of sites at former NAS Brunswick to return the property to a condition that is protective of the community, workers, and the environment. The Navy is issuing this Proposed Plan as part of its public participation responsibilities under Section 300.430(f)(2) of the **National Oil and Hazardous Substances Pollution Contingency Plan** (**NCP**).

Introduction

This Proposed Plan provides information to the public on the preferred approach for Site 17 – Former Building 95 at the former NAS Brunswick and provides the rationale for this preference. This document is issued by the Navy, as the lead agency for all investigation and cleanup programs ongoing at the former NAS Brunswick, and the United States Environmental Protection Agency (EPA), with concurrence from the Maine Department of Environmental Protection (MEDEP). The Navy and EPA, with the concurrence of MEDEP, will select a final remedy for Site 17 after reviewing and considering all information submitted during the 30-day public comment period. The Navy and EPA, with the concurrence of MEDEP, may modify the **no further action** proposal or select another response action based on new information or public comments. Therefore, the public is encouraged to review and comment on this Proposed Plan.

This Proposed Plan summarizes information that can be found in greater detail in the **Remedial Investigation (RI)** Report and other documents included in the NAS Brunswick Information Repository, which is located in the Curtis Memorial Library at 23 Pleasant Street, Brunswick, Maine.

Bolded terms throughout this Proposed Plan are explained in the Glossary of Terms on Page 7.

The Navy and EPA encourage the public to review these documents to gain a more comprehensive understanding of the site and associated environmental activities.

The purpose of this Proposed Plan is to:

- Provide the public with basic background information about the former NAS Brunswick, including Site 17, which is known as Former Building 95. This information includes a description of the site that was developed by reviewing past documents about the site, investigating soil at the site, and evaluating potential human and ecological impacts.
- Describe the information used as the basis for the Navy's determination that **no further action** is required for soil at the site.
- Provide the public information on how they can be involved in the remedy selection process.
- Solicit and encourage public review of the Proposed Plan.

After the public has had the opportunity to review and comment on this Proposed Plan, the Navy will summarize and respond to all comments received during the comment period and formal public hearing in a document called the **Responsiveness Summary**. The Navy will carefully consider all comments received and could even select a remedial action different from that proposed. Ultimately, the selected remedy for Site 17 will be documented in a **Record of Decision** (**ROD**) for the site. The **Responsiveness Summary** will be issued with the **ROD**.

Site Background

The former NAS Brunswick occupies approximately 3,094 acres in Brunswick, Cumberland County, Maine. The base supported the Navy's antisubmarine warfare operations in the Atlantic Ocean with several squadrons of P-3 maritime patrol aircraft. NAS Brunswick was officially designated as a Superfund site in 1987 when EPA added it to the National Priorities List (NPL). NAS Brunswick was selected in 2005 by the Base Realignment and Closure (BRAC) Commission for closure and was deactivated on May 31, 2011. The base population and facility operations decreased significantly in January 2010 with the end of the base's flying mission. Some tenant activities are ongoing at the base, mainly associated with base closure. The former operational area of the base covers approximately 138 acres east of the two parallel runways extending north to south in the northern portion of the facility. The operational area includes numerous office buildings, barracks, recreational facilities, hangars, repair shops, and other facilities that formerly supported NAS Brunswick aircraft, although building demolition associated with base closure has begun.

Forested areas, grasslands, shrubland, marsh, and open water comprise approximately 83 percent of the base, with the remaining 17 percent consisting of paved areas (primary flight ramps and runways) of the operations area. The southern edge of the base borders coves and estuaries of the Gulf of Maine.

Where is Site 17 within the base?

Site 17 is located in the north-central area of the base, one block north of Fitch Avenue at the corners of Pegasus Avenue and Avenue B, and is bounded to the northeast by the former Old Navy Fuel Farm, to the southeast by the former railroad bed south of Avenue B, and to the southwest to northwest by Fifth Street (see Figure 1).

For what was Site 17 used?

Site 17 buildings north of Avenue B housed Navy pest control operations that included storage, mixing, and disposal of pesticides and herbicides from the 1940s until 1985.

