

FINAL

**ENVIRONMENTAL CONDITION OF PROPERTY
REPORT**

NAVAL AIR STATION PATUXENT RIVER
PATUXENT RIVER, MARYLAND

ADMINISTRATION WORK CAMPUS
ENHANCED USE LEASE SITES 1-7

Naval Facilities Engineering Command Washington

Public Works Department
NAS Patuxent River
22445 Peary Road, Bldg. 504
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July 2010

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COVER SHEET

Under its Enhanced Use Leasing (EUL) program, the Department of the Navy is making available for lease non-excess real property for the development of new administrative space at the Naval Air Station (NAS) Patuxent River, located in Patuxent River, MD. This property consists of seven sites within the western portion of NAS Patuxent River, located in the vicinity of Cuddihy Road and encompassing a total of 45.3 acres.



The following report contains individual Environmental Condition of Property reports for each of the seven selected EUL sites. Each report evaluates the current and former uses of the site; describes the environmental conditions of the land, facilities, and real property assets within the site; and summarizes any environmental restrictions, land use controls, and consultation requirements that may be necessary for development within the site.

These reports were developed in accordance with the Navy's Policy for Streamlining the Assessment, Documentation, and Disclosure of the Environmental Condition of Property (ECP) for Non-BRAC Real Estate Actions.

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Final

Enhanced Use Lease Site 1
Environmental Condition of Property Report
Administration Work Campus

Naval Air Station Patuxent River
Patuxent River, Maryland

Prepared for:



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ABBREVIATIONS, ACRONYMS, AND SYMBOLS

ACHP	Advisory Council on Historic Preservation
ACM	Asbestos-containing material
AMERA	Asbestos Hazard Emergency Response Act
AICUZ	Air Installations Compatibility Use Zone
AIMD	Aircraft Intermediate Maintenance Department
APE	Area of Potential Effect
APZ	Accident potential zone
AQCR	Air quality control region
ARPA	Archeological Resource Protection Act
AST	Aboveground storage tank
ATSDR	Agency for Toxic Substances and Disease Registry
BMP	Best Management Practice
BRAC	Base Realignment and Closure
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CWA	Clean Water Act
CZM	Coastal Zone Management
DoD	Department of Defense
ECP	Environmental Condition of Property
EDR	Environmental Data Resources
EFH	Essential fish habitat
EISA	Energy Independence and Security Act
ENE	East-north-east
EO	Executive Order
ER	Environmental Restoration
ESA	Endangered Species Act of 1973
ESD	Environmental site design
EUL	Enhanced Use Lease
FFA	Federal Facility Agreement
FIDS	Forest Interior Dwelling Species
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FRC	Fleet Readiness Center
FY	Fiscal Year
ga	Gallons
GIS	Geographic Information System
GMR	General management recommendations
IPMP	Integrated Pest Management Plan
IRA	Interim Remedial Action
IRI	Interim Remedial Investigation
LBP	Lead-based paint
LID	Low impact development
LQG	Large Quantity Generator
LUC	Land use control
MBTA	Migratory Bird Treaty Act
MCL	Maximum Contaminant Level

MDE	Maryland Department of the Environment
MEC	Munitions and explosives of concern
MEP	Maximum extent practicable
mph	Miles per hour
MRP	Munitions Response Program
msl	Mean sea level
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act of 1990
NAS	Naval Air Station
NAVFAC	Naval Facilities Engineering Command
NAVRAMP	Naval Radon Assessment and Mitigation Program
NDW	Naval District Washington
NHPA	National Historic Preservation Act of 1966
NOAA	National Oceanographic & Atmospheric Administration
NOV	Notices of Violation
NRC	Naval Recreation Center
OPNAVINST	Office of the Chief of Naval Operations Instruction
PAHs	polycyclic aromatic hydrocarbons
PCBs	Polychlorinated biphenyls
PTC	Permit to Construct
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
RVs	Recreational vehicles
SDWA	Safe Drinking Water Act
SHPO	State Historic Preservation Officer
SVOC	Semi-volatile organic compounds
The Register	National Register of Historic Places
TSCA	Toxic Substances Control Act
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geologic Survey
UST	Underground storage tank
UXO	Unexploded ordnance
VOC	Volatile organic compound

Executive Summary

Under its Enhanced Use Leasing (EUL) program, the Department of the Navy (hereinafter referred to as the “Navy”) is making available for lease non-excess real property for the development of new administrative space at the Naval Air Station (NAS) Patuxent River, Patuxent River, MD (hereinafter referred to as NAS Patuxent River or the “Station”). This Environmental Condition of Property (ECP) report was prepared for NAS Patuxent River EUL Site 1 (hereinafter referred to as “EUL Site 1”) and its adjacent properties. This report evaluates the current and former uses of the site; describes the environmental conditions of the land, facilities, and real property assets within the site; and summarizes any environmental restrictions, land use controls, and consultation requirements that may be necessary for development within EUL Site 1.

The ECP report findings for EUL Site 1 are based on a record search of readily available documents, a thorough review of the applicable and relevant documents, analysis of the NAS Patuxent River Geographic Information System (GIS), interviews with personnel knowledgeable about the site and its adjacent properties, and visual site investigations conducted on May 18, 2010 and June 1, 2010.

EUL Site 1 consists of approximately 7.1 acres (28,700 square meters) bounded by NAS Patuxent River on all sides. Since the Navy took ownership of the site in 1943, EUL Site 1 has remained largely undeveloped and currently includes an unpaved storage lot for campers, boats, and trailers. Prior to 1943, EUL Site 1 was part of various plantations and used for agricultural purposes.

Areas of potential environmental concern identified during the ECP study for EUL Site 1 and its adjacent properties are listed below by subject area:

- Hazardous Substances/Waste Management;
- Groundwater;
- Forests;
- Wetlands;
- Coastal Zone; and
- Historic Architectural Resources.

In accordance with DoD policy regarding the classification of properties that may exhibit hazardous substance or petroleum contamination (please reference Deputy Under Secretary of Defense Goodman Memorandum dated 21 October 1996), EUL Site 1 has been classified as Category 7. This category applies to properties that have not been evaluated or require additional evaluation. While no releases, disposals, or mitigation of hazardous substances have been documented within EUL Site 1, there is reason to suspect contamination. Possible contamination concerns at EUL Site 1 include leaks from stored vehicles and containers, and groundwater contamination from nearby ER sites. Further evaluation of these contamination concerns should be performed prior to execution of any property transfer involving EUL Site 1.

1. INTRODUCTION

1.1 Introduction and Background

The Navy is making available for lease non-excess real property at the NAS Patuxent River, Patuxent River, Maryland (hereinafter referred to as NAS Patuxent River or the “Station”) under its EUL program.

NAS Patuxent River is located in Saint Mary’s County in Southern Maryland at the confluence of the Chesapeake Bay and the Patuxent River. NAS Patuxent River covers approximately 6,400 acres (25.9 square kilometers) with an additional 850 acres (3.4 square kilometers) at the Webster Field Annex, located about 15 miles (24.1 kilometers) south of the Station. The Naval Recreation Center (NRC) Solomons located across the Patuxent River in Solomons, Maryland is also under the administrative control of NAS Patuxent River and Naval District Washington (NDW). NRC Solomons encompasses approximately 300 acres (1.2 square kilometers) and is the largest outdoor recreation facility in the Navy. Figure 1-1 presents the location of NAS Patuxent River, Webster Field Annex, and NRC Solomons in the Washington, D.C. metropolitan area.

The Station supports naval aviation operations by researching, developing, testing and evaluating aircraft components and related products. The facilities are also used by foreign governments, academic institutions and private industry for similar projects. The Naval Aviation Systems Team at Patuxent River includes the Naval Air Station, the Webster Field Annex and the Naval Air Warfare Center Aircraft Division. NAS Patuxent River also is home to approximately 50 other tenant activities.

In support of the development of new administrative space through an EUL action, Naval Facilities Engineering Command (NAVFAC) Washington has prepared this ECP report for NAS Patuxent River EUL Site 1 (hereafter referred to as “EUL Site 1”). The following report presents a summary of readily available information on the current and former uses, environmental conditions of, and concerns relative to, the land, facilities and real property assets at EUL Site 1.

1.2 **Organization of ECP Report**

The ECP report is organized as follows:

- Section 2 (Survey Methodology) provides the methodology used to conduct the ECP study, including records review, site visit, and interviews.
- Section 3 (Past and Current Use) describes the current and former uses of the EUL site and the adjacent property.
- Section 4 (Environmental Setting) describes the environmental setting of the EUL site.
- Section 5 (Environmental Conditions of Subject Property) addresses the environmental conditions and related findings for the EUL site.
- Section 6 (Environmental Conditions of Adjacent Property) addresses the environmental conditions and related findings for property adjacent to the EUL site.
- Section 7 (Conclusions) presents the conclusions and recommendations of the ECP study.
- Section 8 (References) presents a list of references used in preparation of the ECP report.
- Section 9 (Certification) provides certification of the ECP report.

1.3 **Purpose of ECP Report**

The purpose of this ECP report is to establish the environmental condition of the real property to support the proposed EUL real estate action. This ECP study is primarily based on the review of readily available information, visual site inspections, and interviews with personnel familiar with the site history to determine any environmental risks associated with the proposed site.

Readily apparent operational and regulatory compliance deficiencies of environmental program areas such as underground storage tanks (USTs), air emissions, lead-based paint, asbestos, pesticides, polychlorinated biphenyls (PCBs), radon, medical waste, munitions or explosives of concern, lead based paint, stormwater, and natural resources are also provided in the ECP report. This ECP study does not re-investigate or otherwise review the adequacy of previously conducted investigations or remedial actions.

This ECP report will provide baseline environmental conditions for EUL Site 1 pursuant to the following goals:

- To document inquiry into environmental conditions to support real estate decisions;
- To protect the Navy from future liability;
- To determine risk of exposure to grantees/government employees; and
- To inform grantees of environmental conditions, restrictions, and land use controls (LUCs) associated with the real property (Department of the Navy, 2006).

1.4 Parcel Identification and Boundaries

EUL Site 1 consists of approximately 7.1 acres (28,700 square meters) of land located on the eastern side of Cuddihy Road near its intersection with Tate Road. The unpaved lot on EUL Site 1 is currently used as a storage lot for boats, trailers, and other recreational vehicles (RVs). Figure 1-2 presents the location of EUL Site 1 at NAS Patuxent River.

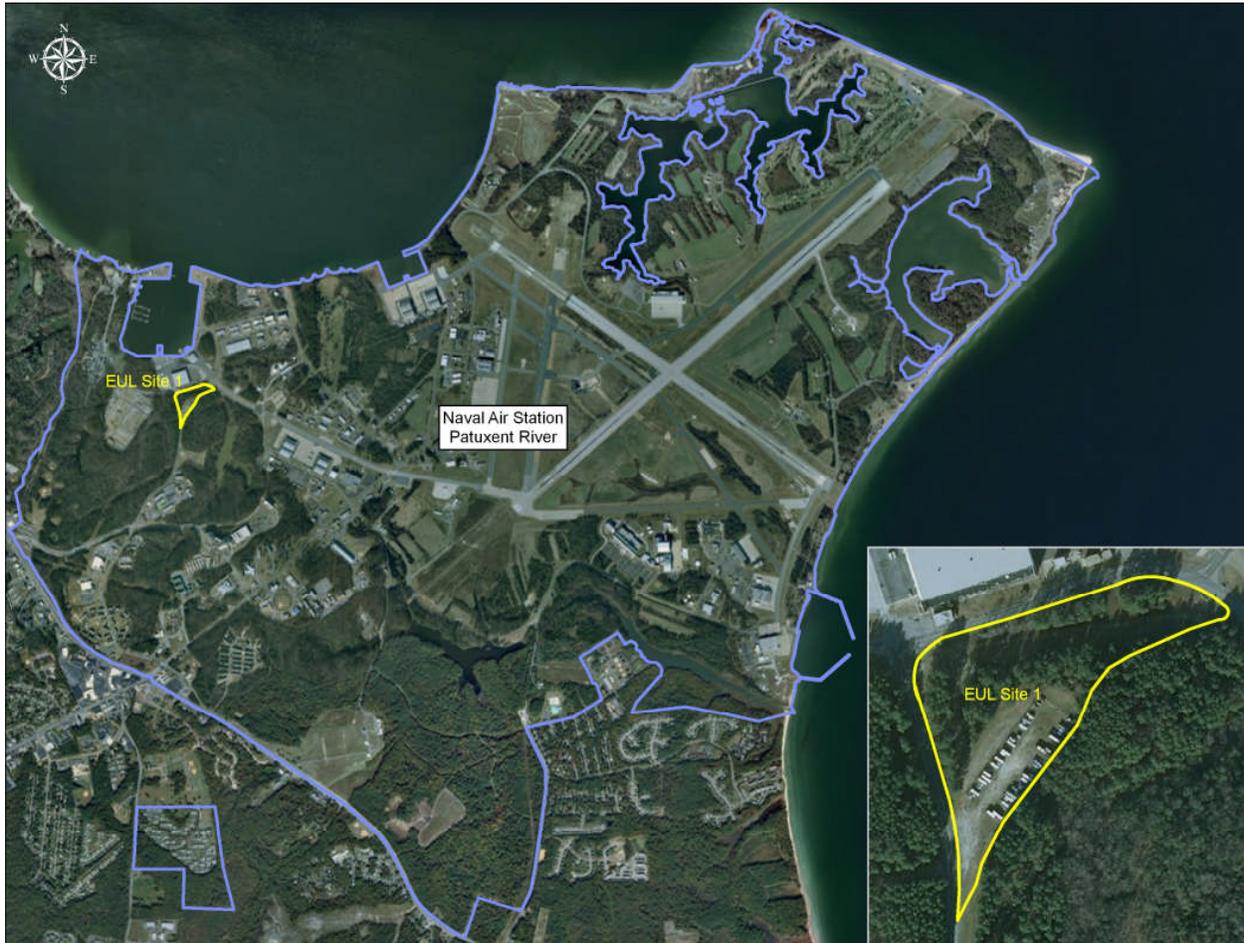


Figure 1-2. EUL Site 1 – NAS Patuxent River

1.5 Legal Description

Facility Name and Address: Naval Air Station Patuxent River, 22268 Cedar Point Road,
Patuxent River, MD 20670

Property Owner: United States Government

Date of Ownership: 1 April 1943

Current Occupant: US Navy

Zoning: Military

County, State: St. Mary's, Maryland

USGS Quadrangle: Solomons Island, MD. 38076-C4-TF-024

Latitude, Longitude: 38°17'02.53"N, 76°26'55.76"W

Parcel Number: Not Available

2. SURVEY METHODOLOGY

2.1 Approach and Rationale

This ECP report was prepared to document the environmental conditions of, and concerns relative to, the land, facilities, and real property assets of EUL Site 1. The environmental conditions of properties adjacent to EUL Site 1 were also considered in this report.

This report serves as a summary of readily available information based on an extensive record search of available documents, a thorough review of the applicable and relevant documents, analysis of the Station's Geographic Information System (GIS), two visual surveys conducted on May 18, 2010 and June 1, 2010, and on-site interviews with personnel knowledgeable about the history of EUL Site 1.

Extensive environmental investigations and reports and pertinent historical documents were reviewed in support of this ECP report. However, no sampling or analysis of any media was conducted during this survey. Information obtained is reflected within this report by reference. A complete list of references is provided as Section 8 (References).

The information obtained from the Navy and other environmental reports were considered to be accurate unless reasonable inquiries indicated otherwise. New information or changes in site use could require a review and possible modification of the findings and conclusions contained in this report.

2.2 Property Classification Guidelines

Based on analysis of the available data, the EUL Site was classified into one of seven Department of Defense (DoD) Environmental ECP categories as defined by the S.W. Goodman Memorandum dated October 21, 1996. The property classification categories are as follows:

- Category 1: Areas where no release or disposal of hazardous substances or petroleum products has occurred (including no migration of these substances from adjacent areas).
- Category 2: Areas where only release or disposal of petroleum products has occurred.
- Category 3: Areas where release, disposal, and/or migration of hazardous substances has occurred, but at concentrations that do not require a removal or remedial response.
- Category 4: Areas where release, disposal, and/or migration of hazardous substances has occurred, and all removal or remedial actions to protect human health and the environment have been taken.
- Category 5: Areas where release, disposal, and/or migration of hazardous substances has occurred, and removal or remedial actions are underway, but all required remedial actions have not yet been taken.
- Category 6: Areas where release, disposal, and/or migration of hazardous substances has occurred, but required actions have not yet been implemented.
- Category 7: Areas that are not evaluated or require additional evaluation.

2.3 **Related Reports**

Related environmental reports used in the preparation of this ECP report include, but are not limited to the following:

- Final Environmental Impact Statement for Increased Flight and Related Operations in the Patuxent River Complex, Patuxent River, Maryland;
- Environmental Assessment for the Privatization of Navy Housing at Naval Station;
- Draft Final Environmental Assessment for Disposition of Excess Buildings;
- Integrated Natural Resources Management Plan;
- Tank Management Plan, Volume 1;
- (Environmental Restoration) Site Management Plan, 2009 Update;
- Cold War Historic Context (1945-1989) and Architectural Survey and Evaluation;
- Draft Integrated Pest Management Plan, Naval Air Station Patuxent River, Maryland;
- Environmental Baseline Survey Update - Electric Utility Privatization: Naval Air Station Patuxent River Main Base, Lexington Park, Maryland; Webster Field Annex, St. Inigoes, Maryland; & Naval Recreation Center Solomons, Solomons Island;
- Historic Landscape Survey, Naval Air Station Patuxent River, Webster Field, and Solomons Complex;
- Naval Air Station Patuxent River Spill Records Database;
- Building Asbestos Reports; and
- Draft Part 70 Operating Permit No. 24-037-0017.

A complete list of references is provided in Section 8 (References).

2.4 **Real Estate Document Review**

A comprehensive property history of EUL Site 1 was created by reviewing Property Record Cards maintained by NAS Patuxent River for all former and current buildings and infrastructure located within the site. Historical land use records and personal interviews were used to understand property use and condition prior to the Navy taking ownership of the property. In addition, an environmental data and historical records package including a radius report, relevant historical aerial photographs, and topographic maps of the site was obtained from Environmental Data Resources (EDR) on May 20, 2010. Section 3 (Past and Current Use) presents the past and current use of EUL Site 1.

3. PAST AND CURRENT USE

3.1 Installation History

Prior to the early 20th century, NAS Patuxent River remained undeveloped and was used primarily for farming. Several plantations existed in the area, including Eltonhead Manor (1648), Susquehanna (1649), and Mattapany-Sewell (1663). A topographic map dated 1905, indicates that a small community called Pearson was located near the current northwest boundary of the Station, which consisted of a few residences, post office, a store, automobile dealer, and a church. The community was no longer represented on any historical maps more recently dated than 1943 (NAVFAC, Atlantic Division, 2009b; EDR, 2010a; EDR, 2010b).

NAS Patuxent River was commissioned on April 1, 1943, in an effort to centralize widely dispersed air testing facilities that had been established prior to World War II. This consolidation effort was swift, and the farming operations on the property were replaced by flight test operations within a year after the 1943 ground breaking for construction. The U.S. Naval Test Pilot School was established in 1958. In 1975, the Naval Air Test Center began to assume its role as the Naval Air Systems Command's principal site for development testing. Test facilities were upgraded in the late 1970s, with some of the largest construction appropriations in the history of the base (NAVFAC, Atlantic Division, 2009b; EDR, 2010a; EDR, 2010b).

Within the last decade, several new facilities were established at NAS Patuxent River due to Base Realignment and Closure (BRAC) actions. More than \$155 million has been budgeted for new engineering complexes and renovation of existing facilities. These include the Aircraft Technologies Lab; North Engineering Center; South Engineering Center; Frank Knox School improvement; Integrated Project Team Building; and the Propulsion System Evaluation Facility. The Aircraft Technologies Lab and the North and South Engineering Centers combined are occupied by 1,300 people recently relocated to NAS Patuxent River (Department of the Navy, 2002).

NAS Patuxent River is largely developed with aircraft runways, taxiways, hangars, and supporting structures and equipment. Residential communities, commercial properties, schools, churches, and recreational areas are also present. The Station is improved with water, wastewater, electric, and natural gas service.

3.2 Subject Property

EUL Site 1 was undeveloped and used as farmland until NAS Patuxent River was established in 1943. After NAS Patuxent River was established, the EUL site remained undeveloped. The site was cleared at some point before 1960, but remained undeveloped. The site began being used as a storage area for vehicles (e.g., campers, boats) prior to 1995 (EDR, 2010a; EDR, 2010b; Baker, 2010a; Baker, 2010b).

The terrain of EUL Site 1 is generally flat and slopes sharply towards drainage ditches on the northern and eastern boundaries of the site. The highest elevation on the site is approximately 90 feet (27 meters) above mean sea level (msl) and the lowest elevation is approximately 50 feet (15 meters) above msl.

3.3 Adjacent Property

According to historical topographic maps and property record cards, the property adjacent to EUL Site 1 remained undeveloped and used as farmland until 1943. Development to the north of EUL Site 1 in support of aircraft operations began immediately after commission of the Station. Several facilities were constructed adjacent to EUL Site 1. Table 3-1 summarizes the existing adjacent area facilities and functions. Property to the east, west, and south of the site remains undeveloped. Figure 5-1 illustrates the locations of EUL Site 1 adjacent area facilities.

Table 3-1. Existing Adjacent Area Facilities

Facility Number/Name	Built Date	Function(s)
Building 301	1943	Hangar supporting air operations as the Seaplane Hangar, Aircraft Intermediate Maintenance Department (AIMD), and the Fleet Readiness Center (FRC)
Building 301A	1943	Heating plant associated with Hangar 301
Building 332	1953	Briefing and Storage, GSE Shop, AIMD Oxygen/Turbine Shop, and SE Inspector Shack 02 Shop
Building 1684	1980	Steam Cleaner Building

Property adjacent to the site provides a range of outdoor recreation activities including hunting, hiking, and bird-watching. The Outdoor Recreation Program at NAS Patuxent River relieves pressure from recreational areas in the community and generates a positive impact on the Station's staff productivity and retention (Department of the Navy, 2002).

4. ENVIRONMENTAL SETTING

4.1 Location

NAS Patuxent River is located in the southern portion of St. Mary's County, Maryland, at latitude 38°17'N and longitude 76°25'W, approximately 54 miles (87 kilometers) southeast of Washington, DC. St. Mary's County is the southernmost part of Maryland's western shore and consists of a peninsula surrounded by tidal water on all but the northwestern boundary. NAS Patuxent River occupies a small peninsula and broad headland (known as Cedar Point) at the confluence of the Patuxent River and Chesapeake Bay in the eastern portion of the county. The Station, which comprises approximately 6,400 acres (25.9 square kilometers), is bounded by the Patuxent River to the north, the Chesapeake Bay to the east, and the town of Lexington Park, Maryland to the south and west (NAVFAC, Atlantic Division, 2009b). Figure 1-1 presents the location of NAS Patuxent River, Webster Field Annex and NRC Solomons in the Washington, D.C. metropolitan area.

4.2 Climatology

NAS Patuxent River lies within the Humid Temperate, Semi-Continental Climate Zone. The Station's proximity to the Patuxent and Potomac Rivers, the Chesapeake Bay, and their tributaries affects the local climate. The atmospheric flow in this region is from west to east across North America, and there are four distinct seasons. Prevailing winds are from the northwest, except during the warm months, when they are more southerly. Average wind speeds are approximately nine miles per hour (mph), although winds may reach in excess of 60 mph on rare occasions. Windiest periods in this region include late winter and early spring. Additionally, other extreme weather events, such as tornadoes, hurricanes, and blizzards occur during other seasons, but are very rare.

Normal temperatures for the region range from an average low of 29°F and an average high of 44°F in January (the coldest month) to an average low of 70°F and an average high of 86°F in July (the warmest month).

The annual mean precipitation for the area is approximately 41.7 inches (1.1 meters), with approximately 15 inches (0.381 meters) of this amount occurring as snowfall. Precipitation occurs evenly throughout the year, with slight increases occurring in July and August. In summer, precipitation occurs mostly through thunderstorms, which occur on an average of 33 days per year. Drought may occur in any season but is most likely to occur in the summer (Department of the Navy, 2002).

4.3 Geology

The geological deposits underlying NAS Patuxent River are thick, unconsolidated beds of sand, silt, clay, and gravel resulting from marine deposits. Because these formations are entirely sedimentary in nature, they are extremely vulnerable to erosion. NAS Patuxent River is primarily underlain with a Matapeake-Mattapex-Sassafras soil association with smaller areas of a Sassafras- Beltsville association and Othello-Mattapex association (Department of the Navy, 2002).

The dominant surface sediments at the Station were deposited during the Quaternary Period, primarily Sunderland, Wicomico, and Talbot deposits. Layers that outcrop in St. Mary's County were deposited during the Tertiary and Quaternary Periods. The Station is underlain by a Cretaceous layer, which consists of Arundel, Patapsco, Raritan, Magothy, Matawan, and Monmouth formations (Department of the Navy, 2002).

4.4 Hydrogeology

There are three principal groundwater aquifers beneath NAS Patuxent River: Piney Point-Nanjemoy Aquifer, Aquia Aquifer, and Patapsco Aquifer. The Piney Point- Nanjemoy Aquifer is a major source of potable water for residential users in southern Maryland. The Aquia Aquifer is the principal source of potable and industrial water for both the Station and local public water suppliers. The Station also has two water supply wells tapping into the Patapsco Aquifer.

The elevation of the water table beneath the Station ranges from sea level along the coastal areas to approximately 80 feet (24 meters) below msl in the southwestern portion of the facility (Department of the Navy, 2009).

Several major drainage areas collect precipitation runoff from the Station. This runoff goes directly to one of four hydraulic sinks: (1) Patuxent River, (2) Chesapeake Bay, (3) estuary areas, or (4) freshwater creeks and ponds and associated wetland areas. All of the runoff from the Station eventually flows to the Chesapeake Bay.

There are six constructed ponds located on the Station. Except for Richneck Pond, all are located in the southern and western portions of the Station and serve to control runoff and provide fish and wildlife habitats, recreation, and a source of water for firefighting. In addition to these water bodies, there are low-lying areas throughout the Station that tend to act as temporary stormwater storage areas, helping to control runoff rates and downstream flooding (Department of the Navy, 2002).

4.5 Topography

The terrain at NAS Patuxent River rises gradually from the Chesapeake Bay shoreline westward. A majority of the Station (70 percent) is level and fairly well-drained. Some low areas are somewhat-poorly-drained to poorly-drained, and become intermittently flooded and/or saturated. The southwestern portion of the Station is hilly, with the highest elevations on the Station.

The United States Geologic Survey (USGS) Solomons Island, Maryland quadrangle indicates a general topographic gradient of east-north-east (ENE) for the Station. Elevation averages 35 feet (10 meters) above msl at the center of the Station, with higher elevations on the western portion of the property and lower elevations on the north and east boundaries with the Patuxent River and the Chesapeake Bay, respectively (EDR, 2010a; EDR, 2010b).

5. ENVIRONMENTAL CONDITIONS OF SUBJECT PROPERTY

This section discusses various aspects of the affected environment within EUL Site 1 and provides regulatory background, discussion of resources or features present, and an overview of restrictions, land use controls, and consultation requirements that may be necessary for development within this site.

A site map (Figure 5-1) was developed using GIS data retrieved from the Navy. The map displays the pertinent environmental constraints identified in the site. The map is not comprehensive and is intended only to support the information provided in this report.

5.1 Environmental Restoration

The Environmental Restoration (ER) program at NAS Patuxent River was established to comply with the Federal Facility Agreement (FFA) signed on December 2000 between the Navy and the EPA Region III. The ER program identifies, investigates, and environmentally restores sites containing hazardous substances to reduce the risk to human health and the environment. The ER program also incorporates the Munitions Response Program (MRP), which manages the environmental, health, and safety issues presented by unexploded ordnance (UXO), discards munitions, munitions constituents, and other munitions and explosives of concern (MEC) found on-base (Department of the Navy, 2009b).

Due to the historical use of NAS Patuxent River and procedures once used to treat and dispose of waste and munitions, the installation as a whole is at risk for environmental contamination. A variety of facility-wide, multi-site and single site environmental investigations have been conducted at NAS Patuxent River to identify and assess the presence of contaminants in areas of potential concern. The Station's Site Management Plan identifies 56 specific environmental restoration sites at NAS Patuxent River (Department of the Navy, 2009). Numerous additional investigations are underway or are anticipated to begin during Fiscal Year (FY) 2010 and FY 2011.

EUL Site 1

Upon review of the Site Management Plan, it has been determined that no documented ER sites are located within EUL Site 1 and no additional investigations are underway or anticipated within EUL Site 1 (Department of the Navy, 2009). Therefore, no environmental conditions, restrictions, or land use controls associated with the ER program would apply to EUL Site 1.