Various pesticides and herbicides were mixed with a liquid carrier such as water or kerosene on an as-needed basis when pest control service calls were placed. Prior to 1976, any materials left over after service calls were reportedly dumped behind Building 95. Empty containers were rinsed, crushed, and placed in the trash for disposal.

What is the current and future land use at the site?

Site 17 is currently inactive, with no buildings or structures. The Reuse Master Plan for the former NAS Brunswick identifies planned future uses of the Site 17 area as community mixed use, which could include various commercial, retail, recreational, and residential uses. However, based on the site's proximity to the airfield, it is unlikely to be used for residential purposes in the future.

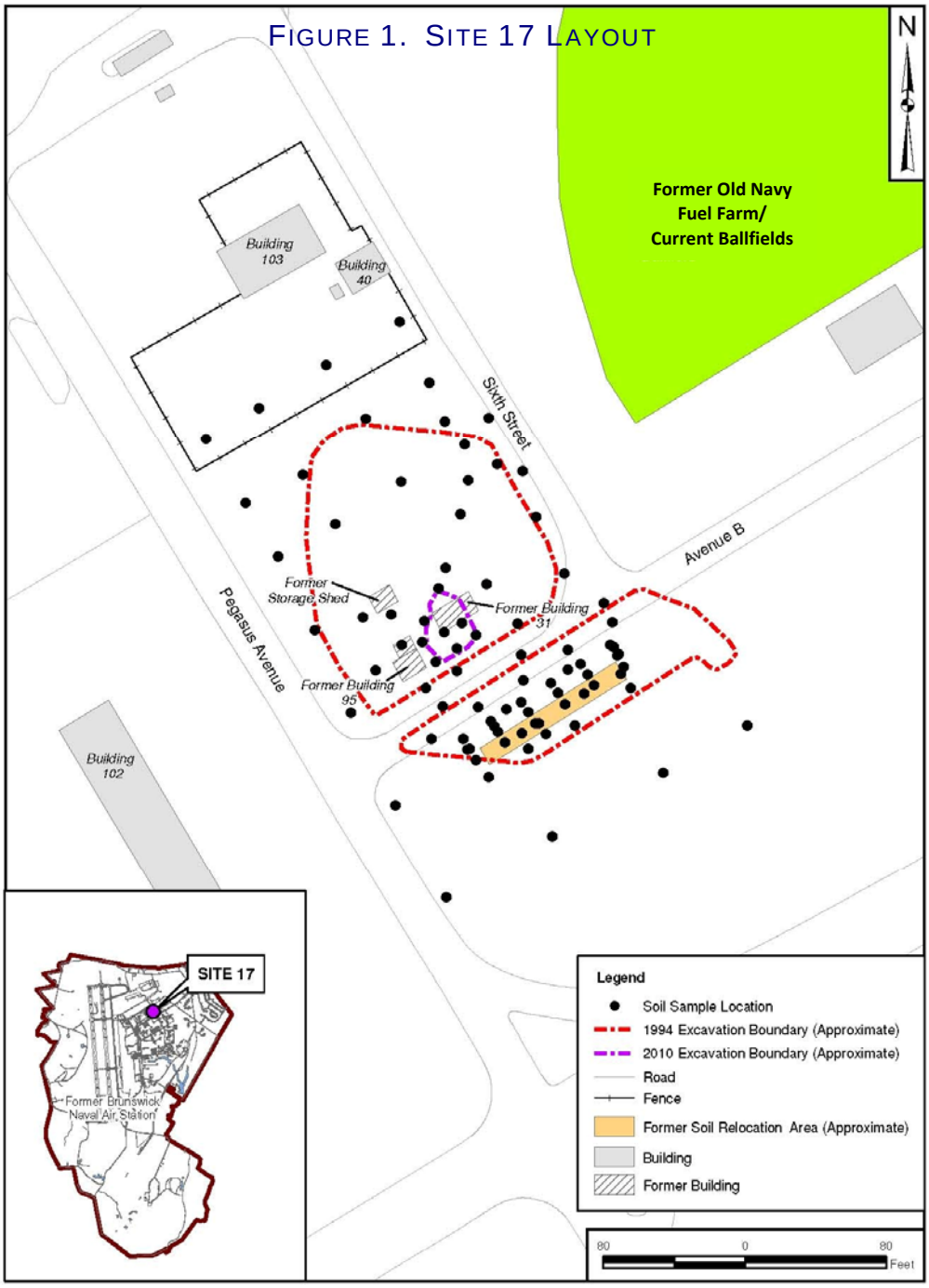

FIGURE 1. SITE 17 LAYOUT

SITE CHARACTERISTICS

Site 17 is approximately 0.7 acre, and currently, a large portion of the site north of Avenue B is covered with grass and low brush. South of Avenue B, the site is grass covered (maintained) with a few trees.

How much and what types of chemicals are present?

The primary contaminants that have been the target of Navy studies and cleanup efforts include the pesticides **DDT, DDD, and DDE.** After extensive activities at the site to remove soil with elevated concentrations of these pesticides that are associated with potential risks to humans and the environment, only residual low levels of these contaminants remain in soil across the site. Arsenic, which is a naturally occurring substance found in soil and groundwater, was also detected at concentrations greater than unrestricted land use concentrations, but it was determined that the arsenic was not a result of site activities but was related to the fill material used at the site during NAS Brunswick construction and alteration activities that occurred over the course of the approximately 60 years that the base was an active military installation.

History of Soil-Related Investigations and Removal Actions at Site 17

1990 Soil Sampling: Results of soil samples from the Building 95 vicinity indicated impacts from the pesticide **DDT** and its degradation products **DDD** and **DDE**.

1992 Engineering Evaluation/Cost Analysis (EE/CA) and Associated Sampling: An EE/CA was completed to evaluate cleanup options for pesticide-contaminated soil. Additional sampling was conducted to determine the extent of impacted soil, and **risk assessments** were completed that concluded that exposure to contaminated soil at the site posed unacceptable risk to human and ecological **receptors**.

1994 Removal Actions: Removal actions in 1994 resulted in the excavation and off-base disposal of about 1,350 cubic yards of contaminated soil and debris.