5.2 Munitions or Explosives of Concern

EUL Site 1

There are no documented MRP sites within EUL Site 1, and no explosives operations (e.g., munitions storage or handling) are known to have taken place within EUL Site 1. However, due to incomplete records and historical disposal practices at NAS Patuxent River, there is some potential to find MEC, including buried UXO, during earthwork at the Station (Simpson, 2010; NAVFACWASH, 2010). If MEC is discovered, earth disturbance in the vicinity of the discovery must cease and the location and description of the item(s) must be reported immediately to the Navy Project Manager.

5.3 Tanks/Petroleum Contamination

Storage tanks are classified based on their location and referred to as aboveground storage tanks (AST) and underground storage tanks (UST). Through the Resource Conservation and Recovery Act's (RCRA) Hazardous and Solid Waste Amendments, EPA established a federal program to regulate USTs containing petroleum and hazardous chemicals to limit corrosion and structural defects and thus minimize future tank leaks. In addition, the amendments directed EPA to set operating requirements and technical standards for tank design and installation, leak detection, spill and overfill control, corrective action, and tank closure. The UST program is implemented in Maryland by the Maryland Department of the Environment (MDE) (USEPA, 2010b).

Storage tanks at NAS Patuxent River are used to store a variety of petroleum products to support mission-related activities. NAS Patuxent River has an active Tank Management Plan that lists both ASTs and USTs currently in use, regulatory requirements for each storage tank, and ensures proper inspection and maintenance is performed (Naval Air Station Patuxent River, Maryland, 2008). Spills and resulting soil contamination from ASTs, USTs, or other sources of petroleum are documented and stored in a spill database specific to NAS Patuxent River and separate to the Tank Management Plan. The spill database contains a complete record of spills dating back to 1994.

EUL Site 1

No petroleum tanks are known to be present within EUL Site 1 (Naval Air Station Patuxent River, Maryland, 2008; NAVFACWASH, 2010). Additionally, there are no historical records of tanks formerly within this site. However, historical tank records may be incomplete, and there is some potential that undocumented tanks could be encountered during earthwork at the Station. Accordingly, there is also some potential for subsurface or groundwater contamination as a result of spills or leaks associated with any such undocumented tanks (Costanzo, 2010). Also, a portion of EUL Site 1 is used to store RVs, automobiles, and boats which have the potential to leak petroleum and other chemicals into the soil. As a result, there is the potential for petroleum contamination (Olson, D. 2010). Please refer to Section 5.4 (Hazardous Substances/Hazardous Waste) for more information. A more detailed site inspection including multi-media sampling is recommended prior to development to assess contamination from leaking tanks, engines, and other containers.

5.4 Hazardous Substances/Hazardous Waste

Hazardous substances and hazardous waste are defined by EPA as a material that exhibits a characteristic of ignitability, corrosivity, reactivity, or toxicity, or is specifically listed as a hazardous material. Several federal environmental policies list and require special handling procedures for certain hazardous substances, including the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), Toxic Substances Control Act (TSCA), and RCRA. CERCLA, better known as the Superfund, ensures liability and clean-up of abandoned hazardous material by responsible parties provides (USEPA, 2010d). EPA controls hazardous substances through the TSCA, which addresses chemical substances and mixtures whose manufacture, processing, distribution, use, or disposal may present an unreasonable risk of injury to health or the environment (Department of the Navy, 2009b). RCRA is broad in its regulatory management of solid and hazardous waste, including cleanup, through corrective action, of releases of hazardous waste at RCRA-regulated facilities, such as NAS Patuxent River.

RCRA requires cradle-to-grave management of hazardous waste through a recordkeeping system that tracks shipments of hazardous waste. Hazardous waste treatment, storage, and disposal facilities are regulated through the issuance of operating permits. EPA has delegated the enforcement of RCRA in Maryland to MDE.

On-site accumulation times for hazardous waste at NAS Patuxent River are restricted to the applicable time frames referenced in 40 CFR 262.34 and other applicable Maryland laws or regulations. Non-explosive hazardous waste is transported to an approved, off-site hazardous waste treatment, storage, or disposal facility in accordance with Department of Transportation regulations. The hauling and disposal of demolition debris, including hazardous wastes containing lead, asbestos, and air conditioner refrigerant, is performed in compliance with local, state, and federal codes and requirements.

NAS Patuxent River is listed in the EDR as a Large Quantity Generator (LQG) of hazardous wastes (EDR, 2010c). There are 50 buildings designated as satellite accumulation areas for hazardous waste. Pursuant to 40 CFR 262.34(c)(1), these points may accumulate as much as 55 gallons (208 liters) of hazardous waste or one quart of acutely hazardous waste. Once they become full, containers at these satellite accumulation points must be transferred to one of the 38 active less-than-90-day central accumulation sites at NAS Patuxent River.

EUL Site 1

Due to use as an RV, motor vehicle, and boat storage area, there is the potential for hazardous substance storage and contamination (Olson, 2010) at EUL Site 1. The 1.2 acres (0.005 square kilometers) fenced storage area within EUL Site 1 began being used as storage area prior to 1995. During a site visit, several of the approximately 20 stored vehicles were noted to be in deteriorated condition and may have been abandoned for several years. Additionally, there were containers of cleaning and mechanical fluids (e.g., portable gasoline tanks, lighter fluid) scattered throughout EUL Site 1. These abandoned vehicles and containers may potentially have leaked over time, resulting in minor contamination of the site with petroleum products or other hazardous materials. A more detailed site inspection and soil sampling is required prior to development to assess hazardous substance contamination from leaking tanks, engines, and other containers.

There are no records of any hazardous waste storage or contamination at EUL Site 1 (Olson, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with hazardous waste would apply to EUL Site 1.

5.5 Solid/Bio-hazardous Waste

Solid waste is any garbage, refuse, sludge, or other discarded material including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, agricultural, or community activities (Department of the Navy, 2009b). Bio-hazardous waste, or medical waste, is defined as all waste generated at health care facilities, such as hospitals, clinics, physician's offices, dental practices, blood banks, and veterinary hospitals/clinics, as well as medical research facilities and laboratories. Solid and bio-hazardous waste generators, transporters, destruction facilities, and disposal facilities are subject to RCRA, and applicable state and local regulations and regulatory requirements that prohibit disposing of solid waste in open dumps and require bio-hazardous waste be treated and disposed of safely (USEPA, 2010c).

EUL Site 1

EUL Site 1 has not been associated with the generation, handling, or storage of bio-hazardous or solid waste (Olson, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with solid and bio-hazardous waste would apply to EUL Site 1.

5.6 Polychlorinated Biphenyls

The TSCA authorizes EPA to secure information on all new and existing chemical substances and to control any of these substances that could cause an unreasonable risk to public health or the environment. PCBs are regulated under Title I, Control of Toxic Substances, which includes provisions for testing chemical substances and mixtures, manufacturing and processing notices, regulating hazardous chemicals substances and mixtures, managing imminent hazards, and reporting and retaining information.

EUL Site 1

PCBs were originally used at NAS Patuxent River in transformers located throughout the installation. However, all transformers containing PCBs were retrofitted or replaced in the 1970s and 1980s. No PCB program or reports have been developed due to the overall low risk of PCB equipment and exposure (Ichniowski, 2010). As a result, no environmental conditions, restrictions, or land use controls associated with PCBs would apply to EUL Site 1.

5.7 Asbestos-Containing Material

Asbestos abatement is regulated under the TSCA Title II, Asbestos Hazard Emergency Response, which was added by the Asbestos Hazard Emergency Response Act (AHERA). AHERA provides for the promulgation of federal regulations requiring inspection for asbestos and appropriate response actions in schools and mandates periodic reinspection. In addition, it requires EPA Administrators to determine "the extent of the danger to human health posed by asbestos in public and commercial buildings and the means to respond to any such danger" (Department of the Navy, 2009c).

Several of the buildings at NAS Patuxent River were built prior to health concerns related to asbestos-containing material (ACM) arose and regulations were implemented. An asbestos survey was completed for buildings suspected of having ACM during the early 1990s. A report was completed for each building and mitigation and clean-up efforts were completed thereafter (Apex Environmental, Inc., 1993). However, due to the likelihood that ACM remains present in many buildings, it should be assumed that all buildings subject to renovation or demolition contain ACM unless a report demonstrates otherwise.

EUL Site 1

There are no buildings or other types of infrastructure at EUL Site 1 that would have the potential for asbestos-containing materials, and none are known to have previously existed at EUL Site 1 (EDR, 2010a; EDR, 2010b; NAVFACWASH, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with ACM would apply to EUL Site 1.

5.8 Lead-based Paint

The use of toxic lead-based paint (LBP) was banned in 1977 by the Consumer Product Safety Commission. The MDE has established the Lead Poisoning Prevent Program to enhance citizen safety and prevent exposure to LBP (MDE, 2010b).

Before it was removed from the market, LBP was commonly used on the exterior and interior walls during the renovation or construction of buildings at NAS Patuxent River. Many of these buildings remain today. No comprehensive survey of LBP containing-buildings has been completed for NAS Patuxent River. Due to the age of many buildings at NAS Patuxent River and lack of LBP mitigation or clean-up efforts, it is suspected that buildings built before 1978 contain LBP unless documentation demonstrates otherwise.

EUL Site 1

There are no buildings or other types of infrastructure at EUL Site 1 that would have the potential for lead-based paint, and none are known to have previously existed at EUL Site 1 (EDR, 2010a; EDR, 2010b; NAVFACWASH, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with LBP would apply to EUL Site 1.

5.9 Pesticides and Herbicides

NAS Patuxent maintains an Integrated Pest Management Plan (IPMP), which is a long-range planning and operational tool that establishes the strategy and methods for conducting a safe, effective, and environmentally sound integrated pest management program. The IPMP covers all pest management and pesticide-related activities conducted within all areas of the installation. The IPMP was developed in accordance with Navy guidance (e.g., OPNAVINST 6250.4) and applicable laws and regulations, such as the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). FIFRA provides the basis for regulation, sale, distribution and use of pesticides in the US, and addresses applicator certification requirements, record keeping, and penalties for pesticide misuse (NAVFAC, Atlantic Division, 2009a).

EUL Site 1

There are documented invasive species present at EUL Site 1; however, no pesticide or herbicide treatment has occurred. Therefore, no environmental conditions, restrictions, or land use controls associated with pesticide or herbicide contamination would apply to EUL Site 1 (Smith, 2010b).

5.10 Radon/Radiological Material

Indoor radon concentrations are regulated under TSCA Title III (Indoor Radon Abatement). In response, the Navy established the Radon Assessment and Mitigation Program (NAVRAMP)

which identifies, assesses, and mitigates the infiltration of radon into existing Navy-occupied buildings and incorporates preventive practices in the design and construction of new buildings.

EUL Site 1

St. Mary's County is classified as Zone 2 by the EPA, indicating a moderate potential for elevated indoor radon levels. However, a base-wide survey of radon levels was completed in the 1970s and 1980s. The survey found no radon levels of concern; therefore, no radon program is established at the Station (Ichniowski, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with elevated radon levels would apply to EUL Site 1.

5.11 Water Quality

5.11.1 *Surface Water*

Important aquatic resources at NAS Patuxent include the Patuxent River, Chesapeake Bay, Pine Hill Run, Goose Creek, Pearson Creek, Harper's Creek, and six freshwater ponds. These open water areas range from brackish to freshwater systems and support a variety of fish and wildlife resources. NAS Patuxent is situated on a peninsula at the mouth of the Patuxent River. Of NAS Patuxent's approximately 6,400 acres (25.9 square kilometers), 1,041 acres (4.2 square kilometers) are open water or wetland (discussed in Section 5.12.2(Wetlands)). This acreage is comprised of six freshwater ponds; several perennial and intermittent streams; four estuaries; two seaplane basins; a partially enclosed sea-wall; and numerous saline, freshwater tidal, and nontidal marshes, in addition to forested and scrub/shrub wetlands (Department of the Navy, 2002).

NAS Patuxent shares boundaries with two significant resources – the Chesapeake Bay and the Patuxent River. The Chesapeake Bay, with its associated salt marshes, is the largest estuary in North America and one of the most productive in the world. Its bounty of finfish, shellfish, crabs, and waterfowl is world-renowned. The Patuxent River is one of the rivers initially designated as part of the Maryland State Wild and Scenic Rivers Program. In addition, while no Maryland river is on the National Wild and Scenic Rivers System, Patuxent River is listed in the Nationwide Rivers Inventory as having the significant resource values required for potential inclusion (Department of the Navy, 2002).

NAS Patuxent contains many miles of intermittent and perennial headwater streams. Streams usually occupy well-defined channels where topographic gradients are steeper or where they have been channeled. In the level, low-lying areas, streams often occupy split or braided channels. Those streams occurring in densely forested areas have not all been detected by photo interpretation or mapped.

EUL Site 1

There are no surface waters at EUL Site 1 (Department of the Navy, 2002). However, EUL Site 1 is within the Chesapeake Bay Critical Area (see Figure 5-1). The Chesapeake Bay Critical Area Law regulates all lands under the tidal influence of the Chesapeake Bay and its tributaries up to the head of the tide, as well as wetlands connected to these waters. It also regulates land within a 1,000-foot boundary inland from that line. The Critical Area Law is included within

Maryland’s Coastal Zone Management Program. Any disturbance within the Critical Area would require consultation with the Chesapeake Bay Critical Area Commission.

5.11.2 Stormwater

Stormwater is generated when precipitation runs off from land and impervious areas such as paved streets, parking lots, and building rooftops. Stormwater runoff can collect pollutants such as oil and grease, chemicals, nutrients, metals, and bacteria as it travels across land, and it also causes soil erosion when traveling at velocities sufficient to carry sediment particles. The Clean Water Act (CWA) regulates both direct and indirect discharges of “priority” pollutants that are often conveyed by stormwater, such as total suspended solids, fecal coliform, and oil and grease. Stormwater is typically managed using structural or nonstructural Best Management Practices (BMPs). Structural BMPs include control systems such as infiltration devices, ponds, filters and constructed wetlands, while nonstructural BMPs include low impact development (LID) practices and management measures (USEPA, 2004).

EUL Site 1

Stormwater currently flows across pervious surfaces and vegetated areas to the northern boundary of the site into a drainage ditch. Any new development within EUL Site 1 must be designed and executed in accordance with applicable requirements of the following standards and regulations to ensure that stormwater impacts are minimized. Pursuant to Section 438 of the Energy Independence and Security Act (EISA) of 2007, development with a footprint greater than 5,000 square feet (465 square meters) must maintain or restore to the maximum extent practicable pre-development hydrology with respect to temperature, rate, volume, and duration of flow (U.S. Congress, 2007). Pursuant to the Navy’s LID policy, the Navy sets a goal of no net increase in stormwater volume and sediment or nutrient loading from construction projects (Department of the Navy, 2007). Pursuant to Maryland’s Stormwater Management Act of 2007, development with a footprint greater than 5,000 square feet must implement environmental site design (ESD), to the maximum extent practicable (MEP) in accordance with Section 4.0 Stormwater Management Criteria of the 2000 Maryland Stormwater Design Manual. Additionally, re-development with a footprint greater than 5,000 square feet must implement ESD to the MEP to provide water quality treatment for a minimum of 50 percent of the existing impervious area within the limits of disturbance. For additional information, please reference the 2000 Maryland Stormwater Design Manual (MDE, 2009; MDE, 2010).

5.11.3 Groundwater

The Safe Drinking Water Act (SDWA) was originally passed by Congress in 1974 to protect public health by regulating the nation’s public drinking water supply. The law was amended in 1986 and 1996 and requires the protection of drinking water and its sources – rivers, lakes, reservoirs, springs, and groundwater wells. SDWA authorizes the US EPA to set national health-based standards for drinking water to protect against both naturally-occurring and man-made contaminants that may be found in drinking water (USEPA, 2010f).

The drinking water at NAS Patuxent is pumped from the Piney Point/Nanjemoy, Aquia, and Patapso aquifers – groundwater sources below St. Mary’s County. The Compliance Division of the NAVFACWASH Public Works Environmental Department at NAS Patuxent River is responsible for both groundwater monitoring and protection of groundwater well locations on the

Station. However, to date, no formal Source Water or Wellhead Protection Plan has been written (NAVFAC, Atlantic Division, 2009b).

EUL Site 1

There are no known groundwater wells present within EUL Site 1; therefore, there is no site specific information on the groundwater. Due to the use of the site as a long-term vehicle storage lot, groundwater contamination due to leaking petroleum sources may exist. A more detailed site inspection including multi-media sampling is recommended prior to development to assess contamination from leaking tanks, engines, and other containers. Please reference Section 5.3 (Tanks/Petroleum Contamination) for more information.

5.12 Natural Resources

5.12.1 *Forests*

Forested areas account for approximately 42 percent (2,817 acres, 11.6 square kilometers) of the land cover at NAS Patuxent. The forests on NAS Patuxent are presented in four broad classifications of forest types: bottomland pine; upland pine; bottomland hardwood; and upland hardwood (Department of the Navy, 2002).

Pine forests are defined as areas dominated mainly by trees of the genus *Pinus*, consisting of needle-leaved evergreen species. Upland pine forest accounts for 7 percent (207 acres, 837,700 square meters) of the forests encountered on NAS Patuxent. Bottomland pine forest consists of needle-leaved evergreen species in areas where the water table is at a depth sufficient to influence the development of oxygen-reducing conditions and create hydric soil and hydrophytic vegetation characteristics. This forest type accounts for 1 percent (24 acres, 97,100 square meters) of the forests encountered on NAS Patuxent. Upland hardwood forests consist of hardwood tree species in areas where the water table is below a depth where hydric characteristics develop in the soils and plant community. This forest type accounts for 21 percent (581 acres, 2,351,000 square meters) of the forests encountered on NAS Patuxent. Pine species also occur in combination with hardwood tree species to form mixed forest types. This mixed forest type accounts for 21% (580 acres, 2,350,200 square meters) of the forests encountered on NAS Patuxent.

NAS Patuxent is an important migratory bird area as a result of extensive forest stands throughout the base. The Migratory Bird Treaty Act (MBTA) protects migratory birds and their habitats, and establishes a permitting process for legal taking. Except as permitted, actions of the Navy may not result in pursuit, hunting, taking, capture, killing, possession, or transportation of any migratory bird, bird part, nest, or egg thereof.

The potential for commercial forest products such as poletimber, sawtimber, pulpwood, and firewood is an added economic benefit afforded by the forested areas on NAS Patuxent. All merchantable timber that is cut on NAS Patuxent is considered Navy Real Property and must be disposed of properly, with appropriate disbursement to the Navy Forestry Account.

The most important management prescription proposed for wildlife habitat concerns is the designation of a large, contiguous forest block on the south side of the Station. This forested area will benefit many rare, threatened, and endangered species that are known to and/or have the

potential to inhabit the region. The most important indicator of the success of the forest management prescription for the maintenance and restoration of critical ecosystem functions is the monitoring of Forest Interior Dwelling Species (FIDS). These species are considered "area sensitive" species and require some critical mass of contiguous forest type in order to survive. The monitoring of populations of these species is crucial in determining the success of the forest block (Department of the Navy, 2002).

EUL Site 1

The fragmented forest within the northern portion of EUL Site 1 can be classified as upland pine stands (Navy Enhanced Use Lease Patuxent River, 2010; NAVFACWASH, 2010; Department of the Navy, 2002). The pine stand in the northern portion of EUL Site 1 is highly fragmented and non-contiguous, and does not support FIDS (Rambo, 2010). Development of EUL Site 1 may require tree removal within the 1,000-foot Critical Area. Any tree removal within this buffer would require consultation with the Chesapeake Bay Critical Area Commission and may require replanting of trees within the Critical Area contained within EUL Site 1 (Rambo, 2010). Additionally, any tree clearing is recommended to take place in the winter to avoid disrupting the nesting of migratory birds. Any merchantable timber associated with clearing for development of EUL Site 1 must be disposed of properly, and with appropriate disbursement to the Navy Forestry Account (Department of the Navy, 2002).

5.12.2 Wetlands

The United States Army Corps of Engineers (USACE) and EPA define jurisdictional wetlands as areas that are inundated or saturated by surface water or groundwater frequently and long enough to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands provide important plant and wildlife habitat and serve as buffers and filters essential for maintaining the water quality of nearby surface waters.

The wetlands at NAS Patuxent River are protected by Section 404 of the CWA, Executive Order (EO) 11990 (Wetland Protection), and applicable state regulations, including the Maryland Nontidal Wetlands Protection Act, Maryland Tidal Wetlands Act, and the Waterway and 100-Year Floodplain Construction Regulations. Section 404 of the CWA prohibits the discharge of dredged or fill material into wetlands or other waters of the United States if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's water would be significantly degraded. Regulated activities are controlled by a permit review process administered by the USACE (USEPA, 2010e).

EO 11990 was implemented in 1977 to protect wetlands and their associated ecosystem services. This EO directs each federal agency to avoid undertaking or providing assistance for new construction located in wetlands unless the head of the agency finds that 1) there is no practicable alternative to such construction, and 2) all practicable measures will be taken to minimize impacts to the wetlands. In addition, the Navy has a "no net loss" policy requiring the replacement of any wetlands destroyed or eliminated through a project.

To protect jurisdictional wetlands, MDE requires maintaining an area surrounding a wetland called a buffer. Activities that may disturb or occur within a non-tidal or tidal wetland or surrounding buffer are regulated under COMAR 26.23 and COMAR 26.24, respectively.

According to COMAR 26.23.01, a buffer is a regulated area, 25 feet in width, surrounding a nontidal wetland, and measured from the outer edge of the non-tidal wetland. MDE requires the action proponent to obtain a Non-tidal Wetlands and Waterways Permit for any activity that alters a non-tidal wetland or its 25-foot buffer.

The Chesapeake Bay Critical Area Commission requires maintaining a 100-foot buffer around tidal wetlands and streams to improve runoff water quality and reduce the amounts of toxic substances entering tidal waters (Critical Area Commission, 2008). The Navy maintains these areas at NAS Patuxent by avoiding removal of trees within 100-foot riparian buffers wherever possible (U.S. Department of the Navy, 2008).

Wetland delineations for NAS Patuxent were performed with data collection between June and October 1995. This technique produced a wetland delineation that was conservative and probably included some upland areas. These delineations were not flagged or surveyed in the field; therefore they should be considered rough estimates (Rambo, 2010; Smith, 2010a; Department of the Navy, 2002).

EUL Site 1

According to the NAS Patuxent River GIS, forested and scrub/shrub wetlands are present along the north EUL Site 1 boundary. Prior to development of EUL Site 1, consultation with NAS Patuxent River Environmental Division personnel is required to determine the need for a site-specific wetland survey.

5.12.3 Floodplains

A floodplain is the area along or adjacent to a stream or a body of water that is capable of storing or conveying floodwaters. Floodplains perform important natural functions, including moderating peak flows, maintaining water quality, recharging groundwater, and preventing erosion. In addition, floodplains provide wildlife habitat, recreational opportunities, and aesthetic benefits. To protect floodplains and minimize future flood damage, EO 11988 Floodplain Management restricts development within the 100-year floodplain. A 100-year floodplain is defined as an area that is subject to a one-percent or greater chance of flooding in any given year. Under EO 11988, all federal agencies must 1) determine if any of their actions would occur within a floodplain, 2) evaluate the potential effects of these actions, and 3) analyze alternatives to these actions.

EUL Site 1

There are no floodplains within EUL Site 1 (Department of the Navy, 2002). Therefore, no environmental conditions, restrictions, or land use controls associated with the presence of floodplains would apply to EUL Site 1.

5.12.4 Coastal Zone

Maryland's Coastal Zone Management (CZM) Program was created in response to the passage of the Federal Coastal Zone Management Act of 1972. The goal of this program is to "preserve, protect, develop and, where possible, restore our coastal resources." Maryland's CZM Program was created in 1978 and is a network of state laws and policies designed to protect coastal and

marine resources. Maryland's coastal zone includes 3,190 miles of coast in 16 counties and Baltimore City (MDNR, 2002). This area includes the Chesapeake Bay, coastal bays, and the Atlantic Ocean, as well as the towns, cities, and counties that have jurisdiction over the coastline. Maryland's coastal zone encompasses two thirds of the state's land area and is home to greater than 65 percent of the state's residents (MDNR, 2002). Federally controlled lands are excluded from the coastal zone per 16 U.S.C. 1453, Section 304, Paragraph (1). However, the Coastal Zone Management Act requires all federal activities that could affect land, water, or natural resources on the coastal zone to be consistent to the maximum extent practicable with the enforceable policies of the approved state CZM program. That is, even if the action occurs on federal land (excluded from the coastal zone), the action must be consistent to the maximum extent practicable with the state CZM program if it affects coastal resources.

As previously mentioned in Section 5.11.1 (Surface Water), the Chesapeake Bay Critical Area Law regulates all lands under the tidal influence of the Chesapeake Bay and its tributaries up to the head of the tide, as well as wetlands connected to these waters. It also regulates land within a 1,000-foot boundary inland from that line. The Critical Area Law is included within Maryland's Coastal Zone Management Program. Any disturbance within the Critical Area would require consultation with the Chesapeake Bay Critical Area Commission.

EUL Site 1

Development of EUL Site 1 may require tree removal within the 1,000-foot Critical Area regulated by Maryland's Coastal Zone Management Program (NAVFACWASH, 2010, Department of the Navy, 2002). Any tree removal within this buffer would require consultation with the Chesapeake Bay Critical Area Commission and may require replanting of trees within the Critical Area contained within EUL Site 1 (Rambo, 2010). Due to its proximity to the Patuxent River, development of EUL Site 1 may have the potential to impact the coastal zone (e.g., wastewater discharges, air emissions, noise, etc. could affect use of the coastal zone). Any such potential impacts would require submission of a Coastal Zone Consistency Determination to MDE's Wetlands and Waterways Program.

5.12.5 Essential Fish Habitat

Fish and invertebrate species and their habitat are regulated and protected by several federal laws. The most notable of the federal laws is the Fishery Conservation and Management Act of 1976, which was reauthorized and amended by the Sustainable Fisheries Act in 1996 and is now popularly designated as the Magnuson-Stevens Fishery Conservation and Management Act. These acts mandated habitat conservation for federally managed fish species via the conservation tool known as essential fish habitat (EFH). The EFH mandate required that regional fishery management councils, through Federal Fishery Management Plans, describe and identify EFH for each federally managed species, minimize to the extent practicable any adverse effect on such habitat caused by fishing, and identify other actions to encourage the conservation and enhancement of such habitats. EFH is defined by Congress for managed species as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (16 U.S.C. 1802[10]). Within the vicinity of the NAS Patuxent River (upper Chesapeake Bay), EFH has been designated for 11 of the 23 EFH fish species found in the Chesapeake Bay.

EUL Site 1

There is no essential fish habitat within EUL Site 1 (Department of the Navy, 2002). Therefore, no environmental conditions, restrictions, or land use controls associated with the presence of essential fish habitat would apply to EUL Site 1.

5.12.6 Threatened or Endangered Species

The Endangered Species Act of 1973 (ESA) protects federally-listed threatened, endangered, and candidate species of fish, wildlife, and plants and their designated critical habitats. Under this law, no federal action is allowed to jeopardize the continued existence of an endangered or threatened species. ESA also requires consultation with the United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (now called National Oceanographic & Atmospheric Administration (NOAA) Fisheries Service) and the preparation of a biological assessment when such species are present in an area that is affected by government activities (USFWS, 2010).

EUL Site 1

Based on previous surveys and discussions with NAS Patuxent Environmental Division personnel, there are no federally- or state-listed threatened or endangered species at EUL Site 1 (Smith, 2010a; Department of the Navy, 2002). Therefore, no environmental conditions, restrictions, or land use controls associated with the presence of threatened or endangered species would apply to EUL Site 1.

5.13 Cultural Resources

The National Historic Preservation Act of 1966 (NHPA), enacted under 16 United States Code (U.S.C.) 470, provides for the National Register of Historic Places (the Register), defines National Historic Landmarks, provides for the designation of a State Historic Preservation Officer (SHPO), and establishes the Advisory Council on Historic Preservation (ACHP). The Register lists sites, districts, buildings, structures, and objects of significance in American history, architecture, archeology, engineering, and culture. These resources may be of local, State, or national significance. Section 106 of the NHPA requires federal agencies to consider the effects of undertakings (i.e., actions) on any resource that is included or eligible for inclusion in the Register, and to afford the ACHP a reasonable opportunity to comment on such undertakings. In Maryland, the Maryland Historical Trust (a division of the Maryland Department of Planning) serves as the SHPO and also participates in Section 106 consultations. Pursuant to OPNAVINST 5090.1C, Chapter 5-5, an Environmental Assessment must be prepared for any proposed action that would have an adverse effect on resources listed or determined to be eligible for listing in the Register.

Section 110 of the NHPA requires federal agencies to establish a preservation program for the identification, evaluation, nomination (for the Register), and protection of historic properties. To this end, the Navy performs surveys and investigations to identify any historic properties under its jurisdiction.

5.13.1 Historic Architectural Resources

The most recent architectural and historic landscape evaluation of NAS Patuxent was performed in October 2009 (NAVFACWASH, 2009; NAVFACWASH, 2010). The surveys identified architectural resources and determined if resources were eligible for listing on the Register.