Draft Remedial Investigation: Determined the extent of contaminated soil, if **groundwater** was contaminated and if so if it was migrating off site, and estimated associated human health and ecological risks. Initial results indicated unacceptable human health risks from soil exposure, and the Navy decided to conduct additional focused soil removals to address these risks.

July 2009: Removal and off-base disposal of 117 tons of soil that were excavated from the area north of Avenue B and placed (buried and covered with clean soil) south of Avenue B after the 1994 removal actions were completed.

2009-2010 Post-Draft Remedial Investigation Soil Removal and Associated Sampling: Additional sampling was conducted after the **Remedial Investigation** to determine the amount of soil to be removed to meet risk-based **cleanup levels**. An additional 287 tons of soil were removed and disposed of off base in December 2010.

2011 Revised Remedial Investigation: Updated to reflect site conditions after recent soil removals. Based on these post-removal action results, estimated risks to human health and the environment from site soil were determined to be acceptable for unrestricted land use per CERCLA requirements/guidelines.

Scope and Role of the Site 17 Response Action

Site 17 is one of several sites identified at NAS Brunswick for assessment and cleanup under Superfund/**CERCLA**. Each of these sites is undergoing the Superfund/**CERCLA** cleanup process independently of each other. **No further action Records of Decision** have been signed for 10 of 18

Superfund/**CERCLA** sites at NAS Brunswick, and remedial actions have been implemented at six sites in accordance with **Records of Decision**. Site 12, Explosive Ordnance Disposal Area, is still under investigation. This Proposed Plan and ROD document what is expected to be the final remedy for soil at Site 17; a separate Proposed Plan and **Record of Decision** will be issued for Site 17 **groundwater**.

The Proposed Plan for Site 17 is not expected to have an impact on the cleanup for the other sites at the former NAS Brunswick. As Site 17 **groundwater** and Site 12 progress through the cleanup process, Proposed Plans will be issued for those sites.

Summary of Site 17 Human Health and Ecological Risk Assessment Results

As part of site investigation activities, the Navy completed human health and ecological **risk assessments** to evaluate potential current and future effects of the chemicals detected at the site on human health and the environment. The **risk assessments** were conducted using data collected after recent site soil removal actions. The results of the **risk assessments** are described below.

Human Health Risks

The human health **risk assessment** estimates the baseline risk, which is the likelihood of health problems occurring if cleanup actions were not taken at the site. To estimate the baseline risk for humans, a four-step process was used.

Step 1 – Identify Chemicals of Potential Concern

Chemicals of potential concern (COPCs) are chemicals found at the site at concentrations greater than current federal and state risk-based screening levels. These chemicals are evaluated further in Steps 2 through 4 of the **risk assessment**.

Step 2 – Conduct an Exposure Assessment

In this step, ways that humans could come into contact with soil at Site 17 were evaluated. Both current and reasonably foreseeable future exposure scenarios were identified.

Human **receptors** evaluated at Site 17 included industrial workers, construction workers, trespassers/recreational users, and future residents. The assumed exposure routes for all **receptors** included ingestion, skin contact, and inhalation.

Step 3 – Complete a Toxicity Assessment

At this step, possible harmful effects from exposure to the individual **chemicals of potential concern** are evaluated. Generally, these chemicals are separated into two groups, **carcinogens**, chemicals that may cause cancer, and **non-carcinogens**, chemicals that may cause adverse effects other than cancer.

Expressing Estimated Human Health Risks

Human Health Risk Assessment: When evaluating the risk to humans, the risk estimates for **carcinogens** (chemicals that may cause cancer) and **non-carcinogens** (chemicals that may cause adverse effects other than cancer) are expressed differently.

Carcinogens: For cancer-causing chemicals, risk estimates are expressed in terms of probability. For example, exposure to a particular carcinogenic chemical may present a 1 in 10,000 chance of causing cancer over an estimated lifetime of 70 years. This can also be expressed as $1x10^{-4}$. The EPA risk range for **carcinogens** is $1x10^{-6}$ (a 1 in 1 million chance) to $1x10^{-4}$ (a 1 in 10,000 chance). In general, calculated risks higher than this range would require consideration of the development and implementation of cleanup alternatives. MEDEP's target risk level is $1x10^{-5}$ (a 1 in 100,000 chance).

Non-Carcinogens: For non-cancer causing chemicals, exposures are first estimated and then compared to a reference dose (RfD). The reference dose is developed by EPA scientists to estimate the amount of a chemical a person (including the most sensitive person) could be exposed to over a lifetime without developing adverse (non-cancer) health effects. This measure is known as a hazard index. A hazard index greater than 1 suggests that adverse effects are possible.

Step 4 – Characterize the Risk

The results of Steps 2 and 3 were combined to estimate the overall potential risk from exposure to the Site 17 **contaminants of potential concern**. The terms used to define the estimated risk are explained in the text box, *Expressing Estimated Human Health Risks*, below.

The results of the **risk assessment** for humans potentially exposed to soil at Site 17 indicated the following:

- Estimated risks from cancer-causing **chemicals of potential concern** were within EPA's target risk range of 1 in 10,000 to 1 in 1 million ($1x10^{-4}$ to $1x10^{-6}$) and less than MEDEP's target risk level of 1 in 100,000 ($1 x 10^{-5}$) for all potential land use scenarios evaluated, including future residential use of the site.
- Estimated non-cancer hazards were less than or equal to 1.0 (the EPA and MEDEP target hazard) for all potential land use scenarios evaluated, including future residential use of the site.

Ecological Risks:

The primary objective of the ecological **risk assessment** is to evaluate whether ecological **receptors** are potentially at risk when exposed to chemicals at Site 17. The ecological **risk assessment** is completed in three steps, as discussed below.

Step 1 – Problem Formulation

The goal of the ecological **risk assessment** at Site 17 was to evaluate the potential for adverse ecological impacts from site-related contamination (i.e., whether ecological **receptors** are able to exist and grow in similar ways to the surrounding area).