EUL Site 1

No historic buildings or landscapes have been identified within EUL Site 1 (Smolek, 2010). However, Hangar 301 (which is eligible for listing on the Register) is adjacent to EUL Site 1, which may result in development restrictions. SHPO must be consulted to seek their concurrence for this undertaking. Please refer to Section 6 ([Environmental Conditions of Adjacent Property](#)) for more information.

5.13.2 Archeological Resources

Archeological resources are material remains of past life or activities (Reinke & Swartz, 1999). Some examples of archeological resources include pottery, basketry, bottles, weapons, tools, rock paintings, rock carvings, and gravesites.

The Native American Graves Protection and Repatriation Act of 1990 (NAGPRA), enacted under 25 U.S.C. 3001, prohibits the intentional removal of certain types of Native American cultural items from federal or tribal lands. Removal of cultural items may be permitted under an Archeological Resource Protection Act (ARPA) permit, which includes authorization and a written agreement between the federal agency and an appropriate repository that will house and curate the collection recovered from the project, and in consultation with the appropriate Native American groups (USDI, 2010). NAGPRA provides for the return of burial remains, associated funerary objects, sacred objects, and objects of cultural patrimony to the appropriate tribes. It established Native American ownership of human remains and associated artifacts discovered on federal lands after the date of enactment (USDI, 2010).

EUL Site 1

A Phase I archeological survey, which locates archeological resources, has been performed at NAS Patuxent to make generalizations about the type and distribution of archeological properties that may be present. This survey indicated that no potentially-significant resources are known to be present at EUL Site 1 (Smolek, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with the presence of known archeological resources would apply to EUL Site 1. However, once the lessee provides information about the development plans, the Navy will pursue consultation with SHPO to seek concurrence that there is no adverse effect to archaeological resources. Any artifacts found during construction must be brought to the attention of the Navy and are property of the Navy.

5.14 Air Quality

Air quality is regulated under the authority of Title I, Part A, Section 109 of the Clean Air Act (CAA). EPA has established health-based National Ambient Air Quality Standards (NAAQS) for the criteria pollutants carbon monoxide, nitrogen dioxide, ozone, particulate matter, lead, and sulfur dioxide. To monitor and meet the NAAQS, the CAA divides the United States into

geographic areas called “air quality control regions” (AQCRs). St. Mary’s County, where NAS Patuxent River is located, is a designated AQCR. An AQCR in which levels of a criteria air pollutant meet the health-based NAAQS is defined as an *attainment* area for the pollutant, while an area that does not meet the NAAQS is designated a *nonattainment* area for the pollutant. An area that was once designated a nonattainment area but was later reclassified as an attainment area is known as a *maintenance* area. An area may have an acceptable level for one criteria air pollutant but may have unacceptable levels for other criteria air pollutants. Thus, an area could be attainment, maintenance, and nonattainment at the same time for different pollutants.

In addition to NAAQS requirements, federal agencies must obtain permits to operate equipment that generates air emissions. Title V of the CAA establishes an operating permit program that requires all air quality requirements for a source to be combined into one comprehensive permit document. All major sources of air pollutants are required to apply for a Title V permit, which is valid for five (5) years. In addition to complying with the Title V operating permit, the CAA requires that federal agencies comply with state and local air quality requirements in the same manner as any non-governmental entity. NAS Patuxent River has received a Title V operating permit that includes 126 sources of air emissions, in addition to various insignificant emission units (Naval Air Station Patuxent River, Maryland, 2010).

Pursuant to COMAR 26.11.02.09, any new source of emissions must be issued a Permit to Construct (PTC) by MDE prior to installation. A PTC allows the installation of the unit and provides operating requirements that apply until the unit is incorporated into the next renewal of the Title V operating permit.

EUL Site 1

The AQCR of St. Mary’s County is an attainment area for all criteria pollutants of the CAA. The most recent Title V operating permit for NAS Patuxent River is effective on July 1, 2010 and expires June 30, 2015. At EUL Site 1 there are no sources of air emissions identified in the Title V permit and no PTCs have been issued for construction of any emission units (Ichniowski, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with air emissions would apply to EUL Site 1.

5.15 Flight Operation Noise & Safety

In the early 1970s, the DoD established the Air Installations Compatibility Use Zone (AICUZ) Program to balance the need for aircraft operations and community concerns over aircraft noise and accident potential. The objectives of the AICUZ program, according to the Chief of Naval Operations Instruction (OPNAVINST 11010.36C), are the following: 1) to protect the health, safety, and welfare of civilians and military personnel by encouraging land use which is compatible with aircraft operations; 2) to protect the US Department of Navy and Marine Corps installation investments by safeguarding the installation’s operational capabilities; 3) to reduce noise impacts caused by aircraft operations while meeting operational, training, and flight safety requirements, both on and in the vicinity of air installations; and 4) to inform the public about the AICUZ program and seek cooperative efforts to minimize noise and aircraft accident potential impacts by promoting compatible development in the vicinity of military air installations (Department of the Navy, 2008). Accident potential zones (APZ) and Noise Zones are present at and adjacent to air operation areas (e.g., airfields, runways). APZs describe the probably impact area if an accident were to occur. Noise Zones are defined by noise contours that are developed

by a computerized simulation of aircraft activity at the installation and reflect site-specific operational data (e.g., flight tracks, type and mix of aircraft, frequency and times of operations) (Department of the Navy, 2008).

EUL Site 1

There are no APZ present at EUL Site 1 (NAVFACWASH, 2010; Department of the Navy, 2008). EUL Site 1 is within Noise Zone 1 (55-64 decibels). Development within Noise Zone 1 is compatible with all land uses. Therefore, no environmental conditions, restrictions, or land use controls associated with APZ or Noise Zones would apply to EUL Site 1.

5.16 Notices of Violation

EUL Site 1

There are no documented Notices of Violations (NOVs) other than those pertaining to administrative concerns at NAS Patuxent (Smith, 2010a; Gray, 2010b). As a result, no environmental conditions, restrictions, or land use controls associated with NOVs would apply to EUL Site 1.

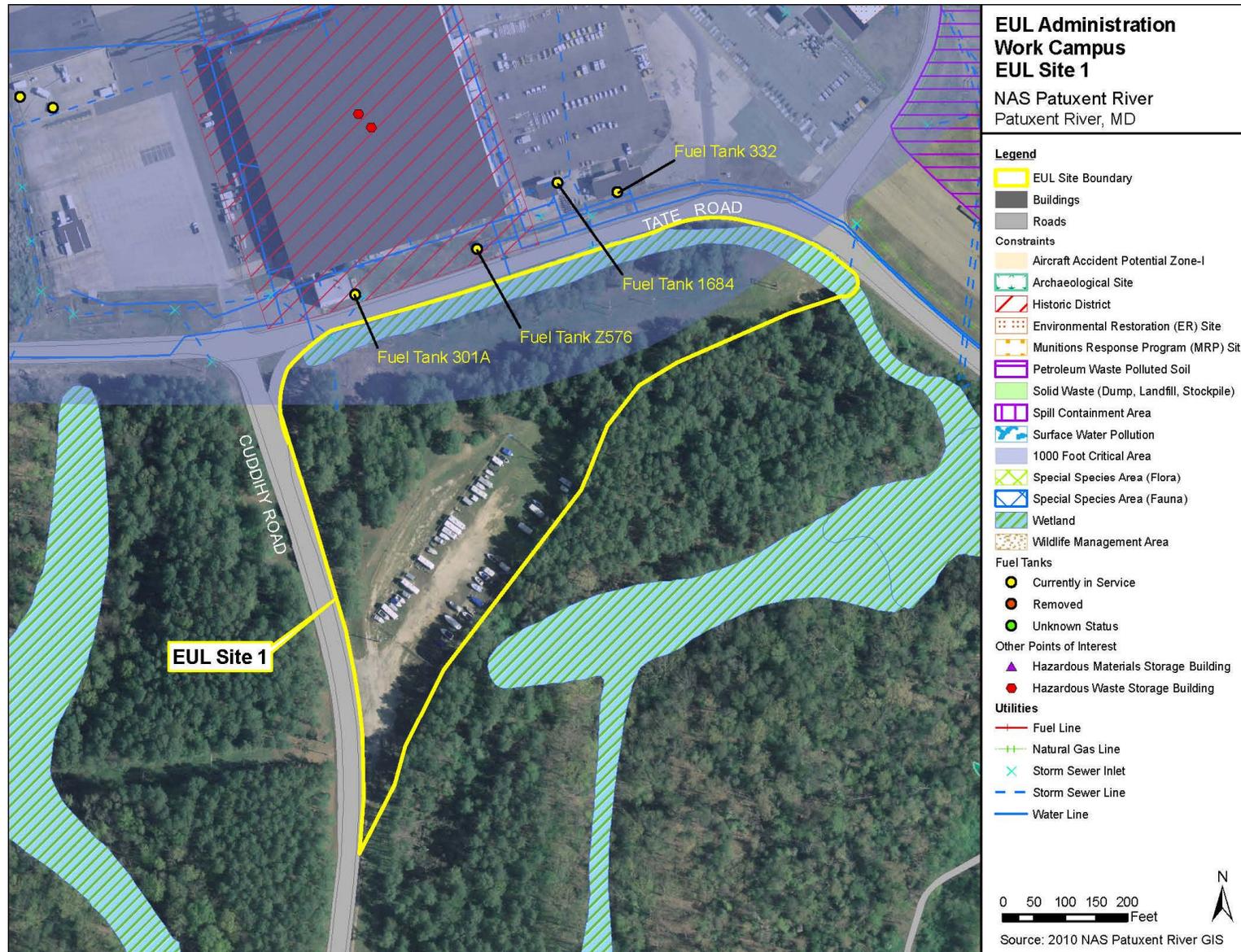


Figure 5-1. Site Conditions – EUL Site 1

6. ENVIRONMENTAL CONDITIONS OF ADJACENT PROPERTY

This ECP study evaluated the adjacent property with respect to all of the environmental considerations that are discussed in Section 5 (Environmental Conditions of Subject Property). This section presents only those adjacent property findings that could potentially affect development or use of EUL Site 1.

All adjoining properties of EUL Site 1 are within the boundaries of NAS Patuxent River. The site is bounded by Cuddihy Road to the west, Tate Road to the north, and shrub/scrub wetland areas to the east and south (see Figure 5-1).

Environmental Restoration

ER Site #31, Tire Shop Building 307, is located approximately 400 ft (121.9 meters) to the northeast of EUL Site 1. Remediation work is still in progress. An Interim Remedial Action (IRA) was completed in 2007 to address sources of polycyclic aromatic hydrocarbons (PAHs) and completed further soil sampling. Groundwater sampling was performed in 2009 and indicated the presence of a volatile organic compound (VOC) plume in groundwater with concentrations exceeding Maximum Contaminant Levels (MCLs) beyond the immediate vicinity of the well location (Department of the Navy, 2009; NAVFACWASH, 2010).

Also, approximately a quarter-mile (0.40 kilometers) to the southeast lays ER Site #2 (Disposal Site at Pond #1). A Naval Assessment and Control of Installation Pollutants Program confirmation study was conducted at ER Site #2 between 1985 and 1987. The results showed elevated concentrations of semi-volatile organic compounds (SVOCs) and pesticides in sediment and fish samples. An Interim Remedial Investigation (IRI) was conducted at ER Site #2 in 1991, confirming low concentrations of metals, a PCB compound, and several pesticides in sediment samples. Low concentrations of metals and a pesticide were also found in fish samples. A Remedial Investigation/Feasibility Study (RI/FS) is scheduled for 2011 to further characterize the site. The Agency for Toxic Substances and Disease Registry (ATSDR) conducted health assessments at NAS Patuxent River in 1995 and 1996 and concluded that fish consumption from Pond #1 should be limited to 19 meals per year for 7 years until additional data is available for risk assessment (Department of the Navy, 2009; NAVFACWASH, 2010).

ER Sites #31 and #2 are both located at a lower elevation than EUL Site 1. Due to the natural flow of groundwater from high to low, there is a minimal risk of contamination to EUL Site 1 from either ER site located in the adjacent property.

Tanks/Petroleum Contamination

A total of six ASTs associated with Building 301 are located adjacent to EUL Site 1 (see Table 6-1). Four tanks are located just across Tate Road from EUL Site 1, and another two are located approximately 500 feet (152 meters) from the NW corner of EUL Site 1. No documented leaks or spills have been reported in regards to these tanks, which are inspected on a monthly basis. However, historical tank records may be incomplete, and there is some potential for adjacent subsurface or groundwater contamination as a result of spills or leaks associated with any such undocumented tanks (Costanzo, G. 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with the presence of aboveground storage tanks in the adjacent area would apply to EUL Site 1.

Table 6-1. Adjacent Area Aboveground Storage Tanks

Tank #	Size (ga)	Contents	Location
301A	6,000	Fuel Oil	Tate Road
332	250	Fuel Oil	Tate Road
1684	250	Diesel Fuel	Tate Road
Z0576	60	Diesel Fuel	Tate Road
301B	1,000	Fuel Oil	NW of EUL Site 1
301C	100	Fuel Oil	NW of EUL Site 1

Historic Architectural Resources

Across Tate Road lies Building 301 (NATS Seaplane Hangar), which is individually eligible for listing on the Register (MHT# SM-902). Because of the close proximity, Building 301 may be within the Area of Potential Effect (APE) of development activities within EUL Site 1. Pursuant to Section 106 of the National Historic Preservation Act, any undertaking whose APE includes a historic property would require consultation with the SHPO to determine whether the undertaking may adversely affect the historic property. As part of this consultation, SHPO may provide design recommendations for any new development in EUL Site 1 to reduce the visual impact on historic properties within the APE.

Wetlands

Shrub/scrub wetlands are found adjacent to EUL Site 1. All wetlands adjacent to EUL Site 1 should be flagged and surveyed according to general management recommendations (GMR) in order to determine wetland delineation. If development occurs within a 100 ft (30.48 meters) buffer of any wetlands, they must be delineated according to CWA Section 404 (see Section 5.12.2 Wetlands). Sediment/erosion control and stormwater measures must be implemented as necessary to prevent any sediment transport into wetlands. These plans must be reviewed and approved by the MDE for projects exceeding 5,000 square feet (464.5 square meters) or 100 cubic yards of disturbance. MDE requires the action proponent to obtain a Non-tidal Wetlands and Waterways Permit for any activity that alters a non-tidal wetland or its 25 ft (7.62 meters) buffer.

7. CONCLUSIONS

Findings of this ECP report for EUL Site 1 and its adjacent properties are based on an extensive record search of available documents, a thorough review of the applicable and relevant documents, analysis of the Station's GIS, two visual surveys conducted on May 18, 2010 and June 1, 2010, and on-site interviews with personnel knowledgeable about the history of EUL Site 1. Findings related to the areas of environmental considerations that were evaluated during the ECP study include:

- Environmental Restoration – No documented ER sites are located within EUL Site 1, and no additional investigations are underway or anticipated within EUL Site 1. However, two ER Sites (ER Site #31 and ER Site 2) are located adjacent to EUL Site 1. ER Site #31 and ER Site #2 are both located at a lower elevation than EUL Site 1. Due to the natural flow of groundwater from high to low, there is a minimal risk of contamination to EUL Site 1 from either ER site located in the surrounding property.
- Munitions or Explosives of Concern – There are no documented MRP sites within EUL Site 1, and no explosives operations (e.g., munitions storage or handling) are known to have taken place within EUL Site 1. However, due to incomplete records and historical disposal practices at NAS Patuxent River, there is some potential to find MEC, including buried UXO, during earthwork at the Station. If MEC is discovered, earth disturbance in the vicinity of the discovery must cease and the location and description of the item(s) must be reported immediately to the Navy Project Manager.
- Tanks/Petroleum Contamination – No petroleum tanks are known to be present within EUL Site 1 (Naval Air Station Patuxent River, Maryland. 2008; NAVFACWASH, 2010). Additionally, there are no historical records of tanks formerly within this site. However, historical tank records may be incomplete, and there is some potential that undocumented tanks could be encountered during earthwork at the Station. Accordingly, there is also some potential for subsurface or groundwater contamination as a result of spills or leaks associated with any such undocumented tanks.
- Hazardous Substances/Waste Management – There are no records of any hazardous waste storage or contamination at EUL Site 1. However, due to use as a vehicle storage area there is the potential for hazardous substance contamination at EUL Site 1. A more detailed site inspection and soil sampling is required prior to development to assess hazardous substance contamination from leaking tanks, engines, and other containers.
- Solid/Bio-hazardous Waste – EUL Site 1 has not been associated with the generation, handling, or storage of bio-hazardous or solid waste.
- Polychlorinated Biphenyls – All transformers containing PCBs were retrofitted or replaced in the 1970s and 1980s. No PCB program or reports have been developed due to the overall low risk of PCB equipment and exposure.

- Asbestos-Containing Material – There are no buildings or other types of infrastructure at EUL Site 1 that would have the potential for asbestos-containing materials, and none are known to have previously existed at EUL Site 1.
- Lead-Based Paint – There are no buildings or other types of infrastructure at EUL Site 1 that would have the potential for lead-based paint, and none are known to have previously existed at EUL Site 1.
- Pesticides and Herbicides – There are no documented occurrences of pesticide or herbicide treatment on EUL Site 1.
- Radon/Radiological Material – A base-wide survey of radon levels was completed in the 1970s and 1980s. The survey found no radon levels of concern at the Station.
- Surface Water – There are no surface waters at EUL Site 1. However, EUL Site 1 is within the Chesapeake Bay Critical Area. Any disturbance within the Critical Area would require consultation with the Chesapeake Bay Critical Area Commission.
- Stormwater – Stormwater currently flows across pervious surfaces and vegetated areas to the northern boundary of EUL Site 1 into a drainage ditch. Any new development within EUL Site 1 must be designed and executed in accordance with applicable requirements of the following standards and regulations to ensure that stormwater impacts are minimized: Section 438 of EISA of 2007; Navy’s LID policy; and Maryland’s Stormwater Management Act of 2007.
- Groundwater – There are no known groundwater wells present within EUL Site 1; therefore, there is no site specific information on the groundwater. Due to the use of the site as a long-term vehicle storage lot, groundwater contamination due to leaking petroleum sources may exist. A more detailed site inspection including multi-media sampling is recommended prior to development to assess contamination from leaking tanks, engines, and other containers.
- Forests – Development of EUL Site 1 may require tree removal within the 1,000-foot Critical Area. Any tree removal within this buffer would require consultation with the Chesapeake Bay Critical Area Commission and may require replanting of trees within the Critical Area contained in EUL Site 1. Tree clearing is recommended to take place in the winter to avoid disrupting the nesting of migratory birds.
- Wetlands – According to the NAS Patuxent River GIS, forested and scrub/shrub wetlands are present along the north EUL Site 1 boundary. Prior to development of EUL Site 1, consultation with NAS Patuxent River Environmental Division personnel is required to determine the need for a site-specific wetland survey.
- Floodplains – There are no floodplains within EUL Site 1.

- Coastal Zone – Development of EUL Site 1 may require tree removal within the 1,000-foot Critical Area regulated by Maryland’s Coastal Zone Management Program. Replanting of trees within the Critical Area contained within EUL Site 1 may be required.
- Essential Fish Habitat – There is no essential fish habitat within EUL Site 1.
- Threatened or Endangered Species – There are no federally- or state-listed threatened or endangered species at EUL Site 1.
- Historic Architectural Resources – No historic buildings or landscapes have been identified within EUL Site 1. However, Hangar 301 (which is eligible for listing on the Register) is adjacent to EUL Site 1, which may result in development restrictions. SHPO must be consulted to seek their concurrence for this undertaking.
- Archeological Resources – A Phase I archeological survey indicated that no potentially-significant resources are known to be present at EUL Site 1. However, once the lessee provides information about the development plans, the Navy will pursue consultation with SHPO to seek concurrence that there is no adverse effect to archaeological resources.
- Air Quality – There are no sources of air emissions identified in the NAS Patuxent River Title V permit and no PTCs have been issued for construction of any emission units at EUL Site 1.
- Noise Safety – There are no AICUZ issues (e.g., accident potential zones, noise) present at EUL Site 1.

In accordance with DoD policy regarding the classification of properties that may exhibit hazardous substance or petroleum contamination (please reference Deputy Under Secretary of Defense Goodman Memorandum dated 21 October 1996), EUL Site 1 has been classified as Category 7. This category applies to properties that have not been evaluated or require additional evaluation. While no releases, disposals, or mitigation of hazardous substances have been documented within EUL Site 1, there is reason to suspect contamination. Possible contamination concerns at EUL Site 1 include leaks from stored vehicles and containers and groundwater contamination from nearby ER sites. Further evaluation of these contamination concerns should be performed prior to execution of any property transfer involving EUL Site 1.

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9. CERTIFICATION

Based on records reviews, site inspections, and interviews, the environmental professional(s) certify that the environmental conditions of the property are as stated in this document and this property is suitable for outgrant.

Environmental Professional:

Signature _____ Title _____

Print Name _____ Date _____

The real estate professional(s) acknowledge these restrictions and/or LUCs identified above and will ensure they are made a part of the outgrant document.

Real Estate Professional:

Signature _____ Title _____

Print Name _____ Date _____

Property Owner (Activity or Region) acknowledges and accepts the foregoing statement of environmental conditions and the land use controls (if any) that will be required for this real estate outgrant:

Signature _____ Title _____

Print Name _____ Date _____

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Appendix A
LIST OF CONTACTS

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List of Contacts

Contact Name	Title/Position	Email Address	Telephone Number
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Final

Enhanced Use Lease Site 2
Environmental Condition of Property Report
Administration Work Campus

Naval Air Station Patuxent River
Patuxent River, Maryland

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Naval Facilities Engineering Command Washington

Public Works Department

NAS Patuxent River

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ABBREVIATIONS, ACRONYMS, AND SYMBOLS

ACHP	Advisory Council on Historic Preservation
ACM	Asbestos-containing material
AHERA	Asbestos Hazard Emergency Response Act
AICUZ	Air Installations Compatibility Use Zone
APZ	Accident potential zone
AQCR	Air quality control region
ARPA	Archeological Resource Protection Act
AST	Aboveground storage tank
ATSDR	Agency for Toxic Substances and Disease Registry
BMP	Best Management Practice
BRAC	Base Realignment and Closure
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CWA	Clean Water Act
CZM	Coastal Zone Management
DoD	Department of Defense
ECP	Environmental Condition of Property
EDR	Environmental Data Resources
EFH	Essential fish habitat
EISA	Energy Independence and Security Act
ENE	East-north-east
EO	Executive Order
ER	Environmental Restoration
ESA	Endangered Species Act of 1973
ESD	Environmental site design
EUL	Enhanced Use Lease
FFA	Federal Facility Agreement
FIDS	Forest Interior Dwelling Species
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FY	Fiscal Year
GIS	Geographic Information System
GMR	General management recommendations
IPMP	Integrated Pest Management Plan
IRI	Interim Remedial Investigation
LBP	Lead-based paint
LID	Low impact development
LQG	Large Quantity Generator
LUC	Land use control
MBTA	Migratory Bird Treaty Act
MDE	Maryland Department of the Environment
MEC	Munitions and explosives of concern
MEP	Maximum extent practicable
mph	Miles per hour
MRP	Munitions Response Program
msl	Mean sea level

NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act of 1990
NAS	Naval Air Station
NAVFAC	Naval Facilities Engineering Command
NAVRAMP	Naval Radon Assessment and Mitigation Program
NDW	Naval District Washington
NHPA	National Historic Preservation Act of 1966
NOAA	National Oceanographic & Atmospheric Administration
NOV	Notices of Violation
NRC	Naval Recreation Center
OPNAVINST	Office of the Chief of Naval Operations Instruction
PCBs	Polychlorinated biphenyls
PTC	Permit to Construct
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
RVs	Recreational vehicles
SDWA	Safe Drinking Water Act
SHPO	State Historic Preservation Officer
SVOC	Semi-volatile organic compounds
The Register	National Register of Historic Places
TSCA	Toxic Substances Control Act
USACE	United States Army Corps of Engineers
U.S.C.	United States Code
USFWS	United States Fish and Wildlife Service
USGS	United States Geologic Survey
UST	Underground storage tank
UXO	Unexploded ordnance

Executive Summary

Under its Enhanced Use Leasing (EUL) program, the Department of the Navy (hereinafter referred to as the “Navy”) is making available for lease non-excess real property for the development of new administrative space at the Naval Air Station (NAS) Patuxent River, Patuxent River, MD (hereinafter referred to as NAS Patuxent River or the “Station”). This Environmental Condition of Property (ECP) report was prepared for NAS Patuxent River EUL Site 2 and its adjacent properties. This report evaluates the current and former uses of the site; describes the environmental conditions of the land, facilities, and real property assets within the site; and summarizes any environmental restrictions, land use controls, and consultation requirements that may be necessary for development within EUL Site 2.

The ECP report findings for EUL Site 2 are based on a record search of readily available documents, a thorough review of the applicable and relevant documents, analysis of the NAS Patuxent River Geographic Information System (GIS), interviews with personnel knowledgeable about the site and its adjacent properties, and visual site investigations conducted on May 18, 2010 and June 1, 2010.

EUL Site 2 consists of approximately 4.95 acres (20,032 square meters) bounded by NAS Patuxent River on all sides. Since the Navy took ownership of the site in 1943, EUL Site 2 has remained largely undeveloped and currently contains two recreational baseball fields. Prior to 1943, EUL Site 2 was part of various plantations and used for agricultural purposes.

Areas of potential environmental concern identified during the ECP study for EUL Site 2 and its adjacent properties are listed below by subject area:

- Solid/Bio-hazardous Waste;
- Groundwater; and
- Wetlands.

In accordance with DoD policy regarding the classification of properties that may exhibit hazardous substance or petroleum contamination (please reference Deputy Under Secretary of Defense Goodman Memorandum dated 21 October 1996), EUL Site 2 has been classified as Category 7. This category applies to properties that have not been evaluated or require additional evaluation. While no releases, disposals, or mitigation of hazardous substances have been documented within EUL Site 2, there is reason to suspect contamination. Possible contamination concerns at EUL Site 2 include groundwater contamination from nearby ER sites. Further evaluation of these contamination concerns should be performed prior to execution of any property transfer involving EUL Site 2.

1. INTRODUCTION

1.1 Introduction and Background

The Navy is making available for lease non-excess real property at the NAS Patuxent River, Patuxent River, Maryland (hereinafter referred to as NAS Patuxent River or the “Station”) under its EUL program.

NAS Patuxent River is located in Saint Mary’s County in Southern Maryland at the confluence of the Chesapeake Bay and the Patuxent River. NAS Patuxent River covers approximately 6,400 acres (25.9 square kilometers) with an additional 850 acres (3.4 square kilometers) at the Webster Field Annex, located about 15 miles (24.1 kilometers) south of the Station. The Naval Recreation Center (NRC) Solomons located across the Patuxent River in Solomons, Maryland is also under the administrative control of NAS Patuxent River and Naval District Washington (NDW). NRC Solomons encompasses approximately 300 acres (1.2 square kilometers) and is the largest outdoor recreation facility in the Navy. Figure 1-1 presents the location of NAS Patuxent River, Webster Field Annex, and NRC Solomons in the Washington, D.C. metropolitan area.

The Station supports naval aviation operations by researching, developing, testing and evaluating aircraft components and related products. The facilities are also used by foreign governments, academic institutions and private industry for similar projects. The Naval Aviation Systems Team at Patuxent River includes the Naval Air Station, the Webster Field Annex and the Naval Air Warfare Center Aircraft Division. NAS Patuxent River also is home to approximately 50 other tenant activities.

In support of the development of new administrative space through an EUL action, Naval Facilities Engineering Command (NAVFAC) Washington has prepared this ECP report for NAS Patuxent River EUL Site 2 (hereafter referred to as “EUL Site 2”). The following report presents a summary of readily available information on the current and former uses, environmental conditions of, and concerns relative to, the land, facilities and real property assets at EUL Site 2.



Figure 1-1. Location of NAS Patuxent River in the Washington, D.C. Metropolitan Area

1.2 Organization of ECP Report

The ECP report is organized as follows:

- Section 2 (Survey Methodology) provides the methodology used to conduct the ECP study, including records review, site visit, and interviews.
- Section 3 (Past and Current Use) describes the current and former uses of the EUL site and the adjacent property.
- Section 4 (Environmental Setting) describes the environmental setting of the EUL site.
- Section 5 (Environmental Conditions of Subject Property) addresses the environmental conditions and related findings for the EUL site.
- Section 6 (Environmental Conditions of Adjacent Property) addresses the environmental conditions and related findings for property adjacent to the EUL site.
- Section 7 (Conclusions) presents the conclusions and recommendations of the ECP study.
- Section 8 (References) presents a list of references used in preparation of the ECP report.
- Section 9 (Certification) provides certification of the ECP report.

1.3 Purpose of ECP Report

The purpose of this ECP report is to establish the environmental condition of the real property to support the proposed EUL real estate action. This ECP study is primarily based on the review of readily available information, visual site inspections, and interviews with personnel familiar with the site history to determine any environmental risks associated with the proposed site.