Actual or potential exposures of ecological **receptors** are determined by identifying the most likely pathways of contaminant release and transport. A complete exposure pathway has three components: (1) a source of chemicals that can be released to the environment, (2) a route of contaminant transport through the environment, and (3) an exposure or contact point for an ecological **receptor**. The complete exposure pathways and routes of entry to plants and animals at Site 17 consist of:

- Direct contact with surface soil by invertebrates, plants, mammals, and birds.
- Ingestion of surface soil by invertebrates, mammals, and birds.

Step 2 – Risk Analysis

In this step, possible harmful effects from being exposed to the individual chemicals are evaluated. This step includes estimating or measuring the amount of each chemical in soil, aquatic environments such as surface water, or plant or animal tissue and then evaluating ecological **receptor** exposure to these chemical concentrations.

Step 3 – Risk Characterization

In this step, the results of the risk analysis are analyzed to determine the likelihood of harmful effects to ecological **receptors** at Site 17. Based on the risk characterization, the overall level of ecological risk associated with the detected contaminants was considered to be minimal; therefore, no action is required at Site 17 to protect ecological **receptors**.

SITE 17 EXCAVATION ACTIVITIES

Risk Summary - Why is action not needed at the site?

Human health and ecological risks for soil remaining at Site 17 after soil removal activities were less than state and federal action levels. Therefore, it is the current judgment of the Navy and EPA, and with concurrence from MEDEP, that **no further action** is necessary for soil at Site 17 to protect public health and welfare from actual or threatened releases of these hazardous substances into the environment.

Because hazardous substances are not present at the site in excess of levels that allow for unlimited exposure and unrestricted use, review of the site every 5 years after initiation is not required.

Next Steps

The Navy will accept public comments during a 30-day formal comment period. The Navy considers and uses these comments to improve its cleanup approach.

During the formal comment period, the Navy will accept written comments via mail, e-mail, and fax. Additionally, verbal comments may be made during the formal Public Hearing on August 17, 2011, during which a stenographer will record all offered comments.

The Navy will not respond to your comments during the formal Public Hearing. The Navy will hold a brief informational meeting prior to the start of the formal Public Hearing on August 17, 2011.

The Navy will review the transcript of all the comments received during the hearing and all written comments received during the comment period before making a final cleanup decision.

The Navy will then prepare a written response to all the formal written and oral comments received. Your formal comment will become part of the official public record. The transcript of comments and the Navy's written responses will be issued in a document called a **Responsiveness Summary** when the Navy releases the Record of Decision. The **Responsiveness Summary** and **Record of Decision** will be made available to the public on-line and at the Curtis Memorial Library (see address to the right).

The Navy will announce the final decision on the cleanup plan through the local media and via the NAS Brunswick Environmental Restoration Program website, http://nasbrunswick.navy-env.com/.

You may send comments by U.S. mail, fax or e-mail. A tear-off mailer is provided for your convenience.

What Do You Think?

The Navy, as the lead agency, is accepting formal public comments on this Proposed Plan from August 1 to August 31, 2011. You don't have to be a technical expert to comment. If you have a comment, the Navy wants to hear it before the final decision about Site 17 is made.

Send Written Comments

Provide the Navy with your written comments about the Proposed Plan for Site 17. Please email (todd.bober@navy.mil), fax (215)-897-4902, or mail comments, postmarked no later than August 31, 2011, to:

Mr. Todd Bober
BRAC PMO Northeast
Building 679, Naval Business Center
4911 South Broad Street
Philadelphia, Pennsylvania 19112-1303

For More Detailed Information You May Go to the Public Information Repository or Visit Our Website

The Proposed Plan was prepared to help the public understand and comment on the **no further action** proposal for this site and provides a summary of a number of reports and studies. The technical and public information documents used by the Navy to prepare the Proposed Plan are available at the following Information Repository:

Curtis Memorial Library
23 Pleasant Street
Brunswick, Maine 04011-2261

Relevant documents can also be accessed via the NAS Brunswick Environmental Restoration Program website, nasbrunswick.navy-env.com and Department of the Navy BRAC Program Management Office website, www.bracpmo.navy.mil/.

Glossary of Terms

This glossary defines the bolded terms used in this Proposed Plan. The definitions in this glossary apply specifically to this Proposed Plan and may have other meanings when used in different circumstances.

Carcinogens: Chemicals that cause cancer.