Readily apparent operational and regulatory compliance deficiencies of environmental program areas such as underground storage tanks (USTs), air emissions, lead-based paint, asbestos, pesticides, polychlorinated biphenyls (PCBs), radon, medical waste, munitions or explosives of concern, lead based paint, stormwater, and natural resources are also provided in the ECP report. This ECP study does not re-investigate or otherwise review the adequacy of previously conducted investigations or remedial actions.

This ECP report will provide baseline environmental conditions for EUL Site 2 pursuant to the following goals:

- To document inquiry into environmental conditions to support real estate decisions;
- To protect the Navy from future liability;
- To determine risk of exposure to grantees/government employees; and
- To inform grantees of environmental conditions, restrictions, and land use controls (LUCs) associated with the real property (Department of the Navy, 2006).

1.4 Parcel Identification and Boundaries

EUL Site 2 consists of approximately 4.95 acres (20,032 square meters) on the eastern side of Cuddihy Road, halfway between Buse Road and Tate Road. The site contains two recreational baseball fields and a ground source heating pump system that supplies heat to buildings adjacent to EUL Site 2. Figure 1-2 presents the location of EUL Site 2 at NAS Patuxent River.



Figure 1-2. EUL Site 2 – NAS Patuxent River

1.5 Legal Description

Facility Name and Address: Naval Air Station Patuxent River, 22268 Cedar Point Road,
Patuxent River, MD 20670

Property Owner: United States Government

Date of Ownership: 1 April 1943

Current Occupant: US Navy

Zoning: Military

County, State: St. Mary's, Maryland

USGS Quadrangle: Solomons Island, MD. 38076-C4-TF-024

Latitude, Longitude: 38°17'02.53"N, 76°26'55.76"W

Parcel Number: Not Available

2. SURVEY METHODOLOGY

2.1 Approach and Rationale

This ECP report was prepared to document the environmental conditions of, and concerns relative to, the land, facilities, and real property assets of EUL Site 2. The environmental conditions of properties adjacent to EUL Site 2 were also considered in this report.

This report serves as a summary of readily available information based on an extensive record search of available documents, a thorough review of the applicable and relevant documents, analysis of the Station's GIS, two visual surveys conducted on May 18, 2010 and June 1, 2010, and on-site interviews with personnel knowledgeable about the history of EUL Site 2.

Extensive environmental investigations and reports and pertinent historical documents were reviewed in support of this ECP report. However, no sampling or analysis of any media was conducted during this survey. Information obtained is reflected within this report by reference. A complete list of references is provided as Section 8 (References).

The information obtained from the Navy and other environmental reports were considered to be accurate unless reasonable inquiries indicated otherwise. New information or changes in site use could require a review and possible modification of the findings and conclusions contained in this report.

2.2 Property Classification Guidelines

Based on analysis of the available data, the EUL Site was classified into one of seven Department of Defense (DoD) Environmental ECP categories as defined by the S.W. Goodman Memorandum dated October 21, 1996. The property classification categories are as follows:

- Category 1: Areas where no release or disposal of hazardous substances or petroleum products has occurred (including no migration of these substances from adjacent areas).
- Category 2: Areas where only release or disposal of petroleum products has occurred.
- Category 3: Areas where release, disposal, and/or migration of hazardous substances has occurred, but at concentrations that do not require a removal or remedial response.
- Category 4: Areas where release, disposal, and/or migration of hazardous substances has occurred, and all removal or remedial actions to protect human health and the environment have been taken.
- Category 5: Areas where release, disposal, and/or migration of hazardous substances has occurred, and removal or remedial actions are underway, but all required remedial actions have not yet been taken.
- Category 6: Areas where release, disposal, and/or migration of hazardous substances has occurred, but required actions have not yet been implemented.
- Category 7: Areas that are not evaluated or require additional evaluation.

2.3 **Related Reports**

Related environmental reports used in the preparation of this ECP report include, but are not limited to the following:

- Final Environmental Impact Statement for Increased Flight and Related Operations in the Patuxent River Complex, Patuxent River, Maryland;
- Environmental Assessment for the Privatization of Navy Housing at Naval Station;
- Draft Final Environmental Assessment for Disposition of Excess Buildings;
- Integrated Natural Resources Management Plan;
- Tank Management Plan, Volume 1;
- (Environmental Restoration) Site Management Plan, 2009 Update;
- Cold War Historic Context (1945-1989) and Architectural Survey and Evaluation;
- Draft Integrated Pest Management Plan, Naval Air Station Patuxent River, Maryland;
- Environmental Baseline Survey Update - Electric Utility Privatization: Naval Air Station Patuxent River Main Base, Lexington Park, Maryland; Webster Field Annex, St. Inigoes, Maryland; & Naval Recreation Center Solomons, Solomons Island;
- Historic Landscape Survey, Naval Air Station Patuxent River, Webster Field, and Solomons Complex;
- Naval Air Station Patuxent River Spill Records Database;
- Building Asbestos Reports; and
- Draft Part 70 Operating Permit No. 24-037-0017.

A complete list of references is provided in Section 8 (References).

2.4 **Real Estate Document Review**

A comprehensive property history of EUL Site 2 was created by reviewing Property Record Cards maintained by NAS Patuxent River for all former and current buildings and infrastructure located within the site. Historical land use records and personal interviews were used to understand property use and condition prior to the Navy taking ownership of the property. In addition, an environmental data and historical records package including a radius report, relevant historical aerial photographs, and topographic maps of the site was obtained from Environmental Data Resources (EDR) on May 20, 2010. Section 3 (Past and Current Use) presents the past and current use of EUL Site 2.

3. PAST AND CURRENT USE

3.1 Installation History

Prior to the early 20th century, NAS Patuxent River remained undeveloped and was used primarily for farming. Several plantations existed in the area, including Eltonhead Manor (1648), Susquehanna (1649), and Mattapany-Sewell (1663). A topographic map dated 1905, indicates that a small community called Pearson was located near the current northwest boundary of the Station, which consisted of a few residences, post office, a store, automobile dealer, and a church. The community was no longer represented on any historical maps more recently dated than 1943 (NAVFAC, Atlantic Division, 2009b; EDR, 2010a; EDR, 2010b).

NAS Patuxent River was commissioned on April 1, 1943, in an effort to centralize widely dispersed air testing facilities that had been established prior to World War II. This consolidation effort was swift, and the farming operations on the property were replaced by flight test operations within a year after the 1943 ground breaking for construction. The U.S. Naval Test Pilot School was established in 1958. In 1975, the Naval Air Test Center began to assume its role as the Naval Air Systems Command's principal site for development testing. Test facilities were upgraded in the late 1970s, with some of the largest construction appropriations in the history of the base (NAVFAC, Atlantic Division, 2009b; EDR, 2010a; EDR, 2010b).

Within the last decade, several new facilities were established at NAS Patuxent River due to Base Realignment and Closure (BRAC) actions. More than \$155 million has been budgeted for new engineering complexes and renovation of existing facilities. These include the Aircraft Technologies Lab; North Engineering Center; South Engineering Center; Frank Knox School improvement; Integrated Project Team Building; and the Propulsion System Evaluation Facility. The Aircraft Technologies Lab and the North and South Engineering Centers combined are occupied by 1,300 people recently relocated to NAS Patuxent River (Department of the Navy, 2002).

NAS Patuxent River is largely developed with aircraft runways, taxiways, hangars, and supporting structures and equipment. Residential communities, commercial properties, schools, churches, and recreational areas are also present. The Station is improved with water, wastewater, electric, and natural gas service.

3.2 Subject Property

EUL Site 2 remained undeveloped and used as farmland until NAS Patuxent was established in 1943. After NAS Patuxent was established, EUL Site 2 remained undeveloped. EUL Site 2 was cleared at some point before 1960 and developed as recreational baseball fields in 1963 (EDR, 2010a; EDR, 2010b; Baker, 2010a; Baker, 2010b).

The terrain of EUL Site 2 is generally flat, with a slight downward slope eastward across the site. The highest elevation on the site is approximately 100 feet (30.5 meters) above mean sea level (msl) and the lowest elevation is approximately 90 feet (27 meters) above msl.

A ground source heating pump system that supplies heat to Buildings 446, 447, 448, 449, 450, and 451, constructed in 2002, runs from the northeast corner of the site to the southeast corner

(Lowther, 2010; Naval Facilities Engineering Command, Atlantic Division. 2009b). As a result of the ground source heating pump system, development on this site may be constrained.

3.3 Adjacent Property

According to historical topographic maps and property record cards, the property adjacent to EUL Site 2 remained undeveloped and used as farmland until 1943. Development to the south of EUL Site 2 in support of Navy personnel began immediately after commission of the Station. Several facilities were constructed adjacent to EUL Site 2. Table 3-1 summarizes the existing adjacent area facilities and functions. Property to the east, west, and north of the site remains undeveloped. Figure 5-1 illustrates the locations of EUL Site 2 adjacent area facilities.

Table 3-1. Adjacent Area Facilities

Facility Number/Name	Built Date	Function(s)
Building 446	1944	Barracks, Administration
Building 447	1944	Barracks, Administration
Building 448	1944	Barracks, Administration
Building 449	1944	Barracks, Administration
Building 450	1944	Barracks, Administration
Building 451	1944	Barracks, Administration

Property adjacent to the site provides a range of outdoor recreation activities including hunting, hiking, and bird-watching. The Outdoor Recreation Program at NAS Patuxent River relieves pressure from recreational areas in the community and generates a positive impact on the Station's staff productivity and retention (Department of the Navy, 2002).

4. ENVIRONMENTAL SETTING

4.1 Location

NAS Patuxent River is located in the southern portion of St. Mary's County, Maryland, at latitude 38°17'N and longitude 76°25'W, approximately 54 miles (87 kilometers) southeast of Washington, DC. St. Mary's County is the southernmost part of Maryland's western shore and consists of a peninsula surrounded by tidal water on all but the northwestern boundary. NAS Patuxent River occupies a small peninsula and broad headland (known as Cedar Point) at the confluence of the Patuxent River and Chesapeake Bay in the eastern portion of the county. The Station, which comprises approximately 6,400 acres (25.9 square kilometers), is bounded by the Patuxent River to the north, the Chesapeake Bay to the east, and the town of Lexington Park, Maryland to the south and west (NAVFAC, Atlantic Division, 2009b). Figure 1-1 presents the location of NAS Patuxent River, Webster Field Annex and NRC Solomons in the Washington, D.C. metropolitan area.

4.2 Climatology

NAS Patuxent River lies within the Humid Temperate, Semi-Continental Climate Zone. The Station's proximity to the Patuxent and Potomac Rivers, the Chesapeake Bay, and their tributaries affects the local climate. The atmospheric flow in this region is from west to east across North America, and there are four distinct seasons. Prevailing winds are from the northwest, except during the warm months, when they are more southerly. Average wind speeds are approximately nine miles per hour (mph), although winds may reach in excess of 60 mph on rare occasions. Windiest periods in this region include late winter and early spring. Additionally, other extreme weather events, such as tornadoes, hurricanes, and blizzards occur during other seasons, but are very rare.

Normal temperatures for the region range from an average low of 29°F and an average high of 44°F in January (the coldest month) to an average low of 70°F and an average high of 86°F in July (the warmest month).

The annual mean precipitation for the area is approximately 41.7 inches (1.1 meters), with approximately 15 inches (0.381 meters) of this amount occurring as snowfall. Precipitation occurs evenly throughout the year, with slight increases occurring in July and August. In summer, precipitation occurs mostly through thunderstorms, which occur on an average of 33 days per year. Drought may occur in any season but is most likely to occur in the summer (Department of the Navy, 2002).

4.3 Geology

The geological deposits underlying NAS Patuxent River are thick, unconsolidated beds of sand, silt, clay, and gravel resulting from marine deposits. Because these formations are entirely sedimentary in nature, they are extremely vulnerable to erosion. NAS Patuxent River is primarily underlain with a Matapeake-Mattapex-Sassafras soil association with smaller areas of a Sassafras- Beltsville association and Othello-Mattapex association (Department of the Navy, 2002).

The dominant surface sediments at the Station were deposited during the Quaternary Period, primarily Sunderland, Wicomico, and Talbot deposits. Layers that outcrop in St. Mary's County were deposited during the Tertiary and Quaternary Periods. The Station is underlain by a Cretaceous layer, which consists of Arundel, Patapsco, Raritan, Magothy, Matawan, and Monmouth formations (Department of the Navy, 2002).

4.4 Hydrogeology

There are three principal groundwater aquifers beneath NAS Patuxent River: Piney Point-Nanjemoy Aquifer, Aquia Aquifer, and Patapsco Aquifer. The Piney Point- Nanjemoy Aquifer is a major source of potable water for residential users in southern Maryland. The Aquia Aquifer is the principal source of potable and industrial water for both the Station and local public water suppliers. The Station also has two water supply wells tapping into the Patapsco Aquifer.

The elevation of the water table beneath the Station ranges from sea level along the coastal areas to approximately 80 feet (24 meters) below msl in the southwestern portion of the facility (Department of the Navy, 2009).

Several major drainage areas collect precipitation runoff from the Station. This runoff goes directly to one of four hydraulic sinks: (1) Patuxent River, (2) Chesapeake Bay, (3) estuary areas, or (4) freshwater creeks and ponds and associated wetland areas. All of the runoff from the Station eventually flows to the Chesapeake Bay.

There are six constructed ponds located on the Station. Except for Richneck Pond, all are located in the southern and western portions of the Station and serve to control runoff and provide fish and wildlife habitats, recreation, and a source of water for firefighting. In addition to these water bodies, there are low-lying areas throughout the Station that tend to act as temporary stormwater storage areas, helping to control runoff rates and downstream flooding (Department of the Navy, 2002).

4.5 Topography

The terrain at NAS Patuxent River rises gradually from the Chesapeake Bay shoreline westward. A majority of the Station (70 percent) is level and fairly well-drained. Some low areas are somewhat-poorly-drained to poorly-drained, and become intermittently flooded and/or saturated. The southwestern portion of the Station is hilly, with the highest elevations on the Station.

The United States Geologic Survey (USGS) Solomons Island, Maryland quadrangle indicates a general topographic gradient of east-north-east (ENE) for the Station. Elevation averages 35 feet (10 meters) above msl at the center of the Station, with higher elevations on the western portion of the property and lower elevations on the north and east boundaries with the Patuxent River and the Chesapeake Bay, respectively (EDR, 2010a; EDR, 2010b).

5. ENVIRONMENTAL CONDITIONS OF SUBJECT PROPERTY

This section discusses various aspects of the affected environment within EUL Site 2 and provides regulatory background, discussion of resources or features present, and an overview of restrictions, land use controls, and consultation requirements that may be necessary for development within this site.

A site map (Figure 5-1) was developed using GIS data retrieved from the Navy. The map displays the pertinent environmental constraints identified in the site. The map is not comprehensive and is intended only to support the information provided in this report.

5.1 Environmental Restoration

The Environmental Restoration (ER) program at NAS Patuxent River was established to comply with the Federal Facility Agreement (FFA) signed on December 2000 between the Navy and the EPA Region III. The ER program identifies, investigates, and environmentally restores sites containing hazardous substances to reduce the risk to human health and the environment. The ER program also incorporates the Munitions Response Program (MRP), which manages the environmental, health, and safety issues presented by unexploded ordnance (UXO), discards munitions, munitions constituents, and other munitions and explosives of concern (MEC) found on-base (Department of the Navy, 2009b).

Due to the historical use of NAS Patuxent River and procedures once used to treat and dispose of waste and munitions, the installation as a whole is at risk for environmental contamination. A variety of facility-wide, multi-site and single site environmental investigations have been conducted at NAS Patuxent River to identify and assess the presence of contaminants in areas of potential concern. The Station's Site Management Plan identifies 56 specific environmental restoration sites at NAS Patuxent River (Department of the Navy, 2009). Numerous additional investigations are underway or are anticipated to begin during Fiscal Year (FY) 2010 and FY 2011.

EUL Site 2

Upon review of the Site Management Plan, it has been determined that no documented ER sites are located within EUL Site 2 and no additional investigations are underway or anticipated within EUL Site 2 (Department of the Navy, 2009). Therefore, no environmental conditions, restrictions, or land use controls associated with the ER program would apply to EUL Site 2. ER Sites are located adjacent to EUL Site 2. Refer to Section 6 (Environmental Condition of Adjacent Properties) for further information.

5.2 Munitions or Explosives of Concern

EUL Site 2

There are no documented MRP sites within EUL Site 2, and no explosives operations (e.g., munitions storage or handling) are known to have taken place within EUL Site 2. However, due to incomplete records and historical disposal practices at NAS Patuxent River, there is some potential to find MEC, including buried UXO, during earthwork at the Station (Simpson, 2010; NAVFACWASH, 2010). If MEC is discovered, earth disturbance in the vicinity of the discovery

must cease and the location and description of the item(s) must be reported immediately to the Navy Project Manager.

5.3 Tanks/Petroleum Contamination

Storage tanks are classified based on their location and referred to as aboveground storage tanks (AST) and underground storage tanks (UST). Through the Resource Conservation and Recovery Act's (RCRA) Hazardous and Solid Waste Amendments, EPA established a federal program to regulate USTs containing petroleum and hazardous chemicals to limit corrosion and structural defects and thus minimize future tank leaks. In addition, the amendments directed EPA to set operating requirements and technical standards for tank design and installation, leak detection, spill and overfill control, corrective action, and tank closure. The UST program is implemented in Maryland by the Maryland Department of the Environment (MDE) (USEPA, 2010b).

Storage tanks at NAS Patuxent River are used to store a variety of petroleum products to support mission-related activities. NAS Patuxent River has an active Tank Management Plan that lists both ASTs and USTs currently in use, regulatory requirements for each storage tank, and ensures proper inspection and maintenance is performed (Naval Air Station Patuxent River, Maryland, 2008). Spills and resulting soil contamination from ASTs, USTs, or other sources of petroleum are documented and stored in a spill database specific to NAS Patuxent River and separate to the Tank Management Plan. The spill database contains a complete record of spills dating back to 1994.

EUL Site 2

No petroleum tanks are known to be present within EUL Site 2 (Naval Air Station Patuxent River, Maryland, 2008; NAVFACWASH, 2010). Additionally, there are no historical records of tanks formerly within this site. However, historical tank records may be incomplete, and there is some potential that undocumented tanks could be encountered during earthwork at the Station. Accordingly, there is also some potential for subsurface or groundwater contamination as a result of spills or leaks associated with any such undocumented tanks.

5.4 Hazardous Substances/Hazardous Waste

Hazardous substances and hazardous waste are defined by EPA as a material that exhibits a characteristic of ignitability, corrosivity, reactivity, or toxicity, or is specifically listed as a hazardous material. Several federal environmental policies list and require special handling procedures for certain hazardous substances, including the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), Toxic Substances Control Act (TSCA), and RCRA. CERCLA, better known as the Superfund, ensures liability and clean-up of abandoned hazardous material by responsible parties provides (USEPA, 2010d). EPA controls hazardous substances through the TSCA, which addresses chemical substances and mixtures whose manufacture, processing, distribution, use, or disposal may present an unreasonable risk of injury to health or the environment (Department of the Navy, 2009b). RCRA is broad in its regulatory management of solid and hazardous waste, including cleanup, through corrective action, of releases of hazardous waste at RCRA-regulated facilities, such as NAS Patuxent River. RCRA requires cradle-to-grave management of hazardous waste through a recordkeeping system that tracks shipments of hazardous waste. Hazardous waste treatment, storage, and disposal

facilities are regulated through the issuance of operating permits. EPA has delegated the enforcement of RCRA in Maryland to MDE.

On-site accumulation times for hazardous waste at NAS Patuxent River are restricted to the applicable time frames referenced in 40 CFR 262.34 and other applicable Maryland laws or regulations. Non-explosive hazardous waste is transported to an approved, off-site hazardous waste treatment, storage, or disposal facility in accordance with Department of Transportation regulations. The hauling and disposal of demolition debris, including hazardous wastes containing lead, asbestos, and air conditioner refrigerant, is performed in compliance with local, state, and federal codes and requirements.

NAS Patuxent River is listed in the EDR as a Large Quantity Generator (LQG) of hazardous wastes (EDR, 2010c). There are 50 buildings designated as satellite accumulation areas for hazardous waste. Pursuant to 40 CFR 262.34(c)(1), these points may accumulate as much as 55 gallons (208 liters) of hazardous waste or one quart of acutely hazardous waste. Once they become full, containers at these satellite accumulation points must be transferred to one of the 38 active less-than-90-day central accumulation sites at NAS Patuxent River.

EUL Site 2

There are no records of any hazardous waste storage or contamination at EUL Site 2 (Olson, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with hazardous waste would apply to EUL Site 2.

5.5 Solid/Bio-hazardous Waste

Solid waste is any garbage, refuse, sludge, or other discarded material including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, agricultural, or community activities (Department of the Navy, 2009b). Bio-hazardous waste, or medical waste, is defined as all waste generated at health care facilities, such as hospitals, clinics, physician's offices, dental practices, blood banks, and veterinary hospitals/clinics, as well as medical research facilities and laboratories. Solid and bio-hazardous waste generators, transporters, destruction facilities, and disposal facilities are subject to RCRA, and applicable state and local regulations and regulatory requirements that prohibit disposing of solid waste in open dumps and require bio-hazardous waste be treated and disposed of safely (USEPA, 2010c).

EUL Site 2

EUL Site 2 has not been associated with the generation, handling, or storage of bio-hazardous or solid waste (Olson, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with solid and bio-hazardous waste would apply to EUL Site 2.

5.6 Polychlorinated Biphenyls

The TSCA authorizes EPA to secure information on all new and existing chemical substances and to control any of these substances that could cause an unreasonable risk to public health or the environment. PCBs are regulated under Title I, Control of Toxic Substances, which includes provisions for testing chemical substances and mixtures, manufacturing and processing notices,

regulating hazardous chemicals substances and mixtures, managing imminent hazards, and reporting and retaining information.

EUL Site 2

PCBs were originally used at NAS Patuxent River in transformers located throughout the installation. However, all transformers containing PCBs were retrofitted or replaced in the 1970s and 1980s. No PCB program or reports have been developed due to the overall low risk of PCB equipment and exposure (Ichniowski, 2010). As a result, no environmental conditions, restrictions, or land use controls associated with PCBs would apply to EUL Site 2.

5.7 Asbestos-Containing Material

Asbestos abatement is regulated under the TSCA Title II, Asbestos Hazard Emergency Response, which was added by the Asbestos Hazard Emergency Response Act (AHERA). AHERA provides for the promulgation of federal regulations requiring inspection for asbestos and appropriate response actions in schools and mandates periodic reinspection. In addition, it requires EPA Administrators to determine "the extent of the danger to human health posed by asbestos in public and commercial buildings and the means to respond to any such danger" (Department of the Navy, 2009c).

Several of the buildings at NAS Patuxent River were built prior to health concerns related to asbestos-containing material (ACM) arose and regulations were implemented. An asbestos survey was completed for buildings suspected of having ACM during the early 1990s. A report was completed for each building and mitigation and clean-up efforts were completed thereafter (Apex Environmental, Inc., 1993). However, due to the likelihood that ACM remains present in many buildings, it should be assumed that all buildings subject to renovation or demolition contain ACM unless a report demonstrates otherwise.

EUL Site 2

There are no buildings or other types of infrastructure at EUL Site 2 that would have the potential for asbestos-containing materials, and none are known to have previously existed at EUL Site 2 (EDR, 2010a; EDR, 2010b; NAVFACWASH, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with ACM would apply to EUL Site 2.

5.8 Lead-based Paint

The use of toxic lead-based paint (LBP) was banned in 1977 by the Consumer Product Safety Commission. The MDE has established the Lead Poisoning Prevent Program to enhance citizen safety and prevent exposure to LBP (MDE, 2010b).

Before it was removed from the market, LBP was commonly used on the exterior and interior walls during the renovation or construction of buildings at NAS Patuxent River. Many of these buildings remain today. No comprehensive survey of LBP containing-buildings has been completed for NAS Patuxent River. Due to the age of many buildings at NAS Patuxent River and lack of LBP mitigation or clean-up efforts, it is suspected that buildings built before 1978 contain LBP unless documentation demonstrates otherwise.

EUL Site 2

There are no buildings or other types of infrastructure at EUL Site 2 that would have the potential for lead-based paint, and none are known to have previously existed at EUL Site 2 (EDR, 2010a; EDR, 2010b; NAVFACWASH, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with LBP would apply to EUL Site 2.

5.9 Pesticides and Herbicides

NAS Patuxent maintains an Integrated Pest Management Plan (IPMP), which is a long-range planning and operational tool that establishes the strategy and methods for conducting a safe, effective, and environmentally sound integrated pest management program. The IPMP covers all pest management and pesticide-related activities conducted within all areas of the installation. The IPMP was developed in accordance with Navy guidance (e.g., OPNAVINST 6250.4) and applicable laws and regulations, such as the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). FIFRA provides the basis for regulation, sale, distribution and use of pesticides in the US, and addresses applicator certification requirements, record keeping, and penalties for pesticide misuse (NAVFAC, Atlantic Division, 2009a).

EUL Site 2

Maintenance of the baseball fields at EUL Site 2 includes minimal broadleaf weed control. There are documented invasive species present at EUL Site 2; however, no pesticide or herbicide treatment has occurred. (Smith, 2010b; Naval Facilities Engineering Command, Atlantic Division, 2009a; NAVFACWASH, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with pesticide and herbicide contamination would apply to EUL Site 2.

5.10 Radon/Radiological Material

Indoor radon concentrations are regulated under TSCA Title III (Indoor Radon Abatement). In response, the Navy established the Radon Assessment and Mitigation Program (NAVRAMP) which identifies, assesses, and mitigates the infiltration of radon into existing Navy-occupied buildings and incorporates preventive practices in the design and construction of new buildings.

EUL Site 2

St. Mary's County is classified as Zone 2 by the EPA, indicating a moderate potential for elevated indoor radon levels. However, a base-wide survey of radon levels was completed in the 1970s and 1980s. The survey found no radon levels of concern; therefore, no radon program is established at the Station (Ichniowski, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with elevated radon levels would apply to EUL Site 2.

5.11 Water Quality

5.11.1 *Surface Water*

Important aquatic resources at NAS Patuxent include the Patuxent River, Chesapeake Bay, Pine Hill Run, Goose Creek, Pearson Creek, Harper's Creek, and six freshwater ponds. These open

water areas range from brackish to freshwater systems and support a variety of fish and wildlife resources. NAS Patuxent is situated on a peninsula at the mouth of the Patuxent River. Of NAS Patuxent's approximately 6,400 acres (25.9 square kilometers), 1,041 acres (4.2 square kilometers) are open water or wetland (discussed in Section 5.12.2 (Wetlands)). This acreage is comprised of six freshwater ponds; several perennial and intermittent streams; four estuaries; two seaplane basins; a partially enclosed sea-wall; and numerous saline, freshwater tidal, and nontidal marshes, in addition to forested and scrub/shrub wetlands (Department of the Navy, 2002).

NAS Patuxent shares boundaries with two significant resources – the Chesapeake Bay and the Patuxent River. The Chesapeake Bay, with its associated salt marshes, is the largest estuary in North America and one of the most productive in the world. Its bounty of finfish, shellfish, crabs, and waterfowl is world-renowned. The Patuxent River is one of the rivers initially designated as part of the Maryland State Wild and Scenic Rivers Program. In addition, while no Maryland river is on the National Wild and Scenic Rivers System, Patuxent River is listed in the Nationwide Rivers Inventory as having the significant resource values required for potential inclusion (Department of the Navy, 2002).

NAS Patuxent contains many miles of intermittent and perennial headwater streams. Streams usually occupy well-defined channels where topographic gradients are steeper or where they have been channeled. In the level, low-lying areas, streams often occupy split or braided channels. Those streams occurring in densely forested areas have not all been detected by photo interpretation or mapped.

EUL Site 2

There are no surface waters at EUL Site 2 (Department of the Navy, 2002). Therefore, no environmental conditions, restrictions, or land use controls associated with the presence of surface water would apply to EUL Site 2.

5.11.2 Stormwater

Stormwater is generated when precipitation runs off from land and impervious areas such as paved streets, parking lots, and building rooftops. Stormwater runoff can collect pollutants such as oil and grease, chemicals, nutrients, metals, and bacteria as it travels across land, and it also causes soil erosion when traveling at velocities sufficient to carry sediment particles. The Clean Water Act (CWA) regulates both direct and indirect discharges of "priority" pollutants that are often conveyed by stormwater, such as total suspended solids, fecal coliform, and oil and grease. Stormwater is typically managed using structural or nonstructural Best Management Practices (BMPs). Structural BMPs include control systems such as infiltration devices, ponds, filters and constructed wetlands, while nonstructural BMPs include low impact development (LID) practices and management measures (USEPA, 2004).

EUL Site 2

Stormwater currently flows eastward across vegetated areas. Any new development within EUL Site 2 must be designed and executed in accordance with applicable requirements of the following standards and regulations to ensure that stormwater impacts are minimized. Pursuant to Section 438 of the Energy Independence and Security Act (EISA) of 2007, development with a footprint greater than 5,000 SF (465 square meters) must maintain or restore to the maximum extent practicable pre-development hydrology with respect to temperature, rate, volume, and duration of flow (U.S. Congress, 2007). Pursuant to the Navy's LID policy, the Navy sets a goal of no net increase in stormwater volume and sediment or nutrient loading from construction projects (Department of the Navy, 2007). Pursuant to Maryland's Stormwater Management Act of 2007, development with a footprint greater than 5,000 SF must implement environmental site design (ESD), to the maximum extent practicable (MEP) in accordance with Section 4.0 Stormwater Management Criteria of the 2000 Maryland Stormwater Design Manual. Additionally, re-development with a footprint greater than 5,000 SF must implement ESD to the MEP to provide water quality treatment for a minimum of 50 percent of the existing impervious area within the limits of disturbance. For additional information, please reference the 2000 Maryland Stormwater Design Manual (MDE, 2009; MDE, 2010).

5.11.3 Groundwater

The Safe Drinking Water Act (SDWA) was originally passed by Congress in 1974 to protect public health by regulating the nation's public drinking water supply. The law was amended in 1986 and 1996 and requires the protection of drinking water and its sources – rivers, lakes, reservoirs, springs, and groundwater wells. SDWA authorizes the US EPA to set national health-based standards for drinking water to protect against both naturally-occurring and man-made contaminants that may be found in drinking water (USEPA, 2010f).

The drinking water at NAS Patuxent is pumped from the Piney Point/Nanjemoy, Aquia, and Patapso aquifers – groundwater sources below St. Mary's County. The Compliance Division of the NAVFACWASH Public Works Environmental Division at NAS Patuxent River is responsible for both groundwater monitoring and protection of groundwater well locations on the Station. However, to date, no formal Source Water or Wellhead Protection Plan has been written (NAVFAC, Atlantic Division, 2009b).

EUL Site 2

As discussed in Section 3.2 (Subject Property), there are non-potable geothermal wells present that are associated with the closed-loop ground source heating pump at EUL Site 2. There are no potable groundwater wells present within EUL Site 2; therefore, there is no site specific information on the groundwater. However, ER Site #2 (Disposal Site at Pond #1) and an unconfirmed Solid Waste Dump Area are located approximately 600 and 200 feet east of EUL Site 2, respectively. These sites may present a concern to the groundwater at EUL Site 2. Refer to Section 6 (Environmental Condition of Adjacent Properties) for further information.

5.12 Natural Resources

5.12.1 Forests

Forested areas account for approximately 42 percent (2,817 acres, 11.6 square kilometers) of the land cover at NAS Patuxent. The forests on NAS Patuxent are presented in four broad classifications of forest types: bottomland pine; upland pine; bottomland hardwood; and upland hardwood (Department of the Navy, 2002).

Pine forests are defined as areas dominated mainly by trees of the genus *Pinus*, consisting of needle-leaved evergreen species. Upland pine forest accounts for 7 percent (207 acres, 837,700 square meters) of the forests encountered on NAS Patuxent. Bottomland pine forest consists of needle-leaved evergreen species in areas where the water table is at a depth sufficient to influence the development of oxygen-reducing conditions and create hydric soil and hydrophytic vegetation characteristics. This forest type accounts for 1 percent (24 acres, 97,100 square meters) of the forests encountered on NAS Patuxent. Upland hardwood forests consist of hardwood tree species in areas where the water table is below a depth where hydric characteristics develop in the soils and plant community. This forest type accounts for 21 percent (581 acres, 2,351,000 square meters) of the forests encountered on NAS Patuxent. Pine species also occur in combination with hardwood tree species to form mixed forest types. This mixed forest type accounts for 21% (580 acres, 2,350,200 square meters) of the forests encountered on NAS Patuxent.

NAS Patuxent is an important migratory bird area as a result of extensive forest stands throughout the base. The Migratory Bird Treaty Act (MBTA) protects migratory birds and their habitats, and establishes a permitting process for legal taking. Except as permitted, actions of the Navy may not result in pursuit, hunting, taking, capture, killing, possession, or transportation of any migratory bird, bird part, nest, or egg thereof.

The potential for commercial forest products such as poletimber, sawtimber, pulpwood, and firewood is an added economic benefit afforded by the forested areas on NAS Patuxent. All merchantable timber that is cut on NAS Patuxent is considered Navy Real Property and must be disposed of properly, with appropriate disbursement to the Navy Forestry Account.

The most important management prescription proposed for wildlife habitat concerns is the designation of a large, contiguous forest block on the south side of the Station. This forested area will benefit many rare, threatened, and endangered species that are known to and/or have the potential to inhabit the region. The most important indicator of the success of the forest management prescription for the maintenance and restoration of critical ecosystem functions is the monitoring of Forest Interior Dwelling Species (FIDS). These species are considered "area sensitive" species and require some critical mass of contiguous forest type in order to survive. The monitoring of populations of these species is crucial in determining the success of the forest block (Department of the Navy, 2002).

EUL Site 2

The fragmented forests along the perimeter of EUL Site 2 can be classified as upland hardwood forests (Navy Enhanced Use Lease Patuxent River, 2010; NAVFACWASH, 2010; Department of the Navy, 2002). The forest is fragmented and non-contiguous, and does not support FIDS

(Rambo, 2010). Any tree clearing within EUL Site 2 is recommended to take place in the winter to avoid disrupting the nesting of migratory birds. Any merchantable timber associated with clearing for development of EUL Site 2 must be disposed of properly, and with appropriate disbursement to the Navy Forestry Account (Department of the Navy, 2002).

5.12.2 Wetlands

The United States Army Corps of Engineers (USACE) and EPA define jurisdictional wetlands as areas that are inundated or saturated by surface water or groundwater frequently and long enough to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands provide important plant and wildlife habitat and serve as buffers and filters essential for maintaining the water quality of nearby surface waters.

The wetlands at NAS Patuxent River are protected by Section 404 of the CWA, Executive Order (EO) 11990 (Wetland Protection), and applicable state regulations, including the Maryland Nontidal Wetlands Protection Act, Maryland Tidal Wetlands Act, and the Waterway and 100-Year Floodplain Construction Regulations. Section 404 of the CWA prohibits the discharge of dredged or fill material into wetlands or other waters of the United States if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's water would be significantly degraded. Regulated activities are controlled by a permit review process administered by the USACE (USEPA, 2010e).

EO 11990 was implemented in 1977 to protect wetlands and their associated ecosystem services. This EO directs each federal agency to avoid undertaking or providing assistance for new construction located in wetlands unless the head of the agency finds that 1) there is no practicable alternative to such construction, and 2) all practicable measures will be taken to minimize impacts to the wetlands. In addition, the Navy has a “no net loss” policy requiring the replacement of any wetlands destroyed or eliminated through a project.

To protect jurisdictional wetlands, MDE requires maintaining an area surrounding a wetland called a buffer. Activities that may disturb or occur within a non-tidal or tidal wetland or surrounding buffer are regulated under COMAR 26.23 and COMAR 26.24, respectively. According to COMAR 26.23.01, a buffer is a regulated area, 25 feet in width, surrounding a nontidal wetland, and measured from the outer edge of the non-tidal wetland. MDE requires the action proponent to obtain a Non-tidal Wetlands and Waterways Permit for any activity that alters a non-tidal wetland or its 25-foot buffer.

The Chesapeake Bay Critical Area Commission requires maintaining a 100-foot buffer around tidal wetlands and streams to improve runoff water quality and reduce the amounts of toxic substances entering tidal waters (Critical Area Commission, 2008). The Navy maintains these areas at NAS Patuxent by avoiding removal of trees within 100-foot riparian buffers wherever possible (U.S. Department of the Navy, 2008).

Wetland delineations for NAS Patuxent were performed with data collection between June and October 1995. This technique produced a wetland delineation that was conservative and probably included some upland areas. These delineations were not flagged or surveyed in the field; therefore they should be considered rough estimates (Rambo, 2010; Smith, 2010a; Department of the Navy, 2002).

EUL Site 2

Based on site visits, discussions with NAS Patuxent Environmental Division personnel, and the NAS Patuxent River GIS, there are no documented wetlands present within EUL Site 2. Therefore, no environmental conditions, restrictions, or land use controls associated with the presence of wetlands would apply to EUL Site 2.

5.12.3 Floodplains

A floodplain is the area along or adjacent to a stream or a body of water that is capable of storing or conveying floodwaters. Floodplains perform important natural functions, including moderating peak flows, maintaining water quality, recharging groundwater, and preventing erosion. In addition, floodplains provide wildlife habitat, recreational opportunities, and aesthetic benefits. To protect floodplains and minimize future flood damage, EO 11988 Floodplain Management restricts development within the 100-year floodplain. A 100-year floodplain is defined as an area that is subject to a one-percent or greater chance of flooding in any given year. Under EO 11988, all federal agencies must 1) determine if any of their actions would occur within a floodplain, 2) evaluate the potential effects of these actions, and 3) analyze alternatives to these actions.

EUL Site 2

There are no floodplains within EUL Site 2 (Department of the Navy, 2002). Therefore, no environmental conditions, restrictions, or land use controls associated with the presence of floodplains would apply to EUL Site 2.

5.12.4 Coastal Zone

Maryland's Coastal Zone Management (CZM) Program was created in response to the passage of the Federal Coastal Zone Management Act of 1972. The goal of this program is to "preserve, protect, develop and, where possible, restore our coastal resources." Maryland's CZM Program was created in 1978 and is a network of state laws and policies designed to protect coastal and marine resources. Maryland's coastal zone includes 3,190 miles of coast in 16 counties and Baltimore City (MDNR, 2002). This area includes the Chesapeake Bay, coastal bays, and the Atlantic Ocean, as well as the towns, cities, and counties that have jurisdiction over the coastline. Maryland's coastal zone encompasses two thirds of the state's land area and is home to greater than 65 percent of the state's residents (MDNR, 2002). Federally controlled lands are excluded from the coastal zone per 16 U.S.C. 1453, Section 304, Paragraph (1). However, the Coastal Zone Management Act requires all federal activities that could affect land, water, or natural resources on the coastal zone to be consistent to the maximum extent practicable with the enforceable policies of the approved state CZM program. That is, even if the action occurs on federal land (excluded from the coastal zone), the action must be consistent to the maximum extent practicable with the state CZM program if it affects coastal resources.

The Chesapeake Bay Critical Area Law regulates all lands under the tidal influence of the Chesapeake Bay and its tributaries up to the head of the tide, as well as wetlands connected to these waters. It also regulates land within a 1,000-foot boundary inland from that line. The Critical Area Law is included within Maryland's Coastal Zone Management Program. Any

disturbance within the Critical Area would require consultation with the Chesapeake Bay Critical Area Commission.

EUL Site 2

EUL Site 2 development will not impact the Maryland Coastal Zone or Critical Area. Therefore, no environmental conditions, restrictions, or land use controls associated with the Maryland Coastal Zone or Critical Area would apply to EUL Site 2.

5.12.5 Essential Fish Habitat

Fish and invertebrate species and their habitat are regulated and protected by several federal laws. The most notable of the federal laws is the Fishery Conservation and Management Act of 1976, which was reauthorized and amended by the Sustainable Fisheries Act in 1996 and is now popularly designated as the Magnuson-Stevens Fishery Conservation and Management Act. These acts mandated habitat conservation for federally managed fish species via the conservation tool known as essential fish habitat (EFH). The EFH mandate required that regional fishery management councils, through Federal Fishery Management Plans, describe and identify EFH for each federally managed species, minimize to the extent practicable any adverse effect on such habitat caused by fishing, and identify other actions to encourage the conservation and enhancement of such habitats. EFH is defined by Congress for managed species as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (16 U.S.C. 1802[10]). Within the vicinity of the NAS Patuxent River (upper Chesapeake Bay), EFH has been designated for 11 of the 23 EFH fish species found in the Chesapeake Bay.

EUL Site 2

There is no essential fish habitat within EUL Site 2 (Department of the Navy, 2002). Therefore, no environmental conditions, restrictions, or land use controls associated with the presence of essential fish habitat would apply to EUL Site 2.

5.12.6 Threatened or Endangered Species

The Endangered Species Act of 1973 (ESA) protects federally-listed threatened, endangered, and candidate species of fish, wildlife, and plants and their designated critical habitats. Under this law, no Federal action is allowed to jeopardize the continued existence of an endangered or threatened species. ESA also requires consultation with the United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (now called National Oceanographic & Atmospheric Administration (NOAA) Fisheries Service) and the preparation of a biological assessment when such species are present in an area that is affected by government activities (USFWS, 2010).

EUL Site 2

Based on previous surveys and discussions with NAS Patuxent Environmental Division personnel, there are no federally- or state-listed threatened or endangered species at EUL Site 2 (Smith, 2010a; Smith, 2010b; Department of the Navy, 2002). Therefore, no environmental conditions, restrictions, or land use controls associated with the presence of threatened or endangered species would apply to EUL Site 2.

5.13 Cultural Resources

The National Historic Preservation Act of 1966 (NHPA), enacted under 16 United States Code (U.S.C.) 470, provides for the National Register of Historic Places (the Register), defines National Historic Landmarks, provides for the designation of a State Historic Preservation Officer (SHPO), and establishes the Advisory Council on Historic Preservation (ACHP). The Register lists sites, districts, buildings, structures, and objects of significance in American history, architecture, archeology, engineering, and culture. These resources may be of local, State, or national significance. Section 106 of the NHPA requires federal agencies to consider the effects of undertakings (i.e., actions) on any resource that is included or eligible for inclusion in the Register, and to afford the ACHP a reasonable opportunity to comment on such undertakings. In Maryland, the Maryland Historical Trust (a division of the Maryland Department of Planning) serves as the SHPO and also participates in Section 106 consultations. Pursuant to OPNAVINST 5090.1C, Chapter 5-5, an Environmental Assessment must be prepared for any proposed action that would have an adverse effect on resources listed or determined to be eligible for listing in the Register.

Section 110 of the NHPA requires federal agencies to establish a preservation program for the identification, evaluation, nomination (for the Register), and protection of historic properties. To this end, the Navy performs surveys and investigations to identify any historic properties under its jurisdiction.

5.13.1 Historic Architectural Resources

The most recent architectural and historic landscape evaluation of NAS Patuxent was performed in October 2009 (NAVFACWASH, 2009; NAVFACWASH, 2010). The surveys identified architectural resources and determined if resources were eligible for listing on the Register.

EUL Site 2

No historic buildings or landscapes have been identified within EUL Site 2 (Smolek, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with the presence of known historic architectural resources would apply to EUL Site 2. However, once the lessee provides information about the development plans, the Navy will pursue consultation with SHPO to seek concurrence that there is no adverse effect to historic architectural resources.

5.13.2 Archeological Resources

Archeological resources are material remains of past life or activities (Reinke & Swartz, 1999). Some examples of archeological resources include pottery, basketry, bottles, weapons, tools, rock paintings, rock carvings, and gravesites.

The Native American Graves Protection and Repatriation Act of 1990 (NAGPRA), enacted under 25 U.S.C. 3001, prohibits the intentional removal of certain types of Native American cultural items from Federal or tribal lands. Removal of cultural items may be permitted under an Archeological Resource Protection Act (ARPA) permit, which includes authorization and a written agreement between the federal agency and an appropriate repository that will house and curate the collection recovered from the project, and in consultation with the appropriate Native American groups (USDI, 2010). NAGPRA provides for the return of burial remains, associated

funerary objects, sacred objects, and objects of cultural patrimony to the appropriate tribes. It established Native American ownership of human remains and associated artifacts discovered on Federal lands after the date of enactment (USDI, 2010).

EUL Site 2

A Phase I archeological survey, which locates archeological resources, has been performed at NAS Patuxent to make generalizations about the type and distribution of archeological properties that may be present. This survey indicated that no potentially-significant resources are known to be present at EUL Site 2 (Smolek, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with the presence of known archeological resources would apply to EUL Site 2. However, once the lessee provides information about the development plans, the Navy will pursue consultation with SHPO to seek concurrence that there is no adverse effect to archaeological resources.

5.14 Air Quality

Air quality is regulated under the authority of Title I, Part A, Section 109 of the Clean Air Act (CAA). EPA has established health-based National Ambient Air Quality Standards (NAAQS) for the criteria pollutants carbon monoxide, nitrogen dioxide, ozone, particulate matter, lead, and sulfur dioxide. To monitor and meet the NAAQS, the CAA divides the United States into geographic areas called “air quality control regions” (AQCRs). St. Mary’s County, where NAS Patuxent River is located, is a designated AQCR. An AQCR in which levels of a criteria air pollutant meet the health-based NAAQS is defined as an *attainment* area for the pollutant, while an area that does not meet the NAAQS is designated a *nonattainment* area for the pollutant. An area that was once designated a nonattainment area but was later reclassified as an attainment area is known as a *maintenance* area. An area may have an acceptable level for one criteria air pollutant but may have unacceptable levels for other criteria air pollutants. Thus, an area could be attainment, maintenance, and nonattainment at the same time for different pollutants.

In addition to NAAQS requirements, federal agencies must obtain permits to operate equipment that generates air emissions. Title V of the CAA establishes an operating permit program that requires all air quality requirements for a source to be combined into one comprehensive permit document. All major sources of air pollutants are required to apply for a Title V permit, which is valid for five (5) years. In addition to complying with the Title V operating permit, the CAA requires that federal agencies comply with state and local air quality requirements in the same manner as any non-governmental entity. NAS Patuxent River has received a Title V operating permit that includes 126 sources of air emissions, in addition to various insignificant emission units (Naval Air Station Patuxent River, Maryland, 2010).

Pursuant to COMAR 26.11.02.09, any new source of emissions must be issued a Permit to Construct (PTC) by MDE prior to installation. A PTC allows the installation of the unit and provides operating requirements that apply until the unit is incorporated into the next renewal of the Title V operating permit.

EUL Site 2

The AQCR of St. Mary’s County is an attainment area for all criteria pollutants of the CAA. The most recent Title V operating permit for NAS Patuxent River is effective on July 1, 2010 and

expires June 30, 2015. At EUL Site 2 there are no sources of air emissions identified in the Title V permit and no PTCs have been issued for construction of any emission units (Ichniowski, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with air emissions would apply to EUL Site 2.

5.15 Flight Operation Noise & Safety

In the early 1970s, the DoD established the Air Installations Compatibility Use Zone (AICUZ) Program to balance the need for aircraft operations and community concerns over aircraft noise and accident potential. The objectives of the AICUZ program, according to the Chief of Naval Operations Instruction (OPNAVINST 11010.36C), are the following: 1) to protect the health, safety, and welfare of civilians and military personnel by encouraging land use which is compatible with aircraft operations; 2) to protect the US Department of Navy and Marine Corps installation investments by safeguarding the installation's operational capabilities; 3) to reduce noise impacts caused by aircraft operations while meeting operational, training, and flight safety requirements, both on and in the vicinity of air installations; and 4) to inform the public about the AICUZ program and seek cooperative efforts to minimize noise and aircraft accident potential impacts by promoting compatible development in the vicinity of military air installations (Department of the Navy, 2008). Accident potential zones (APZ) and Zones are present at and adjacent to air operation areas (e.g., airfields, runways). APZs describe the probably impact area if an accident were to occur. Noise Zones are defined by noise contours that are developed by a computerized simulation of aircraft activity at the installation and reflect site-specific operational data (e.g., flight tracks, type and mix of aircraft, frequency and times of operations) (Department of the Navy, 2008).

EUL Site 2

There are no APZ present at EUL Site 2 (NAVFACWASH, 2010; Department of the Navy, 2008). Land use controls associated with APZ do not apply within EUL Site 2. EUL Site 2 is within Noise Zone 2 (65-69 decibels). Development within Noise Zone 2 is compatible with all land uses (e.g., commercial, recreational, industrial), except residential (Department of the Navy, 2008).

5.16 Notices of Violation

There are no documented Notices of Violation (NOVs) other than those pertaining to administrative concerns at NAS Patuxent (Smith, 2010a; Gray, 2010b). As a result, no environmental conditions, restrictions, or land use controls associated with NOVs would apply to EUL Site 2.

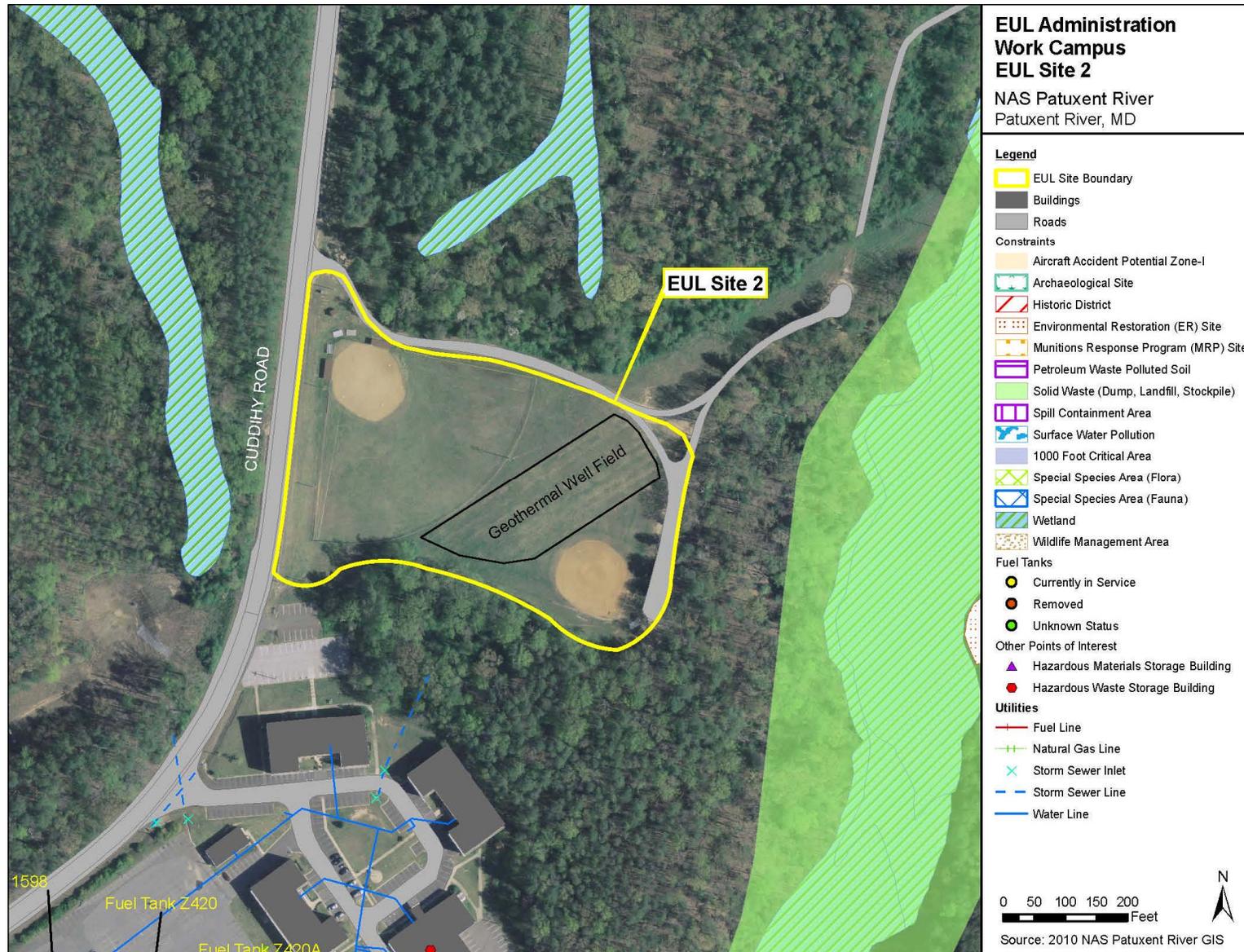


Figure 5-1. Site Conditions – EUL Site 2

6. ENVIRONMENTAL CONDITIONS OF ADJACENT PROPERTY

This ECP study evaluated the adjacent property with respect to all of the environmental considerations that are discussed in Section 5 (Environmental Conditions of Subject Property). This section presents only those adjacent property findings that could potentially affect development or use of EUL Site 2.

All adjoining properties of EUL Site 2 are within the boundaries of NAS Patuxent River. The site is bounded by Cuddihy Road to the west, shrub/scrub wetland area to the north and forested areas to the east and south (see Figure 5-1).

Environmental Restoration

Approximately 600 feet east of EUL Site 2 is ER Site #2 (Disposal Site at Pond #1). A Naval Assessment and Control of Installation Pollutants Program confirmation study was conducted at ER Site #2 between 1985 and 1987. The results showed elevated concentrations of semi-volatile organic compounds (SVOCs) and pesticides in sediment and fish samples. An Interim Remedial Investigation (IRI) was conducted at ER Site #2 in 1991, confirming low concentrations of metals, a PCB compound, and several pesticides in sediment samples. Low concentrations of metals and a pesticide were also found in fish samples. A Remedial Investigation/Feasibility Study (RI/FS) is scheduled for 2011 to further characterize the site. The Agency for Toxic Substances and Disease Registry (ATSDR) conducted health assessments at NAS Patuxent River in 1995 and 1996 and concluded that fish consumption from Pond #1 should be limited to 19 meals per year for 7 years until additional data is available for risk assessment. A Remedial Investigation/Feasibility Study (RI/FS) is scheduled for 2011 to further characterize the site (Department of the Navy, 2009; NAVFACWASH, 2010).

ER Sites #2 is located at a lower elevation than EUL Site 2. Due to the natural flow of groundwater from high to low, there is a minimal risk of contamination to EUL Site 2 from ER Site #2 located in the adjacent property (Simpson, 2010c).

Solid/Bio-hazardous Waste

Adjacent to the east side of EUL Site 2 is an unconfirmed area identified by the GIS as a Solid Waste Dump Area. This area includes ER Site #2 (Disposal Site at Pond #1), but extends to within 150 feet of EUL Site 2 (see Figure 5-1) (NAVFACWASH, 2010). There are no additional historical records for the Solid Waste Dump Area delineated in GIS.

Wetlands

Shrub/scrub wetlands are found adjacent to EUL Site 2. All wetlands adjacent to EUL Site 2 should be flagged and surveyed according to general management recommendations (GMR) in order to determine wetland delineation. If development occurs within a 100 ft (30.48 meters) buffer of any wetlands, they must be delineated according to CWA Section 404 (see Section 5.12.2 Wetlands). Sediment/erosion control and stormwater measures must be implemented as necessary to prevent any sediment transport into wetlands. These plans must be reviewed and approved by the MDE for projects exceeding 5,000 square feet (464.5 square meters) or 100 cubic yards of disturbance. MDE requires the action proponent to obtain a Non-tidal Wetlands

and Waterways Permit for any activity that alters a non-tidal wetland or its 25 ft (7.62 meters) buffer.

7. CONCLUSIONS

Findings of this ECP report for EUL Site 2 and its adjacent properties are based on an extensive record search of available documents, a thorough review of the applicable and relevant documents, analysis of the Station's GIS, two visual surveys conducted on May 18, 2010 and June 1, 2010, and on-site interviews with personnel knowledgeable about the history of EUL Site 2. Findings related to the areas of environmental considerations that were evaluated during the ECP study include:

- Environmental Restoration – No documented ER sites are located within EUL Site 2 and no additional investigations are underway or anticipated. However, ER Site #2 is adjacent to EUL Site 2. Due to the natural flow of groundwater from high to low, there is a minimal risk of contamination to EUL Site 2 from ER Site #2, which is located at a higher elevation in the adjacent property.
- Munitions or Explosives of Concern – There are no documented MRP sites within EUL Site 2, and no explosives operations (e.g., munitions storage or handling) are known to have taken place within EUL Site 2. However, due to incomplete records and historical disposal practices at NAS Patuxent River, there is some potential to find MEC, including buried UXO, during earthwork at the Station. If MEC is discovered, earth disturbance in the vicinity of the discovery must cease and the location and description of the item(s) must be reported immediately to the Navy Project Manager.
- Tanks/Petroleum Contamination – No petroleum tanks are known to be present within EUL Site 2. Additionally, there are no historical records of tanks formerly within this site. However, historical tank records may be incomplete, and there is some potential that undocumented tanks could be encountered during earthwork at the Station. Accordingly, there is also some potential for subsurface or groundwater contamination as a result of spills or leaks associated with any such undocumented tanks.
- Hazardous Substances/Waste Management – There are no records of any hazardous waste storage or contamination at EUL Site 2.
- Solid/Bio-hazardous Waste – EUL Site 2 has not been associated with the generation, handling, or storage of bio-hazardous or solid waste. However, adjacent to the east side of EUL Site 2 is an unconfirmed area identified by the GIS as a Solid Waste Dump Area.
- Polychlorinated Biphenyls – All transformers containing PCB's were retrofitted or replaced in the 1970's and 1980's. No PCB program or reports have been developed due to the overall low risk of PCB equipment and exposure.
- Asbestos – There are no buildings or other types of infrastructure at EUL Site 2 that would have the potential for asbestos-containing materials, and none are known to have previously existed.