Chemical of Concern (COC): A substance detected at a level and/or in a location where it could have an adverse effect on human health and the environment. No **chemicals of concern** were identified at Site 17 because no adverse effects were identified.

Chemical of potential concern (COPC): Chemicals found at concentrations greater than federal and state risk-based screening levels.

Cleanup Level: A numerical concentration agreed upon by the Navy and EPA, in consultation with MEDEP, as having to be reached for a certain **chemical of concern** to meet one or more of the remedial action objectives. A **cleanup level** may be a regulatory-based criterion, a risk-based concentration, or even a background value.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA): A federal law also known as "Superfund." This law was passed in 1980 and modified in 1986 by the Superfund Amendments and Reauthorization Act. T his law created a tax on the chemical and petroleum industries and provided broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment.

DDT, DDD, and DDE: **DDT** is a synthetic pesticide and persistent contaminant with the chemical name dichlorodiphenyltrichloroethane that was banned in the US in 1972 based on adverse impacts to human health and the environment. Dichlorodiphenyldichloroethylene (**DDE**) and dichlorodiphenyldichloroethane (**DDD**) were present in minor amounts in commercial **DDT** mixtures and are also breakdown products of **DDT**.

Groundwater: Water found beneath the earth's surface that fills pores between such materials as sand, soil, gravel, or rock.

National Oil and Hazardous Substances Pollution Contingency Plan (NCP): More commonly called the **National Contingency Plan**, it is the federal government's blueprint for responding to both oil spills and hazardous substance releases. Following the passage of Superfund (**CERCLA**) legislation in 1980, the **National Contingency Plan** was broadened to cover releases at hazardous waste sites requiring emergency removal actions. A key provision involves authorizing the lead agency to initiate appropriate removal action in the event of a hazardous substance release.

Non-carcinogens: Chemicals that may cause adverse effects other than cancer.

No Further Action: A recommendation made for a site when no unacceptable risk to human health and the environment is found.

Receptor: An individual, either a human, plant, or animal, that may be exposed to a chemical present at the site.

Record of Decision (ROD): An official document that describes the selected action for a specific site. The **Record of Decision** documents the remedy selection process and is issued by the Navy following the public comment period.

Remedial Investigation (RI): An in-depth study designed to gather data needed to determine the nature and extent of contamination at a Superfund site.

Responsiveness Summary: A section of the **Record of Decision** that includes a listing of the written and oral formal comments received during the public comment period and public meeting on the Proposed Plan and Navy's responses to the comments.

Risk Assessment: Evaluation and estimation of the current and future potential for adverse human health and/or ecological effects from exposure to contaminants**.** A human health **risk assessment** is an evaluation of current and future potential for adverse human health effects from exposure to site contaminants. An ecological **risk assessment** is a study that evaluates the potential risk to ecological receptors (various types of plants and animals) from contaminants at a site.

Superfund: Another name for the **Comprehensive Environmental Response, Compensation, and Liability Act** (**CERCLA**) (see above).

Use This Space to Write Your Comments
Or to Be Added to the Mailing List

Please use this form for your written comments and mail to the address below.

Your comments must be postmarked no later than August 31, 2011.

Mr. Todd Bober
Remedial Project Manager
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4911 South Broad Street
Philadelphia, Pennsylvania 19112-1303
Fax: (215) 897-4902
E-mail: todd.bober@navy.mil

(Attach additional sheets as needed)

Comments submitted by:

Mailing List Additions, Deletions, or Changes

I would like to:

- ☐ Join the site mailing list.
- ☐ Note a change of address.
- ☐ Unsubscribe from the mailing list.
- ☐ Obtain additional information about: _____

Name: _____

Address: _____

_____

_____

Please check the appropriate box and fill in the correct address information above.

Former Naval Air Station Brunswick

Site 17 - Former Building 95

Public Comment Sheet (Continued)

Place
Stamp
Here

MR. TODD BOBER
REMEDIAL PROJECT MANAGER
BRAC PMO NORTHEAST
BUILDING 679, NAVAL BUSINESS CENTER
PHILADELPHIA, PA 19112-1303

Fold on line, staple, stamp, and mail