- Lead-Based Paint – There are no buildings or other types of infrastructure at EUL Site 2 that would have the potential for lead-based paint, and none are known to have previously existed.
- Pesticides and Herbicides – Maintenance of the baseball fields at EUL Site 2 includes minimal broadleaf weed control. There are documented invasive species present at EUL Site 2; however, no pesticide or herbicide treatment has occurred.
- Radon/Radiological Material – A base-wide survey of radon levels was completed in the 1970's and 1980's. The survey found no radon levels of concern.
- Surface Water – There are no surface waters at EUL Site 2.
- Stormwater – Stormwater currently flows eastward across vegetated areas of EUL Site 2. Any new development within EUL Site 2 must be designed and executed in accordance with applicable requirements of the following standards and regulations to ensure that stormwater impacts are minimized: Section 438 of EISA of 2007; Navy's LID policy; and Maryland's Stormwater Management Act of 2007.
- Groundwater – There is some potential for groundwater contamination as a result of ER Site #2 (Disposal Site at Pond #1) and an unconfirmed Solid Waste Dump Area are located approximately 600 and 200 feet east of EUL Site 2, respectively. Refer to Section 6 (Environmental Condition of Adjacent Properties) for further information.
- Forests – Any tree clearing of the fragmented forest along the boundary of EUL Site 2 is recommended to take place in the winter to avoid disrupting the nesting of migratory birds. Any merchantable timber associated with clearing for development of EUL Site 2 must be disposed of properly, and with appropriate disbursement to the Navy Forestry Account.
- Wetlands – There are no documented wetlands present within EUL Site 2.
- Floodplains – There are no floodplains within EUL Site 2.
- Coastal Zone – Development within EUL Site 2 will not impact the Maryland Coastal Zone or Critical Area.
- Essential Fish Habitat – There is no essential fish habitat within EUL Site 2.
- Threatened or Endangered Species – There are no federally- or state-listed threatened or endangered species at EUL Site 2.
- Historic Architectural Resources – No historic buildings or landscapes have been identified within EUL Site 2. However, once the lessee provides information about the development plans, the Navy will pursue consultation with SHPO to seek concurrence that there is no adverse effect to historic architectural resources.

- Archeological Resources – A Phase I survey has been performed, indicating that no potentially-significant archeological resources are known to be present at EUL Site 2. However, once the lessee provides information about the development plans, the Navy will pursue consultation with SHPO to seek concurrence that there is no adverse effect to archaeological resources.
- Air Quality – There are no sources of air emissions identified in the NAS Patuxent River Title V permit and no PTCs have been issued for construction of any emission units at EUL Site 2.
- Noise & Safety – There are no AICUZ noise zones or safety issues that would restrict land development at EUL Site 2.
- Notices of Violation – There are no documented NOV's other than those pertaining to administrative concerns at NAS Patuxent River.

In accordance with DoD policy regarding the classification of properties that may exhibit hazardous substance or petroleum contamination (please reference Deputy Under Secretary of Defense Goodman Memorandum dated 21 October 1996), EUL Site 2 has been classified as Category 7. This category applies to properties that have not been evaluated or require additional evaluation. While no releases, disposals, or mitigation of hazardous substances have been documented within EUL Site 2, there is reason to suspect contamination. Possible contamination concerns at EUL Site 2 include groundwater contamination from nearby ER sites. Further evaluation of these contamination concerns should be performed prior to execution of any property transfer involving EUL Site 2.

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9. CERTIFICATION

Based on records reviews, site inspections, and interviews, the environmental professional(s) certify that the environmental conditions of the property are as stated in this document and this property is suitable for outgrant.

Environmental Professional:

Signature _____ Title _____

Print Name _____ Date _____

The real estate professional(s) acknowledge these restrictions and/or LUCs identified above and will ensure they are made a part of the outgrant document.

Real Estate Professional:

Signature _____ Title _____

Print Name _____ Date _____

Property Owner (Activity or Region) acknowledges and accepts the foregoing statement of environmental conditions and the land use controls (if any) that will be required for this real estate outgrant:

Signature _____ Title _____

Print Name _____ Date _____

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Appendix A
LIST OF CONTACTS

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List of Contacts

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Final

Enhanced Use Lease Site 3
Environmental Condition of Property Report
Administration Work Campus

Naval Air Station Patuxent River
Patuxent River, Maryland

Prepared for:



Naval Facilities Engineering Command Washington

Public Works Department

NAS Patuxent River

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July 2010

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ABBREVIATIONS, ACRONYMS, AND SYMBOLS

ACHP	Advisory Council on Historic Preservation
ACM	Asbestos-containing material
AMERA	Asbestos Hazard Emergency Response Act
AICUZ	Air Installations Compatibility Use Zone
APZ	Accident potential zone
AQCR	Air quality control region
ARPA	Archeological Resource Protection Act
AST	Aboveground storage tank
ATSDR	Agency for Toxic Substances and Disease Registry
BMP	Best Management Practice
BRAC	Base Realignment and Closure
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CWA	Clean Water Act
CZM	Coastal Zone Management
DoD	Department of Defense
ECP	Environmental Condition of Property
EDR	Environmental Data Resources
EFH	Essential fish habitat
EISA	Energy Independence and Security Act
ENE	East-north-east
EO	Executive Order
ER	Environmental Restoration
ESA	Endangered Species Act of 1973
ESD	Environmental site design
EUL	Enhanced Use Lease
FFA	Federal Facility Agreement
FIDS	Forest Interior Dwelling Species
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FY	Fiscal Year
ga	Gallons
GIS	Geographic Information System
GMR	General management recommendations
HTH	High Test Hypochlorite
IPMP	Integrated Pest Management Plan
IRI	Interim Remedial Investigation
LBP	Lead-based paint
LID	Low impact development
LQG	Large Quantity Generator
LUC	Land use control
MBTA	Migratory Bird Treaty Act
MDE	Maryland Department of the Environment
MEC	Munitions and explosives of concern
MEP	Maximum extent practicable
mph	Miles per hour

MRP	Munitions Response Program
msl	Mean sea level
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act of 1990
NAS	Naval Air Station
NAVFAC	Naval Facilities Engineering Command
NAVRAMP	Naval Radon Assessment and Mitigation Program
NDW	Naval District Washington
NHPA	National Historic Preservation Act of 1966
NOAA	National Oceanographic & Atmospheric Administration
NOV	Notices of Violation
NRC	Naval Recreation Center
OPNAVINST	Office of the Chief of Naval Operations Instruction
PCBs	Polychlorinated biphenyls
PTC	Permit to Construct
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
RVs	Recreational vehicles
SDWA	Safe Drinking Water Act
SHPO	State Historic Preservation Officer
SVOC	Semi-volatile organic compounds
The Register	National Register of Historic Places
TSCA	Toxic Substances Control Act
USACE	United States Army Corps of Engineers
U.S.C.	United States Code
USFWS	United States Fish and Wildlife Service
USGS	United States Geologic Survey
UST	Underground storage tank
UXO	Unexploded ordnance

Executive Summary

Under its Enhanced Use Leasing (EUL) program, the Department of the Navy (hereinafter referred to as the “Navy”) is making available for lease non-excess real property for the development of new administrative space at the Naval Air Station (NAS) Patuxent River, Patuxent River, MD (hereinafter referred to as NAS Patuxent River or the “Station”). This Environmental Condition of Property (ECP) report was prepared for NAS Patuxent River EUL Site 3 (hereinafter referred to as “EUL Site 3”) and its adjacent properties. This report evaluates the current and former uses of the site; describes the environmental conditions of the land, facilities, and real property assets within the site; and summarizes any environmental restrictions, land use controls, and consultation requirements that may be necessary for development within EUL Site 3.

The ECP report findings for EUL Site 3 are based on a record search of readily available documents, a thorough review of the applicable and relevant documents, analysis of the NAS Patuxent River Geographic Information System (GIS), interviews with personnel knowledgeable about the site and its adjacent properties, and visual site investigations conducted on May 18, 2010 and June 1, 2010.

EUL Site 3 consists of approximately 8.99 acres (36,381 square meters) of land located on the northeast corner of Buse Road and Cuddihy Road. According to historical topographic maps, aerial photography, and property record cards, EUL Site 3 was undeveloped until NAS Patuxent River was established in 1943. Development of Bachelor Enlisted Quarters began immediately after commission of the Station. EUL Site 3 currently contains a Youth Center, pool, and three administrative buildings.

Areas of potential environmental concern identified during the ECP study for EUL Site 3 and its adjacent properties are listed below by subject area:

- Solid/Bio-hazardous Waste;
- Asbestos-containing Material;
- Lead-based Paint;
- Wetlands; and
- Flight Operation Noise and Safety.

In accordance with DoD policy regarding the classification of properties that may exhibit hazardous substance or petroleum contamination (please reference Deputy Under Secretary of Defense Goodman Memorandum dated 21 October 1996), EUL Site 3 has been classified as Category 7. This category applies to properties that have not been evaluated or require additional evaluation. While no releases, disposals, or mitigation of hazardous substances have been documented within EUL Site 3, there is reason to suspect contamination. Possible contamination concerns at EUL Site 3 include groundwater contamination from nearby ER sites. Further evaluation of these contamination concerns should be performed prior to execution of any property transfer involving EUL Site 3.

1. INTRODUCTION

1.1 Introduction and Background

The Navy is making available for lease non-excess real property at the NAS Patuxent River, Patuxent River, Maryland (hereinafter referred to as NAS Patuxent River or the “Station”) under its EUL program.

NAS Patuxent River is located in Saint Mary’s County in Southern Maryland at the confluence of the Chesapeake Bay and the Patuxent River. NAS Patuxent River covers approximately 6,400 acres (25.9 square kilometers) with an additional 850 acres (3.4 square kilometers) at the Webster Field Annex, located about 15 miles (24.1 kilometers) south of the Station. The Naval Recreation Center (NRC) Solomons located across the Patuxent River in Solomons, Maryland is also under the administrative control of NAS Patuxent River and Naval District Washington (NDW). NRC Solomons encompasses approximately 300 acres (1.2 square kilometers) and is the largest outdoor recreation facility in the Navy. Figure 1-1 presents the location of NAS Patuxent River, Webster Field Annex and NRC Solomons in the Washington, D.C. metropolitan area.

The Station supports naval aviation operations by researching, developing, testing and evaluating aircraft components and related products. The facilities are also used by foreign governments, academic institutions and private industry for similar projects. The Naval Aviation Systems Team at Patuxent River includes the Naval Air Station, the Webster Field Annex and the Naval Air Warfare Center Aircraft Division. NAS Patuxent River also is home to approximately 50 other tenant activities.

In support of the development of new administrative space through an EUL action, NAVFAC Washington has prepared this ECP report for NAS Patuxent River EUL Site 3. The following report presents a summary of readily available information on the current and former uses, environmental conditions of, and concerns relative to, the land, facilities and real property assets at EUL Site 3.



Figure 1-1. Location of NAS Patuxent River in the Washington, D.C. Metropolitan Area

1.2 **Organization of ECP Report**

The ECP report is organized as follows:

- Section 2 (Survey Methodology) provides the methodology used to conduct the ECP study, including records review, site visit, and interviews.
- Section 3 (Past and Current Use) describes the current and former uses of the EUL site and the adjacent property.
- Section 4 (Environmental Setting) describes the environmental setting of the EUL site.
- Section 5 (Environmental Conditions of Subject Property) addresses the environmental conditions and related findings for the EUL site.
- Section 6 (Environmental Conditions of Adjacent Property) addresses the environmental conditions and related findings for property adjacent to the EUL site.
- Section 7 (Conclusions) presents the conclusions and recommendations of the ECP study.
- Section 8 (References) presents a list of references used in preparation of the ECP report.
- Section 9 (Certification) provides certification of the ECP report.

1.3 **Purpose of ECP Report**

The purpose of this ECP report is to establish the environmental condition of the real property to support the proposed EUL real estate action. This ECP study is primarily based on the review of readily available information, visual site inspections, and interviews with personnel familiar with the site history to determine any environmental risks associated with the proposed site.

Readily apparent operational and regulatory compliance deficiencies of environmental program areas such as underground storage tanks (USTs), air emissions, lead-based paint, asbestos, pesticides, polychlorinated biphenyls (PCBs), radon, medical waste, munitions or explosives of concern, lead based paint, stormwater, and natural resources are also provided in the ECP report. This ECP study does not re-investigate or otherwise review the adequacy of previously conducted investigations or remedial actions.

This ECP report will provide baseline environmental conditions for EUL Site 3 pursuant to the following goals:

- To document inquiry into environmental conditions to support real estate decisions;
- To protect the Navy from future liability;
- To determine risk of exposure to grantees/government employees; and
- To inform grantees of environmental conditions, restrictions, and land use controls (LUCs) associated with the real property (Department of the Navy, 2006).

1.4 Parcel Identification and Boundaries

EUL Site 3 consists of approximately 8.99 acres (36,381 square meters) of land located on the northeast corner of Buse Road and Cuddihy Road. The site is developed and contains a Youth Center, pool, and three administrative buildings. Figure 1-2 presents the location of EUL Site 3 at NAS Patuxent River.



Figure 1-2. EUL Site 3 – NAS Patuxent River

1.5 Legal Description

Facility Name and Address: Naval Air Station Patuxent River, 22268 Cedar Point Road,
Patuxent River, MD 20670

Property Owner: United States Government

Date of Ownership: 1 April 1943

Current Occupant: US Navy

Zoning: Military

County, State: St. Mary's, Maryland

USGS Quadrangle: Solomons Island, MD. 38076-C4-TF-024

Latitude, Longitude: 38°17'02.53"N, 76°26'55.76"W

Parcel Number: Not Available

2. SURVEY METHODOLOGY

2.1 Approach and Rationale

This ECP report was prepared to document the environmental conditions of, and concerns relative to, the land, facilities, and real property assets of EUL Site 3. The environmental conditions of properties adjacent to EUL Site 3 were also considered in this report.

This report serves as a summary of readily available information based on an extensive record search of available documents, a thorough review of the applicable and relevant documents, analysis of the Station's Geographic Information System (GIS), two visual surveys conducted on May 18, 2010 and June 1, 2010, and on-site interviews with personnel knowledgeable about the history of EUL Site 3. A visual inspection was completed for all buildings at EUL Site 3. However, a 100% visual reconnaissance of each building (e.g., attics, crawl spaces, restricted areas, etc.) was not practical due to accessibility restrictions.

Extensive environmental investigations and reports and pertinent historical documents were reviewed in support of this ECP report. However, no sampling or analysis of any media was conducted during this survey. Information obtained is reflected within this report by reference. A complete list of references is provided as Section 8 (References).

The information obtained from the Navy and other environmental reports were considered to be accurate unless reasonable inquiries indicated otherwise. New information or changes in site use could require a review and possible modification of the findings and conclusions contained in this report.

2.2 Property Classification Guidelines

Based on analysis of the available data, EUL Site 3 was classified into one of seven Department of Defense (DoD) Environmental ECP categories as defined by the S.W. Goodman Memorandum dated October 21, 1996. The property classification categories are as follows:

- Category 1: Areas where no release or disposal of hazardous substances or petroleum products has occurred (including no migration of these substances from adjacent areas).
- Category 2: Areas where only release or disposal of petroleum products has occurred.
- Category 3: Areas where release, disposal, and/or migration of hazardous substances has occurred, but at concentrations that do not require a removal or remedial response.
- Category 4: Areas where release, disposal, and/or migration of hazardous substances has occurred, and all removal or remedial actions to protect human health and the environment have been taken.
- Category 5: Areas where release, disposal, and/or migration of hazardous substances has occurred, and removal or remedial actions are underway, but all required remedial actions have not yet been taken.
- Category 6: Areas where release, disposal, and/or migration of hazardous substances has occurred, but required actions have not yet been implemented.
- Category 7: Areas that are not evaluated or require additional evaluation.

2.3 **Related Reports**

Related environmental reports used in the preparation of this ECP report include, but are not limited to the following:

- Final Environmental Impact Statement for Increased Flight and Related Operations in the Patuxent River Complex, Patuxent River, Maryland;
- Integrated Natural Resources Management Plan;
- (Environmental Restoration) Site Management Plan, 2009 Update;
- Cold War Historic Context (1945-1989) and Architectural Survey and Evaluation;
- Draft Integrated Pest Management Plan, Naval Air Station Patuxent River, Maryland;
- Environmental Baseline Survey Update - Electric Utility Privatization: Naval Air Station Patuxent River Main Base, Lexington Park, Maryland; Webster Field Annex, St. Inigoes, Maryland; & Naval Recreation Center Solomons, Solomons Island;
- Historic Landscape Survey, Naval Air Station Patuxent River, Webster Field, and Solomons Complex; and
- NAS Patuxent River Spill Records Database.

A complete list of references is provided in Section 8 (References).

2.4 **Real Estate Document Review**

A comprehensive property history of EUL Site 3 was created by reviewing Property Record Cards maintained by NAS Patuxent River for all former and current buildings and infrastructure located within the site. Historical land use records and personal interviews were used to understand property use and condition prior to the Navy taking ownership of the property. In addition, an environmental data and historical records package including a radius report, relevant historical aerial photographs, and topographic maps of the site was obtained from Environmental Data Resources (EDR) on May 20, 2010 and includes a radius report, relevant historical aerial photographs, and topographic maps of the site. Section 3 (Past and Current Use) presents the past and current use of EUL Site 3.

3. PAST AND CURRENT USE

3.1 Installation History

Prior to the early 20th century, NAS Patuxent River was used primarily for farming or remained undeveloped. Several plantations existed in the area, including Eltonhead Manor (1648), Susquehanna (1649), and Mattapany-Sewell (1663). A topographic maps dated 1905, indicates that a small community called Pearson was located near the current northwest boundary of the Station, which consisted of a few residences, post office, a store, automobile dealer, and a church. The community was no longer represented on any historical maps more recently dated than 1943 (NAVFAC, Atlantic Division, 2009b; EDR, 2010a; EDR, 2010b).

NAS Patuxent River was commissioned on April 1, 1943, in an effort to centralize widely dispersed air testing facilities that had been established prior to World War II. This consolidation effort was swift, and the farming operations on the property were replaced by flight test operations within a year after the 1943 ground breaking for construction. The U.S. Naval Test Pilot School was established in 1958. In 1975, the Naval Air Test Center began to assume its role as the Naval Air Systems Command's principal site for development testing. Test facilities were upgraded in the late 1970s, with some of the largest construction appropriations in the history of the base (NAVFAC, Atlantic Division, 2009b; EDR, 2010a; EDR, 2010b).

Within the last decade, several new facilities were established at NAS Patuxent River due to Base Realignment and Closure (BRAC) actions. More than \$155 million has been budgeted for new engineering complexes and renovation of existing facilities. These include the Aircraft Technologies Lab; North Engineering Center; South Engineering Center; Frank Knox School improvement; Integrated Project Team Building; and the Propulsion System Evaluation Facility. The Aircraft Technologies Lab and the North and South Engineering Centers combined are occupied by 1,300 people recently relocated to NAS Patuxent River (Department of the Navy, 2002).

NAS Patuxent River is largely developed with aircraft runways, taxiways, hangars, and supporting structures and equipment. Residential communities, commercial properties, schools, churches, and recreational areas are also present. The Station is improved with water, wastewater, electric, and natural gas service.

3.2 Subject Property

According to historical topographic maps and property record cards, EUL Site 3 remained undeveloped and used as farmland until NAS Patuxent was established in 1943. Development of Bachelor Enlisted Quarters began immediately after commission of the Station. EUL Site 3 currently contains a Youth Center, pool, and three administrative buildings. Table 3-1 summarizes the facilities and history of functions on EUL Site 3. Figure 5-1 illustrates the locations of existing facilities at EUL Site 3.

As a result of development, EUL Site 3 is almost entirely flat, with a slight downward slope near the northeastern boundary. The highest elevation on the site is approximately 120 feet (36 meters) above mean sea level (msl), and the lowest elevation is approximately 110 feet (33 meters) above msl.

Table 3-1. Facilities– EUL Site 3

Facility Number/Name	Built Date	Function(s)
Building 416	1943	Bachelor Enlisted Quarters, Administrative Office
Building 419	1943	Bachelor Enlisted Quarters, Administrative Office
Building 1597	1976	Community Center, Youth Center
Building 1598	1976	MWR Bath House
Building 2494	2000	Enterprise Solutions Office, Administrative Office

3.3 Adjacent Property

According to historical topographic maps and property record cards, the area adjacent to EUL Site 3 remained undeveloped and used as farmland until NAS Patuxent River was established in 1943. Development in the adjacent area began immediately after commission of the Station. Adjacent area facilities currently serves as administrative offices. Table 3-2 summarizes the existing adjacent area facilities and functions. Figure 5-1 illustrates the locations of EUL Site 3 adjacent area facilities.

Table 3-2. Adjacent Area Facilities

Facility Number/Name	Built Date	Function(s)
Building 420	1956	Mess Hall, Flight Simulator Training Building, Applied Instructions Building
Building 446	1944	Mess Hall, Acey Ducey Hall, Storage Building, Administrative Office
Building 447	1944	Barracks, Administrative Office
Building 448	1944	Barracks, Administrative Office
Building 449	1944	Barracks, Administrative Office
Building 450	1944	Scrub Building, Technology Building, Administrative Office
Building 451	1944	Scrub Building, Training Building, Administrative Office

Property adjacent to the site provides a range of outdoor recreation activities including hunting, hiking, and bird-watching. The Outdoor Recreation Program at NAS Patuxent River relieves pressure from recreational areas in the community and generates a positive impact on the Station's staff productivity and retention (Department of the Navy, 2002).

4. ENVIRONMENTAL SETTING

4.1 Location

NAS Patuxent River is located in the southern portion of St. Mary's County, Maryland, at latitude 38°17'N and longitude 76°25'W, approximately 54 miles (87 kilometers) southeast of Washington, DC. St. Mary's County is the southernmost part of Maryland's western shore and consists of a peninsula surrounded by tidal water on all but the northwestern boundary. NAS Patuxent River occupies a small peninsula and broad headland (known as Cedar Point) at the confluence of the Patuxent River and Chesapeake Bay in the eastern portion of the county. The Station, which comprises approximately 6,400 acres (25.9 square kilometers), is bounded by the Patuxent River to the north, the Chesapeake Bay to the east, and the town of Lexington Park, Maryland to the south and west (NAVFAC, Atlantic Division, 2009b). Figure 1-1 presents the location of NAS Patuxent River, Webster Field Annex and NRC Solomons in the Washington, D.C. metropolitan area.

4.2 Climatology

NAS Patuxent River lies within the Humid Temperate, Semi-Continental Climate Zone. The Station's proximity to the Patuxent and Potomac Rivers, the Chesapeake Bay, and their tributaries affects the local climate. The atmospheric flow in this region is from west to east across North America, and there are four distinct seasons. Prevailing winds are from the northwest, except during the warm months, when they are more southerly. Average wind speeds are approximately nine miles per hour (mph), although winds may reach in excess of 60 mph on rare occasions. Windiest periods in this region include late winter and early spring. Additionally, other extreme weather events, such as tornadoes, hurricanes, and blizzards occur during other seasons, but are very rare.

Normal temperatures for the region range from an average low of 29°F and an average high of 44°F in January (the coldest month) to an average low of 70°F and an average high of 86°F in July (the warmest month).

The annual mean precipitation for the area is approximately 41.7 inches (1.1 meters), with approximately 15 inches (0.381 meters) of this amount occurring as snowfall. Precipitation occurs evenly throughout the year, with slight increases occurring in July and August. In summer, precipitation occurs mostly through thunderstorms, which occur on an average of 33 days per year. Drought may occur in any season but is most likely to occur in the summer (Department of the Navy, 2002).

4.3 Geology

The geological deposits underlying NAS Patuxent River are thick, unconsolidated beds of sand, silt, clay, and gravel resulting from marine deposits. Because these formations are entirely sedimentary in nature, they are extremely vulnerable to erosion. NAS Patuxent River 3 is primarily underlain with a Matapeake-Mattapex-Sassafras soil association with smaller areas of a Sassafras- Beltsville association and Othello-Mattapex association (Department of the Navy, 2002).

The dominant surface sediments at the Station were deposited during the Quaternary Period, primarily Sunderland, Wicomico, and Talbot deposits. Layers that outcrop in St. Mary's County were deposited during the Tertiary and Quaternary Periods. The Station is underlain by a Cretaceous layer, which consists of Arundel, Patapsco, Raritan, Magothy, Matawan, and Monmouth formations (Department of the Navy, 2002).

4.4 Hydrogeology

There are three principal groundwater aquifers beneath NAS Patuxent River: Piney Point-Nanjemoy Aquifer, Aquia Aquifer, and Patapsco Aquifer. The Piney Point- Nanjemoy Aquifer is a major source of potable water for residential users in southern Maryland. The Aquia Aquifer is the principal source of potable and industrial water for both the Station and local public water suppliers. The Station also has two water supply wells tapping into the Patapsco Aquifer.

The elevation of the water table beneath the Station ranges from sea level along the coastal areas to approximately 80 feet (24 meters) below msl in the southwestern portion of the facility (Department of the Navy, 2009).

Several major drainage areas collect precipitation runoff from the Station. This runoff goes directly to one of four hydraulic sinks: (1) Patuxent River, (2) Chesapeake Bay, (3) estuary areas, or (4) freshwater creeks and ponds and associated wetland areas. All of the runoff from the Station eventually flows to the Chesapeake Bay.

There are six constructed ponds located on the Station. Except for Richneck Pond, all are located in the southern and western portions of the Station and serve to control runoff and provide fish and wildlife habitats, recreation, and a source of water for firefighting. In addition to these water bodies, there are low-lying areas throughout the Station that tend to act as temporary stormwater storage areas, helping to control runoff rates and downstream flooding (Department of the Navy, 2002).

4.5 Topography

The terrain at NAS Patuxent River rises gradually from the Chesapeake Bay shoreline westward. A majority of the Station (70 percent) is level and fairly well-drained. Some low areas are somewhat-poorly-drained to poorly-drained, and become intermittently flooded and/or saturated. The southwestern portion of the Station is hilly, with the highest elevations on the Station.

The United States Geologic Survey (USGS) Solomons Island, Maryland quadrangle indicates a general topographic gradient of east-north-east (ENE) for the Station. Elevation averages 35 feet (10 meters) above msl at the center of the Station, with higher elevations on the western portion of the property and lower elevations on the north and east boundaries with the Patuxent River and the Chesapeake Bay, respectively (EDR, 2010a; EDR, 2010b).

5. ENVIRONMENTAL CONDITIONS OF SUBJECT PROPERTY

This section discusses various aspects of the affected environment within EUL Site 3 and provides regulatory background, discussion of resources or features present, and an overview of restrictions, land use controls, and consultation requirements that may be necessary for development within this site.

A site map (Figure 5-1) was developed using GIS data retrieved from the Navy. The map displays the pertinent environmental constraints identified in the site. The map is not comprehensive and is intended only to support the information provided in this report.

5.1 Environmental Restoration

The Environmental Restoration (ER) program at NAS Patuxent River was established to comply with the Federal Facility Agreement (FFA) signed on December 2000 between the Navy and the EPA Region III. The ER program identifies, investigates, and environmentally restores sites containing hazardous substances to reduce the risk to human health and the environment. The ER program also incorporates the Munitions Response Program (MRP), which manages the environmental, health, and safety issues presented by unexploded ordnance (UXO), discards munitions, munitions constituents, and other munitions and explosives of concern (MEC) found on-base (Department of the Navy, 2009b).

Due to the historical use of NAS Patuxent River and procedures once used to treat and dispose of waste and munitions, the installation as a whole is at risk for environmental contamination. A variety of facility-wide, multi-site and single site environmental investigations have been conducted at NAS Patuxent River to identify and assess the presence of contaminants in areas of potential concern. The Station's Site Management Plan identifies 56 specific environmental restoration sites at NAS Patuxent River (Department of the Navy, 2009). Numerous additional investigations are underway or are anticipated to begin during Fiscal Year (FY) 2010 and FY 2011.

EUL Site 3

Upon review of the Site Management Plan, it has been determined that no documented ER sites are located within EUL Site 3 and no additional investigations are underway or anticipated within EUL Site 3 (Department of the Navy, 2009). Therefore, no environmental conditions, restrictions, or land use controls associated with the ER program would apply to EUL Site 3.

5.2 Munitions or Explosives of Concern

EUL Site 3

There are no documented MRP sites within EUL Site 3, and no explosives operations (e.g., munitions storage or handling) are known to have taken place within EUL Site 3. However, due to incomplete records and historical disposal practices at NAS Patuxent River, there is some potential to find MEC, including buried UXO, during earthwork at the Station (Simpson, 2010; NAVFACWASH, 2010). If MEC is discovered, earth disturbance in the vicinity of the discovery must cease and the location and description of the item(s) must be reported immediately to the Navy Project Manager.

5.3 Tanks/Petroleum Contamination

Storage tanks are classified based on their location and referred to as aboveground storage tanks (AST) and UST. Through the Resource Conservation and Recovery Act's (RCRA) Hazardous and Solid Waste Amendments, EPA established a federal program to regulate USTs containing petroleum and hazardous chemicals to limit corrosion and structural defects and thus minimize future tank leaks. In addition, the amendments directed EPA to set operating requirements and technical standards for tank design and installation, leak detection, spill and overfill control, corrective action, and tank closure. The UST program is implemented in Maryland by the Maryland Department of the Environment (MDE) (USEPA, 2010b).

Storage tanks at NAS Patuxent River are used to store a variety of petroleum products to support mission-related activities. NAS Patuxent River has an active Tank Management Plan that lists both ASTs and USTs currently in use, regulatory requirements for each storage tank, and ensures proper inspection and maintenance is performed (Naval Air Station Patuxent River, Maryland, 2008). Spills and resulting soil contamination from ASTs, USTs, or other sources of petroleum are documented and stored in a spill database specific to NAS Patuxent River and separate to the Tank Management Plan. The spill database contains a complete record of spills dating back to 1994.

EUL Site 3

One AST is located within EUL Site 3 adjacent to Building 1598. Tank # 1598 has a capacity of 250 gallons and contains #2 fuel oil for heating purposes (Naval Air Station Patuxent River, Maryland, 2008, NAVFACWASH, 2010). Tanks are inspected on a monthly basis. Additionally, there are no historical records of tanks formerly within this site. However, historical tank records may be incomplete, and there is some potential that undocumented tanks could be encountered during earthwork at the Station. Accordingly, there is also some potential for subsurface or groundwater contamination as a result of spills or leaks associated with any such undocumented tanks (Costanzo, 2010).

5.4 Hazardous Substances/Hazardous Waste

Hazardous substances and hazardous waste are defined by EPA as a material that exhibits a characteristic of ignitability, corrosivity, reactivity, or toxicity, or is specifically listed as a hazardous material. Several federal environmental policies list and require special handling procedures for certain hazardous substances, including the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), Toxic Substances Control Act (TSCA), and RCRA. CERCLA, better known as the Superfund, ensures liability and clean-up of abandoned hazardous material by responsible parties provides (USEPA, 2010d). EPA controls hazardous substances through the TSCA, which addresses chemical substances and mixtures whose manufacture, processing, distribution, use, or disposal may present an unreasonable risk of injury to health or the environment (Department of the Navy, 2009b). RCRA is broad in its regulatory management of solid and hazardous waste, including cleanup, through corrective action, of releases of hazardous waste at RCRA-regulated facilities, such as NAS Patuxent River. RCRA requires cradle-to-grave management of hazardous waste through a recordkeeping system that tracks shipments of hazardous waste. Hazardous waste treatment, storage, and disposal facilities are regulated through the issuance of operating permits. EPA has delegated the enforcement of RCRA in Maryland to MDE.

On-site accumulation times for hazardous waste at NAS Patuxent River are restricted to the applicable time frames referenced in 40 CFR 262.34 and other applicable Maryland laws or regulations. Non-explosive hazardous waste is transported to an approved, off-site hazardous waste treatment, storage, or disposal facility in accordance with Department of Transportation regulations. The hauling and disposal of demolition debris, including hazardous wastes containing lead, asbestos, and air conditioner refrigerant, is performed in compliance with local, state, and federal codes and requirements.

NAS Patuxent River is listed in the EDR as a Large Quantity Generator (LQG) of hazardous wastes (EDR, 2010c). There are 50 buildings designated as satellite accumulation areas for hazardous waste. Pursuant to 40 CFR 262.34(c)(1), these points may accumulate as much as 55 gallons (208 liters) of hazardous waste or one quart of acutely hazardous waste. Once they become full, containers at these satellite accumulation points must be transferred to one of the 38 active less-than-90-day central accumulation sites at NAS Patuxent River

EUL Site 3

Building 1598 (MWR Bath House) stores several hazardous substances for the operation and maintenance of the pool. Hazardous substances are stored in a secured closet on the north side of the building and include the following: soda ash, calcium chloride, High Test Hypochlorite (HTH), Clear Blue, Algaecide, and Chlor Sticks. All materials are properly stored and pose a minimal threat for potential contamination (Olson, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with hazardous waste would apply to EUL Site 3.

5.5 Solid/Bio-hazardous Waste

Solid waste is any garbage, refuse, sludge, or other discarded material including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, agricultural, or community activities (Department of the Navy, 2009b). Bio-hazardous waste, or medical waste, is defined as all waste generated at health care facilities, such as hospitals, clinics, physician's offices, dental practices, blood banks, and veterinary hospitals/clinics, as well as medical research facilities and laboratories. Solid and bio-hazardous waste generators, transporters, destruction facilities, and disposal facilities are subject to RCRA, and applicable state and local regulations and regulatory requirements that prohibit disposing of solid waste in open dumps and require bio-hazardous waste be treated and disposed of safely (USEPA, 2010c).

EUL Site 3

EUL Site 3 has not been associated with the generation, handling, or storage of bio-hazardous or solid waste (Olson, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with solid and bio-hazardous waste would apply to EUL Site 3.

5.6 Polychlorinated Biphenyls

The TSCA authorizes EPA to secure information on all new and existing chemical substances and to control any of these substances that could cause an unreasonable risk to public health or the environment. PCBs are regulated under Title I, Control of Toxic Substances, which includes provisions for testing chemical substances and mixtures, manufacturing and processing notices,

regulating hazardous chemicals substances and mixtures, managing imminent hazards, and reporting and retaining information.

EUL Site 3

PCBs were originally used at NAS Patuxent River in transformers located throughout the installation. However, all transformers containing PCBs were retrofitted or replaced in the 1970s and 1980s. No PCB program or reports have been developed due to the overall low risk of PCB equipment and exposure (Ichniowski, 2010). As a result, no environmental conditions, restrictions, or land use controls associated with PCBs would apply to EUL Site 3.

5.7 Asbestos-Containing Material

Asbestos abatement is regulated under the TSCA Title II, Asbestos Hazard Emergency Response, which was added by the Asbestos Hazard Emergency Response Act (AHERA). AHERA provides for the promulgation of federal regulations requiring inspection for asbestos and appropriate response actions in schools and mandates periodic reinspection. In addition, it requires EPA Administrators to determine "the extent of the danger to human health posed by asbestos in public and commercial buildings and the means to respond to any such danger" (Department of the Navy, 2009c).

Several of the buildings at NAS Patuxent River were built prior to health concerns related to asbestos-containing material (ACM) arose and regulations were implemented. An asbestos survey was completed for buildings suspected of having ACM during the early 1990s. A report was completed for each building and mitigation and clean-up efforts were completed thereafter (Apex Environmental, Inc., 1993). However, due to the likelihood that ACM remains present in many buildings, it should be assumed that all buildings subject to renovation or demolition contain ACM unless a report demonstrates otherwise.

EUL Site 3

Buildings 416 and 1598 are documented as having ACM. Examples of ACM include roof flashing tar, fire doors, floor tile, transite, insulation, joints, and various debris. A thorough report by Apex Environmental, Inc. was completed for each building that identified the location and type of ACM. A follow-up Asbestos Survey reassessed each building after mitigation and clean-up efforts, classifying the ACM by its condition of significantly damaged, abated, or non-friable, with the vast majority classified as abated or non-friable. The ACM found to still be significantly damaged was determined to be of "low-risk" (Apex Environmental, Inc. 1993, EDR, 2010a; EDR, 2010b; NAVFACWASH, 2010). No further document action has been taken.

Prior to the demolition of existing EUL Site 3 facilities, the contractor must follow the Unified Facilities Guide Specifications, Section 13281N, "Engineering Control of Asbestos Containing Materials" for actions involving handling, demolition, or disposal of ACM. The contractor and the NAS Patuxent Environmental and Safety Offices will be responsible for work plan development, state/federal agency notification, execution of ACM abatement, waste management, and manifest documentation in accordance with current environmental and safety procedures (O'Connell, 2010; Morley, 2010).

5.8 Lead-based Paint

The use of toxic lead-based paint (LBP) was banned in 1977 by the Consumer Product Safety Commission. The MDE has established the Lead Poisoning Prevent Program to enhance citizen safety and prevent exposure to LBP (MDE, 2010b).

Before it was removed from the market, LBP was commonly used on the exterior and interior walls during the renovation or construction of buildings at NAS Patuxent River. Many of these buildings remain today. No comprehensive survey of LBP containing-buildings has been completed for NAS Patuxent River. Due to the age of many buildings at NAS Patuxent River and lack of LBP mitigation or clean-up efforts, it is suspected that buildings built before 1978 contain LBP unless documentation demonstrates otherwise.

EUL Site 3

Buildings 416 and 419 were constructed in 1943, therefore it must be assumed that EUL Site 3 has LBP present (EDR, 2010a; EDR, 2010b; NAVFACWASH, 2010). No sampling data, comprehensive LBP reports, or documentation of mitigation or clean-up efforts exists.

Prior to any actions affecting Building 416 and 419, a survey for LBP must be performed for the building and its associated infrastructure. If this survey determines that LBP is present, the contractor must follow the Unified Facilities Guide Specifications, Section 13283N, "Removal/Control and Disposal of Paint with Lead" for actions involving the handling, demolition, or disposal of lead-based paint (O'Connell, J. 2010).

5.9 Pesticides and Herbicides

NAS Patuxent maintains an Integrated Pest Management Plan (IPMP), which is a long-range planning and operational tool that establishes the strategy and methods for conducting a safe, effective, and environmentally sound integrated pest management program. The IPMP covers all pest management and pesticide-related activities conducted within all areas of the installation. The IPMP was developed in accordance with Navy guidance (e.g., OPNAVINST 6250.4) and applicable laws and regulations, such as the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). FIFRA provides the basis for regulation, sale, distribution and use of pesticides in the US, and addresses applicator certification requirements, record keeping, and penalties for pesticide misuse (NAVFAC, Atlantic Division, 2009a).

EUL Site 3

There are no documented invasive species requiring the use of pesticides or herbicides on EUL Site 3. The playground, pool, and community center are inspected for pests on a monthly or quarterly basis by Preventative Medicine. If pests are found, an MWR contractor will treat pests with pesticides if necessary (NAVFAC, Atlantic Division, 2009a; NAVFACWASH, 2010; Smith, 2010a; Rambo, 2010).

5.10 Radon/Radiological Material

Indoor radon concentrations are regulated under TSCA Title III (Indoor Radon Abatement). In response, the Navy established the Radon Assessment and Mitigation Program (NAVRAMP)

which identifies, assesses, and mitigates the infiltration of radon into existing Navy-occupied buildings and incorporates preventive practices in the design and construction of new buildings.

EUL Site 3

St. Mary's County is classified as Zone 2 by the EPA, indicating a moderate potential for elevated indoor radon levels. However, a base-wide survey of radon levels was completed in the 1970s and 1980s. The survey found no radon levels of concern; therefore, no radon program is established at the Station (Ichniowski, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with elevated radon levels would apply to EUL Site 3.

5.11 Water Quality

5.11.1 *Surface Water*

Important aquatic resources at NAS Patuxent include the Patuxent River, Chesapeake Bay, Pine Hill Run, Goose Creek, Pearson Creek, Harper's Creek, and six freshwater ponds. These open water areas range from brackish to freshwater systems and support a variety of fish and wildlife resources. NAS Patuxent is situated on a peninsula at the mouth of the Patuxent River. Of NAS Patuxent's approximately 6,400 acres (25.9 square kilometers), 1,041 acres (4.2 square kilometers) are open water or wetland (discussed in Section 5.12.2 (Wetlands)). This acreage is comprised of six freshwater ponds; several perennial and intermittent streams; four estuaries; two seaplane basins; a partially enclosed sea-wall; and numerous saline, freshwater tidal, and nontidal marshes, in addition to forested and scrub/shrub wetlands (Department of the Navy, 2002).

NAS Patuxent shares boundaries with two significant resources – the Chesapeake Bay and the Patuxent River. The Chesapeake Bay, with its associated salt marshes, is the largest estuary in North America and one of the most productive in the world. Its bounty of finfish, shellfish, crabs, and waterfowl is world-renowned. The Patuxent River is one of the rivers initially designated as part of the Maryland State Wild and Scenic Rivers Program. In addition, while no Maryland river is on the National Wild and Scenic Rivers System, Patuxent River is listed in the Nationwide Rivers Inventory as having the significant resource values required for potential inclusion (Department of the Navy, 2002).

NAS Patuxent contains many miles of intermittent and perennial headwater streams. Streams usually occupy well-defined channels where topographic gradients are steeper or where they have been channeled. In the level, low-lying areas, streams often occupy split or braided channels. Those streams occurring in densely forested areas have not all been detected by photo interpretation or mapped.

EUL Site 3

There are no surface waters at EUL Site 3 (Department of the Navy, 2002). Therefore, no environmental conditions, restrictions, or land use controls associated with the presence of surface water would apply to EUL Site 3.

5.11.2 Stormwater

Stormwater is generated when precipitation runs off from land and impervious areas such as paved streets, parking lots, and building rooftops. Stormwater runoff can collect pollutants such as oil and grease, chemicals, nutrients, metals, and bacteria as it travels across land, and it also causes soil erosion when traveling at velocities sufficient to carry sediment particles. The Clean Water Act (CWA) regulates both direct and indirect discharges of “priority” pollutants that are often conveyed by stormwater, such as total suspended solids, fecal coliform, and oil and grease. Stormwater is typically managed using structural or nonstructural Best Management Practices (BMPs). Structural BMPs include control systems such as infiltration devices, ponds, filters and constructed wetlands, while nonstructural BMPs include low impact development (LID) practices and management measures (USEPA, 2004).

EUL Site 3

Stormwater currently flows across pervious surfaces and vegetated areas to the northern boundary of the site into a drainage ditch. Any new development within EUL Site 3 must be designed and executed in accordance with applicable requirements of the following standards and regulations to ensure that stormwater impacts are minimized. Pursuant to Section 438 of the Energy Independence and Security Act (EISA) of 2007, development with a footprint greater than 5,000 SF (465 square meters) must maintain or restore to the maximum extent practicable pre-development hydrology with respect to temperature, rate, volume, and duration of flow (U.S. Congress, 2007). Pursuant to the Navy’s LID policy, the Navy sets a goal of no net increase in stormwater volume and sediment or nutrient loading from construction projects (Department of the Navy, 2007). Pursuant to Maryland’s Stormwater Management Act of 2007, development with a footprint greater than 5,000 SF must implement environmental site design (ESD), to the maximum extent practicable (MEP) in accordance with Section 4.0 Stormwater Management Criteria of the 2000 Maryland Stormwater Design Manual. Additionally, re-development with a footprint greater than 5,000 SF must implement ESD to the MEP to provide water quality treatment for a minimum of 50 percent of the existing impervious area within the limits of disturbance. For additional information, please reference the 2000 Maryland Stormwater Design Manual (MDE, 2009; MDE, 2010).

5.11.3 Groundwater

The Safe Drinking Water Act (SDWA) was originally passed by Congress in 1974 to protect public health by regulating the nation’s public drinking water supply. The law was amended in 1986 and 1996 and requires the protection of drinking water and its sources – rivers, lakes, reservoirs, springs, and groundwater wells. SDWA authorizes the US EPA to set national health-based standards for drinking water to protect against both naturally-occurring and man-made contaminants that may be found in drinking water (USEPA, 2010f).

The drinking water at NAS Patuxent is pumped from the Piney Point/Nanjemoy, Aquia, and Patapso aquifers – groundwater sources below St. Mary’s County. The Compliance Division of the NAVFACWASH Public Works Environmental Division at NAS Patuxent River is responsible for both groundwater monitoring and protection of groundwater well locations on the Station. However, to date, no formal Source Water or Wellhead Protection Plan has been written (NAVFAC, Atlantic Division, 2009b).

EUL Site 3

There are no known groundwater wells present within EUL Site 3; therefore, there is no site specific information on the groundwater.

5.12 Natural Resources

5.12.1 *Forests*

Forested areas account for approximately 42 percent (2,817 acres, 11.6 square kilometers) of the land cover at NAS Patuxent. The forests on NAS Patuxent are presented in four broad classifications of forest types: bottomland pine; upland pine; bottomland hardwood; and upland hardwood (Department of the Navy, 2002).

Pine forests are defined as areas dominated mainly by trees of the genus *Pinus*, consisting of needle-leaved evergreen species. Upland pine forest accounts for 7 percent (207 acres, 837,700 square meters) of the forests encountered on NAS Patuxent. Bottomland pine forest consists of needle-leaved evergreen species in areas where the water table is at a depth sufficient to influence the development of oxygen-reducing conditions and create hydric soil and hydrophytic vegetation characteristics. This forest type accounts for 1 percent (24 acres, 97,100 square meters) of the forests encountered on NAS Patuxent. Upland hardwood forests consist of hardwood tree species in areas where the water table is below a depth where hydric characteristics develop in the soils and plant community. This forest type accounts for 21 percent (581 acres, 2,351,000 square meters) of the forests encountered on NAS Patuxent. Pine species also occur in combination with hardwood tree species to form mixed forest types. This mixed forest type accounts for 21% (580 acres, 2,350,200 square meters) of the forests encountered on NAS Patuxent.

NAS Patuxent is an important migratory bird area as a result of extensive forest stands throughout the base. The Migratory Bird Treaty Act (MBTA) protects migratory birds and their habitats, and establishes a permitting process for legal taking. Except as permitted, actions of the Navy may not result in pursuit, hunting, taking, capture, killing, possession, or transportation of any migratory bird, bird part, nest, or egg thereof.

The potential for commercial forest products such as poletimber, sawtimber, pulpwood, and firewood is an added economic benefit afforded by the forested areas on NAS Patuxent. All merchantable timber that is cut on NAS Patuxent is considered Navy Real Property and must be disposed of properly, with appropriate disbursement to the Navy Forestry Account.

The most important management prescription proposed for wildlife habitat concerns is the designation of a large, contiguous forest block on the south side of the Station. This forested area will benefit many rare, threatened, and endangered species that are known to and/or have the potential to inhabit the region. The most important indicator of the success of the forest management prescription for the maintenance and restoration of critical ecosystem functions is the monitoring of Forest Interior Dwelling Species (FIDS). These species are considered "area sensitive" species and require some critical mass of contiguous forest type in order to survive. The monitoring of populations of these species is crucial in determining the success of the forest block (Department of the Navy, 2002).

EUL Site 3

There are no documented contiguous forests within EUL Site 3 (Navy Enhanced Use Lease Patuxent River, 2010; NAVFACWASH, 2010; Department of the Navy, 2002). Therefore, no environmental conditions, restrictions, or land use controls associated with forests would apply to EUL Site 3.

5.12.2 Wetlands

The United States Army Corps of Engineers (USACE) and EPA define jurisdictional wetlands as areas that are inundated or saturated by surface water or groundwater frequently and long enough to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands provide important plant and wildlife habitat and serve as buffers and filters essential for maintaining the water quality of nearby surface waters.

The wetlands at NAS Patuxent River are protected by Section 404 of the CWA, Executive Order (EO) 11990 (Wetland Protection), and applicable state regulations, including the Maryland Nontidal Wetlands Protection Act, Maryland Tidal Wetlands Act, and the Waterway and 100-Year Floodplain Construction Regulations. Section 404 of the CWA prohibits the discharge of dredged or fill material into wetlands or other waters of the United States if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's water would be significantly degraded. Regulated activities are controlled by a permit review process administered by the USACE (USEPA, 2010e).

EO 11990 was implemented in 1977 to protect wetlands and their associated ecosystem services. This EO directs each federal agency to avoid undertaking or providing assistance for new construction located in wetlands unless the head of the agency finds that 1) there is no practicable alternative to such construction, and 2) all practicable measures will be taken to minimize impacts to the wetlands. In addition, the Navy has a “no net loss” policy requiring the replacement of any wetlands destroyed or eliminated through a project.

To protect jurisdictional wetlands, MDE requires maintaining an area surrounding a wetland called a buffer. Activities that may disturb or occur within a non-tidal or tidal wetland or surrounding buffer are regulated under COMAR 26.23 and COMAR 26.24, respectively. According to COMAR 26.23.01, a buffer is a regulated area, 25 feet in width, surrounding a nontidal wetland, and measured from the outer edge of the non-tidal wetland. MDE requires the action proponent to obtain a Non-tidal Wetlands and Waterways Permit for any activity that alters a non-tidal wetland or its 25-foot buffer.

The Chesapeake Bay Critical Area Commission requires maintaining a 100-foot buffer around tidal wetlands and streams to improve runoff water quality and reduce the amounts of toxic substances entering tidal waters (Critical Area Commission, 2008). The Navy maintains these areas at NAS Patuxent by avoiding removal of trees within 100-foot riparian buffers wherever possible (U.S. Department of the Navy, 2008).

Wetland delineations for NAS Patuxent were performed with data collection between June and October 1995. This technique produced a wetland delineation that was conservative and probably included some upland areas. These delineations were not flagged or surveyed in the

field; therefore they should be considered rough estimates (Rambo, 2010; Smith, 2010a; Department of the Navy, 2002).

EUL Site 3

According to the NAS Patuxent River GIS, forested and scrub/shrub wetlands are present along the EUL Site 3 southeast boundary. Prior to development of EUL Site 3, consultation with NAS Patuxent River Environmental Division personnel is required to determine the need for a site-specific wetland survey.

5.12.3 Floodplains

A floodplain is the area along or adjacent to a stream or a body of water that is capable of storing or conveying floodwaters. Floodplains perform important natural functions, including moderating peak flows, maintaining water quality, recharging groundwater, and preventing erosion. In addition, floodplains provide wildlife habitat, recreational opportunities, and aesthetic benefits. To protect floodplains and minimize future flood damage, EO 11988 Floodplain Management restricts development within the 100-year floodplain. A 100-year floodplain is defined as an area that is subject to a one-percent or greater chance of flooding in any given year. Under EO 11988, all federal agencies must 1) determine if any of their actions would occur within a floodplain, 2) evaluate the potential effects of these actions, and 3) analyze alternatives to these actions.

EUL Site 3

There are no floodplains within EUL Site 3 (Department of the Navy, 2002). Therefore, no environmental conditions, restrictions, or land use controls associated with the presence of floodplains would apply to EUL Site 3.

5.12.4 Coastal Zone

Maryland's Coastal Zone Management (CZM) Program was created in response to the passage of the Federal Coastal Zone Management Act of 1972. The goal of this program is to "preserve, protect, develop and, where possible, restore our coastal resources." Maryland's CZM Program was created in 1978 and is a network of state laws and policies designed to protect coastal and marine resources. Maryland's coastal zone includes 3,190 miles of coast in 16 counties and Baltimore City (MDNR, 2002). This area includes the Chesapeake Bay, coastal bays, and the Atlantic Ocean, as well as the towns, cities, and counties that have jurisdiction over the coastline. Maryland's coastal zone encompasses two thirds of the state's land area and is home to greater than 65 percent of the state's residents (MDNR, 2002). Federally controlled lands are excluded from the coastal zone per 16 U.S.C. 1453, Section 304, Paragraph (1). However, the Coastal Zone Management Act requires all federal activities that could affect land, water, or natural resources on the coastal zone to be consistent to the maximum extent practicable with the enforceable policies of the approved state CZM program. That is, even if the action occurs on federal land (excluded from the coastal zone), the action must be consistent to the maximum extent practicable with the state CZM program if it affects coastal resources.

As previously mentioned in Section 5.11.1 (Surface Water), the Chesapeake Bay Critical Area Law regulates all lands under the tidal influence of the Chesapeake Bay and its tributaries up to

the head of the tide, as well as wetlands connected to these waters. It also regulates land within a 1,000-foot boundary inland from that line. The Critical Area Law is included within Maryland's Coastal Zone Management Program. Any disturbance within the Critical Area would require consultation with the Chesapeake Bay Critical Area Commission.

EUL Site 3

EUL Site development will not impact the Maryland Coastal Zone or Critical Area. Therefore, no environmental conditions, restrictions, or land use controls associated with the Maryland Coastal Zone or Critical Area would apply to EUL Site 3.

5.12.5 Essential Fish Habitat

Fish and invertebrate species and their habitat are regulated and protected by several federal laws. The most notable of the federal laws is the Fishery Conservation and Management Act of 1976, which was reauthorized and amended by the Sustainable Fisheries Act in 1996 and is now popularly designated as the Magnuson-Stevens Fishery Conservation and Management Act. These acts mandated habitat conservation for federally managed fish species via the conservation tool known as essential fish habitat (EFH). The EFH mandate required that regional fishery management councils, through Federal Fishery Management Plans, describe and identify EFH for each federally managed species, minimize to the extent practicable any adverse effect on such habitat caused by fishing, and identify other actions to encourage the conservation and enhancement of such habitats. EFH is defined by Congress for managed species as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (16 U.S.C. 1802[10]). Within the vicinity of the NAS Patuxent River (upper Chesapeake Bay), EFH has been designated for 11 of the 23 EFH fish species found in the Chesapeake Bay.

EUL Site 3

There is no existing essential fish habitat within EUL Site 3 (Department of the Navy, 2002). Therefore, no environmental conditions, restrictions, or land use controls associated with the fish habitat would apply to EUL Site 3.

5.12.6 Threatened or Endangered Species

The Endangered Species Act of 1973 (ESA) protects federally-threatened, endangered, and candidate species of fish, wildlife, and plants and their designated critical habitats. Under this law, no federal action is allowed to jeopardize the continued existence of an endangered or threatened species. ESA also requires consultation with the United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (now called National Oceanographic & Atmospheric Administration (NOAA) Fisheries Service) and the preparation of a biological assessment when such species are present in an area that is affected by government activities (USFWS, 2010).

EUL Site 3

Based on previous surveys and discussions with Environmental Division personnel, there are no federally- or state-listed threatened or endangered species at EUL Site 3 (Smith, 2010a; Smith, 2010b; Department of the Navy, 2002). Therefore, no environmental conditions, restrictions, or land use controls associated with the presence of threatened or endangered species would apply to EUL Site 3.

5.13 Cultural Resources

The National Historic Preservation Act of 1966 (NHPA), enacted under 16 United States Code (U.S.C.) 470, provides for the National Register of Historic Places (the Register), defines National Historic Landmarks, provides for the designation of a State Historic Preservation Officer (SHPO), and establishes the Advisory Council on Historic Preservation (ACHP). The Register lists sites, districts, buildings, structures, and objects of significance in American history, architecture, archeology, engineering, and culture. These resources may be of local, State, or national significance. Section 106 of the NHPA requires federal agencies to consider the effects of undertakings (i.e., actions) on any resource that is included or eligible for inclusion in the Register, and to afford the ACHP a reasonable opportunity to comment on such undertakings. In Maryland, the Maryland Historical Trust (a division of the Maryland Department of Planning) serves as the SHPO and also participates in Section 106 consultations. Pursuant to OPNAVINST 5090.1C, Chapter 5-5, an Environmental Assessment must be prepared for any proposed action that would have an adverse effect on resources listed or determined to be eligible for listing in the Register.

Section 110 of the NHPA requires federal agencies to establish a preservation program for the identification, evaluation, nomination (for the Register), and protection of historic properties. To this end, the Navy performs surveys and investigations to identify any historic properties under its jurisdiction.

5.13.1 Historic Architectural Resources

The most recent architectural and historic landscape evaluation of NAS Patuxent was performed in October 2009 (NAVFACWASH, 2009; NAVFACWASH, 2010). The surveys identified architectural resources and determined if resources were eligible for listing on the Register.

EUL Site 3

No historic buildings or landscapes have been identified within EUL Site 3 (Smolek, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with known historic architectural resources would apply to EUL Site 3. However, once the lessee provides information about the development plans, the Navy will pursue consultation with SHPO to seek concurrence that there is no adverse effect to historic architectural resources.

5.13.2 Archeological Resources

Archeological resources are material remains of past life or activities (Reinke & Swartz, 1999). Some examples of archeological resources include pottery, basketry, bottles, weapons, tools, rock paintings, rock carvings, and gravesites.

The Native American Graves Protection and Repatriation Act of 1990 (NAGPRA), enacted under 25 U.S.C. 3001, prohibits the intentional removal of certain types of Native American cultural items from federal or tribal lands. Removal of cultural items may be permitted under an Archeological Resource Protection Act (ARPA) permit, which includes authorization and a written agreement between the federal agency and an appropriate repository that will house and curate the collection recovered from the project, and in consultation with the appropriate Native American groups (USDI, 2010). NAGPRA provides for the return of burial remains, associated funerary objects, sacred objects, and objects of cultural patrimony to the appropriate tribes. It established Native American ownership of human remains and associated artifacts discovered on federal lands after the date of enactment (USDI, 2010).

EUL Site 3

A Phase I archeological survey, which locates archeological resources, has been performed at NAS Patuxent to make generalizations about the type and distribution of archeological properties that may be present. This survey indicated that no potentially-significant resources are known to be present at EUL Site 3 (Smolek, 2010). However, once the lessee provides information about the development plans, the Navy will pursue consultation with SHPO to seek concurrence that there is no adverse effect to archaeological resources.

5.14 Air Quality

Air quality is regulated under the authority of Title I, Part A, Section 109 of the Clean Air Act (CAA). EPA has established health-based National Ambient Air Quality Standards (NAAQS) for the criteria pollutants carbon monoxide, nitrogen dioxide, ozone, particulate matter, lead, and sulfur dioxide. To monitor and meet the NAAQS, the CAA divides the United States into geographic areas called “air quality control regions” (AQCRs). St. Mary’s County, where NAS Patuxent River is located, is a designated AQCR. An AQCR in which levels of a criteria air pollutant meet the health-based NAAQS is defined as an *attainment* area for the pollutant, while an area that does not meet the NAAQS is designated a *nonattainment* area for the pollutant. An area that was once designated a nonattainment area but was later reclassified as an attainment area is known as a *maintenance* area. An area may have an acceptable level for one criteria air pollutant but may have unacceptable levels for other criteria air pollutants. Thus, an area could be attainment, maintenance, and nonattainment at the same time for different pollutants.

In addition to NAAQS requirements, federal agencies must obtain permits to operate equipment that generates air emissions. Title V of the CAA establishes an operating permit program that requires all air quality requirements for a source to be combined into one comprehensive permit document. All major sources of air pollutants are required to apply for a Title V permit, which is valid for five (5) years. In addition to complying with the Title V operating permit, the CAA requires that federal agencies comply with state and local air quality requirements in the same manner as any non-governmental entity. NAS Patuxent River has received a Title V operating permit that includes 126 sources of air emissions, in addition to various insignificant emission units (Naval Air Station Patuxent River, Maryland, 2010).

Pursuant to COMAR 26.11.02.09, any new source of emissions must be issued a Permit to Construct (PTC) by MDE prior to installation. A PTC allows the installation of the unit and provides operating requirements that apply until the unit is incorporated into the next renewal of the Title V operating permit.

EUL Site 3

The AQCR of St. Mary's County is an attainment area for all criteria pollutants of the CAA. The most recent Title V operating permit for NAS Patuxent River is effective on July 1, 2010 and expires June 30, 2015. There are no sources of air emissions identified in the Title V permit at EUL Site 3 and no PTCs have been issued for construction of any emission units (Ichniowski, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with air emissions would apply to EUL Site 3.

5.15 Flight Operation Noise & Safety

In the early 1970s, the DoD established the Air Installations Compatibility Use Zone (AICUZ) Program to balance the need for aircraft operations and community concerns over aircraft noise and accident potential. The objectives of the AICUZ program, according to the Chief of Naval Operations Instruction (OPNAVINST 11010.36C), are the following: 1) to protect the health, safety, and welfare of civilians and military personnel by encouraging land use which is compatible with aircraft operations; 2) to protect the US Department of Navy and Marine Corps installation investments by safeguarding the installation's operational capabilities; 3) to reduce noise impacts caused by aircraft operations while meeting operational, training, and flight safety requirements, both on and in the vicinity of air installations; and 4) to inform the public about the AICUZ program and seek cooperative efforts to minimize noise and aircraft accident potential impacts by promoting compatible development in the vicinity of military air installations (Department of the Navy, 2008). Accident potential zones (APZ) and noise abatement areas are present at and adjacent to air operation areas (e.g., airfields, runways). APZs describe the probably impact area if an accident were to occur. Noise abatement areas are defined by noise contours that are developed by a computerized simulation of aircraft activity at the installation and reflect site-specific operational data (e.g., flight tracks, type and mix of aircraft, frequency and times of operations) (Department of the Navy, 2008).

EUL Site 3

There are no APZ present at EUL Site 3 (NAVFACWASH, 2010; Department of the Navy, 2008). Land use controls associated with APZ do not apply within EUL Site 3. EUL Site 3 is within Noise Zone 2 (65-69 decibels). Development within Noise Zone 2 is compatible with all land uses (e.g., commercial, recreational, industrial), except residential (Department of the Navy, 2008).

5.16 Notices of Violation*EUL Site 3*

There are no documented Notices of Violations (NOVs) other than those pertaining to administrative concerns at NAS Patuxent River (Smith, 2010a; Gray, 2010b). As a result, no environmental conditions, restrictions, or land use controls associated with NOVs would apply to EUL Site 3.

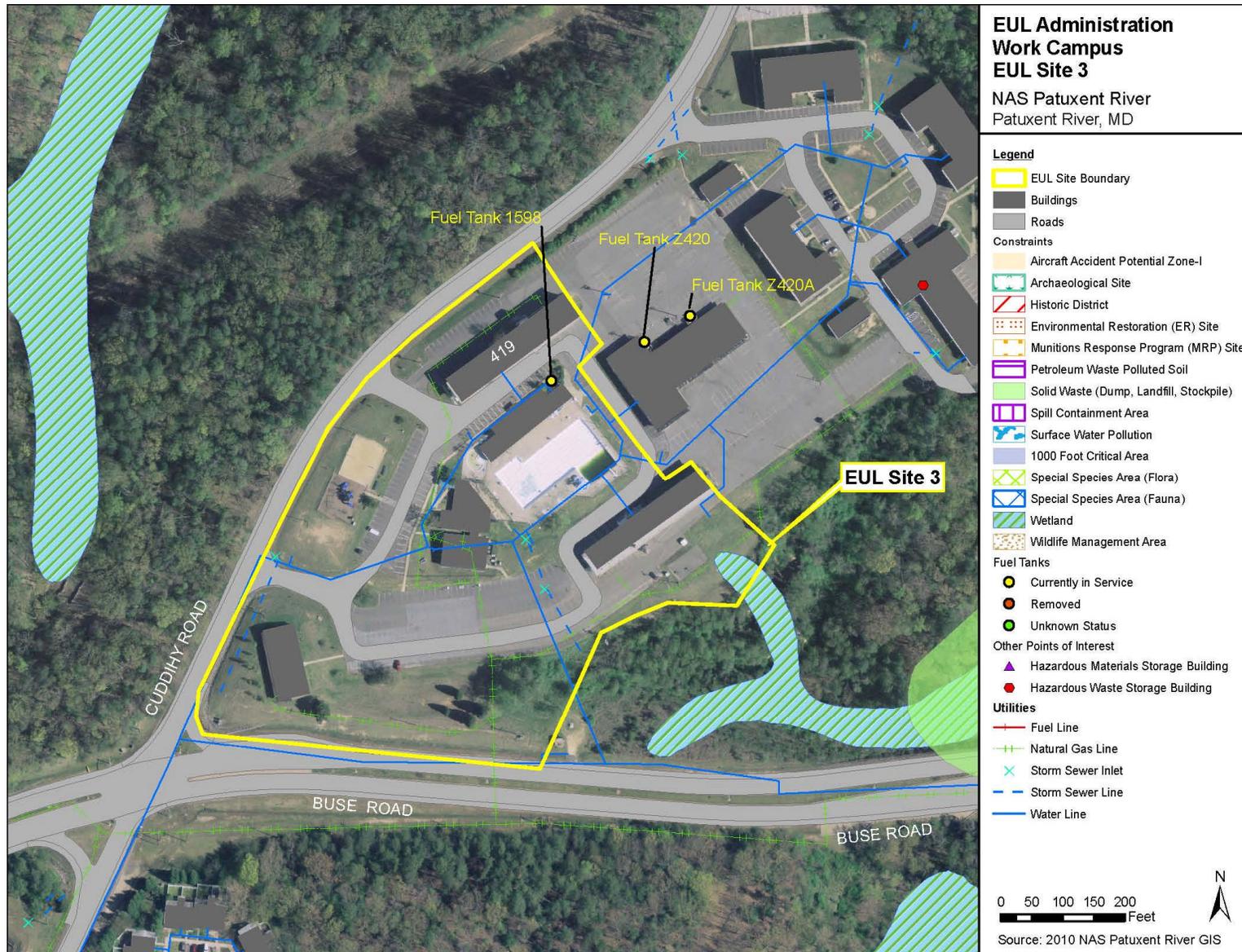


Figure 5-1. Site Conditions – EUL Site 3

6. ENVIRONMENTAL CONDITIONS OF ADJACENT PROPERTY

This ECP study evaluated the adjacent property with respect to all of the environmental considerations that are discussed in Section 5 (Environmental Conditions of Subject Property). This section presents only those adjacent property findings that could potentially affect development or use of EUL Site 3.

All adjoining properties of EUL Site 3 are within the boundaries of NAS Patuxent River. The site is bounded by Cuddihy Road to the west, developed land to the north, forested area to the east and Buse Road to the south.

Environmental Restoration

Approximately a quarter-mile (0.40 kilometers) to the southeast lays ER Site #2 (Disposal Site at Pond #1). A Naval Assessment and Control of Installation Pollutants Program confirmation study was conducted at ER Site #2 between 1985 and 1987. The results showed elevated concentrations of semi-volatile organic compounds (SVOCs) and pesticides in sediment and fish samples. An Interim Remedial Investigation (IRI) was conducted at ER Site #2 in 1991, confirming low concentrations of metals, a PCB compound, and several pesticides in sediment samples. Low concentrations of metals and a pesticide were also found in fish samples. A Remedial Investigation/Feasibility Study (RI/FS) is scheduled for 2011 to further characterize the site. The Agency for Toxic Substances and Disease Registry (ATSDR) conducted health assessments at NAS Patuxent River in 1995 and 1996 and concluded that fish consumption from Pond #1 should be limited to 19 meals per year for 7 years until additional data is available for risk assessment (Department of the Navy, 2009; NAVFACWASH, 2010).

ER Sites #2 is located at a lower elevation than EUL Site 3. Due to the natural flow of groundwater from high to low, there is a minimal risk of contamination to EUL Site 3 from ER Site #2 located in the adjacent property (Simpson, 2010c).

Tanks/Petroleum Contamination

Two petroleum ASTs are located adjacent to EUL Site 3 (see Table 6-1). They both contain diesel fuel for use in back-up energy generation. No documented leaks or spills have been reported in regards to these tanks, which are inspected on a monthly basis (Costanzo, G. 2010). However, historical tank records may be incomplete, and there is some potential for adjacent subsurface or groundwater contamination as a result of spills or leaks associated with any such undocumented tanks (Costanzo, G. 2010).

Table 6-1. Adjacent Area Aboveground Storage Tanks

Tank #	Size (ga)	Contents	Location
Z0420A	100	Diesel	Built-in to generator unit, adjacent to Building 420
Z0420B	500	Diesel	Adjoining back-up generator, adjacent to Building 420

Solid/Bio-Hazardous Waste

Adjacent to east side of EUL Site 3 is an unconfirmed area identified by the GIS data as a Solid Waste Dump Area. This area includes ER Site #2 (Disposal Site at Pond #1) and extends to within 300 feet of EUL Site 3 (see Figure 5-1) (NAVFACWASH, 2010). There are no historical records for the Solid Waste Dump Area delineated in GIS.

Pesticides and Herbicides

There are documented invasive species present adjacent to EUL Site 3; however, no pesticides or herbicides treatment has occurred. Therefore, no environmental conditions, restrictions, or land use controls associated with pesticide or herbicide contamination would apply to areas adjacent to EUL Site 3.

Wetlands

Shrub/scrub wetlands are found adjacent to EUL Site 3, approximately 200 feet southeast of the site (NAVFACWASH, 2010). All wetlands adjacent to EUL Site 3 should be flagged and surveyed according to general management recommendations (GMR) in order to determine wetland delineation. If development occurs within a 100 ft (30.48 m) buffer of any wetlands, they must be delineated according to CWA Section 404. Sediment/erosion control and stormwater measures must be implemented as necessary to prevent any sediment transport into wetlands. These plans must be reviewed and approved by the MDE for projects exceeding 5,000 SF (464.5 square meters) or 100 cubic yards of disturbance. MDE requires the action proponent to obtain a Non-tidal Wetlands and Waterways Permit for any activity that alters a non-tidal wetland or its 25 ft (7.62 m) buffer (MDE, 2009; MDE, 2010; U.S. Congress, 2007).

7. CONCLUSIONS

Findings of this ECP report for EUL Site 3 and its adjacent properties are based on an extensive record search of available documents, a thorough review of the applicable and relevant documents, analysis of the Station's GIS, two visual surveys conducted on May 18, 2010 and June 1, 2010, and on-site interviews with personnel knowledgeable about the history of EUL Site 3. Findings related to the areas of environmental considerations that were evaluated during the ECP study include:

- Environmental Restoration – No documented ER sites are located within EUL Site 3 and no additional investigations are underway or anticipated. ER Site #2 is adjacent to EUL Site 3. However, there is minimal risk of contamination from ER Site #2 due to the natural flow of groundwater from high to low.
- Munitions or Explosives of Concern – There are no documented MRP sites within EUL Site 3, and no explosives operations (e.g., munitions storage or handling) are known to have taken place within EUL Site 3. However, due to incomplete records and historical disposal practices at NAS Patuxent River, there is some potential to find MEC, including buried UXO, during earthwork at the Station. If MEC is discovered, earth disturbance in the vicinity of the discovery must cease and the location and description of the item(s) must be reported immediately to the Navy Project Manager.
- Tanks/Petroleum Contamination – One AST is located within the site and two AST's are located adjacent to EUL Site 3. There are no historical records of tanks formerly within this site. However, historical tank records may be incomplete, and there is some potential that undocumented tanks could be encountered during earthwork at the Station. Accordingly, there is also some potential for subsurface or groundwater contamination as a result of spills or leaks associated with any such undocumented tanks.
- Hazardous Substances/Waste Management – Building 1598 (MWR Bath House) stores several hazardous substances for the operation and maintenance of the pool. All materials are properly stored and pose a minimal threat for potential contamination.
- Solid/Bio-hazardous Waste – EUL Site 3 has not been associated with the generation, handling, or storage of bio-hazardous or solid waste. However, adjacent to the east side of EUL Site 3 is an unconfirmed area identified by the GIS as a Solid Waste Dump Area.
- Polychlorinated Biphenyls – All transformers containing PCBs were retrofitted or replaced in the 1970s-1980s. No PCB program or reports have been developed due to the overall low risk of PCB equipment and exposure.
- Asbestos-Containing Material – Buildings 416 and 1598 are documented as having ACM.

- Lead-Based Paint – Buildings 416 and 419 were constructed in 1943, therefore it must be assumed that EUL Site 3 has LBP present.
- Pesticides and Herbicides – There are no documented invasive species requiring the use of pesticides or herbicides on EUL Site 3. The playground, pool, and community center are inspected for pests on a monthly or quarterly basis and treated if necessary.
- Radon/Radiological Material – A base-wide survey of radon levels was completed in the 1970's and 1980's. The survey found no radon levels of concern.
- Surface Water – There are no surface waters at EUL Site 3.
- Stormwater – Stormwater currently flows across pervious surfaces and vegetated areas to the northern boundary of the site into a drainage ditch. Any new development within EUL Site 3 must be designed and executed in accordance with applicable requirements of the following standards and regulations to ensure that stormwater impacts are minimized: Section 438 of EISA of 2007; Navy's LID policy; and Maryland's Stormwater Management Act of 2007.
- Groundwater – There are no known groundwater wells present within EUL Site 3; therefore, there is no site specific information on the groundwater. It is unknown whether contaminated subsurface soil or groundwater may be present as a result of past land use.
- Forests – There are no contiguous forest within EUL Site 3.
- Wetlands – There are no documented wetlands within EUL Site 3. However, shrub/scrub wetlands are found adjacent to EUL site 3 along the southeastern boundary of the site. Prior to development of EUL Site 3, consultation with NAS Patuxent River Environmental Division personnel is required to determine the need for a site-specific wetland survey.
- Floodplains – There are no floodplains within EUL Site 3.
- Coastal Zone – Development within EUL Site 3 will not impact the Maryland Coastal Zone or Critical Area.
- Essential Fish Habitat – There is no essential fish habitat within EUL Site 3.
- Threatened or Endangered Species – There are no federally- or state-listed threatened or endangered species at EUL Site 3.
- Historic Architectural Resources – No historic buildings or landscapes have been identified within EUL Site 3. However, once the lessee provides information about the development plans, the Navy will pursue consultation with SHPO to seek concurrence that there is no adverse effect to historic architectural resources.

- Archeological Resources – A Phase I survey has been performed, indicating that no potentially-significant archeological resources are known to be present at EUL Site 3. However, once the lessee provides information about the development plans, the Navy will pursue consultation with SHPO to seek concurrence that there is no adverse effect to archaeological resources.
- Air Quality – There are no sources of air emissions identified in the NAS Patuxent River Title V permit and no PTCs have been issued for construction of any emission units at EUL Site 3.
- Noise & Safety – No land use controls associated with APZ apply. EUL Site 3 is within Noise Zone 2, which is compatible with all land uses except residential.
- Notices of Violation - There are no documented NOV's other than those pertaining to administrative concerns at NAS Patuxent.

In accordance with DoD policy regarding the classification of properties that may exhibit hazardous substance or petroleum contamination (please reference Deputy Under Secretary of Defense Goodman Memorandum dated 21 October 1996), EUL Site 3 has been classified as Category 7. This category applies to properties that have not been evaluated or require additional evaluation. While no releases, disposals, or mitigation of hazardous substances have been documented within EUL Site 3, there is reason to suspect contamination. Possible contamination concerns at EUL Site 3 include groundwater contamination from nearby ER sites. Further evaluation of these contamination concerns should be performed prior to execution of any property transfer involving EUL Site 3.

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9. CERTIFICATION

Based on records reviews, site inspections, and interviews, the environmental professional(s) certify that the environmental conditions of the property are as stated in this document and this property is suitable for outgrant.

Environmental Professional:

Signature _____ Title _____

Print Name _____ Date _____

The real estate professional(s) acknowledge these restrictions and/or LUCs identified above and will ensure they are made a part of the outgrant document.

Real Estate Professional:

Signature _____ Title _____

Print Name _____ Date _____

Property Owner (Activity or Region) acknowledges and accepts the foregoing statement of environmental conditions and the land use controls (if any) that will be required for this real estate outgrant:

Signature _____ Title _____

Print Name _____ Date _____

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Appendix A
LIST OF CONTACTS

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List of Contacts

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Donna Weeks	Occupational Health and Safety	donna.weeks@med.navy.mil	(301) 757-0144

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Final

Enhanced Use Lease Site 4
Environmental Condition of Property Report
Administration Work Campus

Naval Air Station Patuxent River
Patuxent River, Maryland

Prepared for:



Naval Facilities Engineering Command Washington

Public Works Department

NAS Patuxent River

22445 Peary Road, Bldg. 504

Patuxent River, MD 20670-5504

Prepared by:



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July 2010

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ABBREVIATIONS, ACRONYMS, AND SYMBOLS

ACHP	Advisory Council on Historic Preservation
ACM	Asbestos-containing material
AMERA	Asbestos Hazard Emergency Response Act
AICUZ	Air Installations Compatibility Use Zone
APZ	Accident potential zone
AQCR	Air quality control region
ARPA	Archeological Resource Protection Act
AST	Aboveground storage tank
BMP	Best Management Practice
BRAC	Base Realignment and Closure
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CWA	Clean Water Act
CZM	Coastal Zone Management
DoD	Department of Defense
ECP	Environmental Condition of Property
EDR	Environmental Data Resources
EFH	Essential fish habitat
EISA	Energy Independence and Security Act
ENE	East-north-east
EO	Executive Order
ER	Environmental Restoration
ESA	Endangered Species Act of 1973
ESD	Environmental site design
EUL	Enhanced Use Lease
FFA	Federal Facility Agreement
FIDS	Forest Interior Dwelling Species
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FY	Fiscal Year
ga	Gallons
GIS	Geographic Information System
GMR	General management recommendations
IPMP	Integrated Pest Management Plan
LBP	Lead-based paint
LID	Low impact development
LQG	Large Quantity Generator
LUC	Land use control
MBTA	Migratory Bird Treaty Act
MDE	Maryland Department of the Environment
MEC	Munitions and explosives of concern
MEP	Maximum extent practicable
mph	Miles per hour
MRP	Munitions Response Program
msl	Mean sea level
NAAQS	National Ambient Air Quality Standards

NAGPRA	Native American Graves Protection and Repatriation Act of 1990
NAS	Naval Air Station
NAVFAC	Naval Facilities Engineering Command
NAVRAMP	Naval Radon Assessment and Mitigation Program
NDW	Naval District Washington
NHPA	National Historic Preservation Act of 1966
NOAA	National Oceanographic & Atmospheric Administration
NOV	Notices of Violation
NRC	Naval Recreation Center
OPNAVINST	Office of the Chief of Naval Operations Instruction
PCBs	Polychlorinated biphenyls
PTC	Permit to Construct
RCRA	Resource Conservation and Recovery Act
RVs	Recreational vehicles
SDWA	Safe Drinking Water Act
SHPO	State Historic Preservation Officer
The Register	National Register of Historic Places
TSCA	Toxic Substances Control Act
USACE	United States Army Corps of Engineers
U.S.C.	United States Code
USFWS	United States Fish and Wildlife Service
USGS	United States Geologic Survey
UST	Underground storage tank
UXO	Unexploded ordnance

Executive Summary

Under its Enhanced Use Leasing (EUL) program, the Department of the Navy (hereinafter referred to as the “Navy”) is making available for lease non-excess real property for the development of new administrative space at the Naval Air Station (NAS) Patuxent River, Patuxent River, MD (hereinafter referred to as NAS Patuxent River or the “Station”). This Environmental Condition of Property (ECP) report was prepared for NAS Patuxent River EUL Site 4 (hereinafter referred to as “EUL Site 4”) and its adjacent properties. This report evaluates the current and former uses of the site; describes the environmental conditions of the land, facilities, and real property assets within the site; and summarizes any environmental restrictions, land use controls, and consultation requirements that may be necessary for development within EUL Site 4.

The ECP report findings for EUL Site 4 are based on a record search of readily available documents, a thorough review of the applicable and relevant documents, analysis of the NAS Patuxent River Geographic Information System (GIS), interviews with personnel knowledgeable about the site and its adjacent properties, and visual site investigations conducted on May 18, 2010 and June 1, 2010.

EUL Site 4 consists of approximately 3.27 acres (13,200 square meters) located on the southeast corner of Buse Road and Cuddihy Road. According to historical topographic maps, aerial photography, and property record cards, EUL Site 4 remained undeveloped and used as farmland until NAS Patuxent was established in 1943. After NAS Patuxent was established, the Chaffee Court residential quarters were constructed in 1971. EUL Site 4 remains housing until its planned demolition in fiscal year 2010.

No areas of potential environmental concern were identified during the ECP study for EUL Site 4 and its adjacent properties.

In accordance with DoD policy regarding the classification of properties that may exhibit hazardous substance or petroleum contamination (please reference Deputy Under Secretary of Defense Goodman Memorandum dated 21 October 1996), EUL Site 4 has been classified as Category 1. This category applies to properties where no release or disposal of hazardous substances or petroleum products has occurred (including no migration of these substances from adjacent areas). No releases, disposals, or mitigation of hazardous substances have been documented within or adjacent to EUL Site 4; therefore, there is no reason to suspect contamination.

1. INTRODUCTION

1.1 Introduction and Background

The Navy is making available for lease non-excess real property at the NAS Patuxent River, Patuxent River, Maryland (hereinafter referred to as NAS Patuxent River or the “Station”) under its EUL program.

NAS Patuxent River is located in Saint Mary’s County in Southern Maryland at the confluence of the Chesapeake Bay and the Patuxent River. NAS Patuxent River covers approximately 6,400 acres (25.9 square kilometers) with an additional 850 acres (3.4 square kilometers) at the Webster Field Annex, located about 15 miles (24.1 kilometers) south of the Station. The Naval Recreation Center (NRC) Solomons located across the Patuxent River in Solomons, Maryland is also under the administrative control of NAS Patuxent River and Naval District Washington (NDW). NRC Solomons encompasses approximately 300 acres (1.2 square kilometers) and is the largest outdoor recreation facility in the Navy. Figure 1-1 presents the location of NAS Patuxent River, Webster Field Annex, and NRC Solomons in the Washington, D.C. metropolitan area.

The Station supports naval aviation operations by researching, developing, testing and evaluating aircraft components and related products. The facilities are also used by foreign governments, academic institutions and private industry for similar projects. The Naval Aviation Systems Team at Patuxent River includes the Naval Air Station, the Webster Field Annex and the Naval Air Warfare Center Aircraft Division. NAS Patuxent River also is home to approximately 50 other tenant activities.

In support of the development of new administrative space through an EUL action, NAVFAC Washington has prepared this ECP report for NAS Patuxent River EUL Site 4. The following report presents a summary of readily available information on the current and former uses, environmental conditions of, and concerns relative to, the land, facilities and real property assets at EUL Site 4.



Figure 1-1. Location of NAS Patuxent River in the Washington, D.C. Metropolitan Area

1.2 Organization of ECP Report

The ECP report is organized as follows:

- Section 2 (Survey Methodology) provides the methodology used to conduct the ECP study, including records review, site visit, and interviews.
- Section 3 (Past and Current Use) describes the current and former uses of the EUL site and the adjacent property.
- Section 4 (Environmental Setting) describes the environmental setting of the EUL site.
- Section 5 (Environmental Conditions of Subject Property) addresses the environmental conditions and related findings for the EUL site.
- Section 6 (Environmental Conditions of Adjacent Property) addresses the environmental conditions and related findings for property adjacent to the EUL site.
- Section 7 (Conclusions) presents the conclusions and recommendations of the ECP study.
- Section 8 (References) presents a list of references used in preparation of the ECP report.
- Section 9 (Certification) provides certification of the ECP report.

1.3 Purpose of ECP Report

The purpose of this ECP report is to establish the environmental condition of the real property to support the proposed EUL real estate action. This ECP study is primarily based on the review of readily available information, visual site inspections, and interviews with personnel familiar with the site history to determine any environmental risks associated with the proposed site.

Readily apparent operational and regulatory compliance deficiencies of environmental program areas such as underground storage tanks (USTs), air emissions, lead-based paint, asbestos, pesticides, polychlorinated biphenyls (PCBs), radon, medical waste, munitions or explosives of concern, lead based paint, stormwater, and natural resources are also provided in the ECP report. This ECP study does not re-investigate or otherwise review the adequacy of previously conducted investigations or remedial actions.

This ECP report will provide baseline environmental conditions for EUL Site 4 pursuant to the following goals:

- To document inquiry into environmental conditions to support real estate decisions;
- To protect the Navy from future liability;
- To determine risk of exposure to grantees/government employees; and
- To inform grantees of environmental conditions, restrictions, and land use controls (LUCs) associated with the real property (Department of the Navy, 2006).

1.4 Parcel Identification and Boundaries

EUL Site 4 consists of approximately 3.27 acres (13,200 square meters) located on the southeast corner of Buse Road and Cuddihy Road. The site includes Chaffee Court residential quarters, which are planned for demolition in fiscal year 2010. Figure 1-2 presents the location of EUL Site 4 at NAS Patuxent River.



Figure 1-2. EUL Site 4 – NAS Patuxent River

1.5 Legal Description

Facility Name and Address: Naval Air Station Patuxent River, 22268 Cedar Point Road,
Patuxent River, MD 20670

Property Owner: United States Government

Date of Ownership: 1 April 1943

Current Occupant: US Navy

Zoning: Military

County, State: St. Mary's, Maryland

USGS Quadrangle: Solomons Island, MD. 38076-C4-TF-024

Latitude, Longitude: 38°17'02.53"N, 76°26'55.76"W

Parcel Number: Not Available

2. SURVEY METHODOLOGY

2.1 Approach and Rationale

This ECP report was prepared to document the environmental conditions of, and concerns relative to, the land, facilities, and real property assets of EUL Site 4. The environmental conditions of properties adjacent to EUL Site 4 were also considered in this report.

This report serves as a summary of readily available information based on an extensive record search of available documents, a thorough review of the applicable and relevant documents, analysis of the Station's GIS, two visual surveys conducted on May 18, 2010 and June 1, 2010, and on-site interviews with personnel knowledgeable about the history of EUL Site 4.

Extensive environmental investigations and reports and pertinent historical documents were reviewed in support of this ECP report. However, no sampling or analysis of any media was conducted during this survey. Information obtained is reflected within this report by reference. A complete list of references is provided as Section 8 (References).

The information obtained from the Navy and other environmental reports were considered to be accurate unless reasonable inquiries indicated otherwise. New information or changes in site use could require a review and possible modification of the findings and conclusions contained in this report.

2.2 Property Classification Guidelines

Based on analysis of the available data, the EUL Site was classified into one of seven Department of Defense (DoD) Environmental ECP categories as defined by the S.W. Goodman Memorandum dated October 21, 1996. The property classification categories are as follows:

- Category 1: Areas where no release or disposal of hazardous substances or petroleum products has occurred (including no migration of these substances from adjacent areas).
- Category 2: Areas where only release or disposal of petroleum products has occurred.
- Category 3: Areas where release, disposal, and/or migration of hazardous substances has occurred, but at concentrations that do not require a removal or remedial response.
- Category 4: Areas where release, disposal, and/or migration of hazardous substances has occurred, and all removal or remedial actions to protect human health and the environment have been taken.
- Category 5: Areas where release, disposal, and/or migration of hazardous substances has occurred, and removal or remedial actions are underway, but all required remedial actions have not yet been taken.
- Category 6: Areas where release, disposal, and/or migration of hazardous substances has occurred, but required actions have not yet been implemented.
- Category 7: Areas that are not evaluated or require additional evaluation.

2.3 **Related Reports**

Related environmental reports used in the preparation of this ECP report include, but are not limited to the following:

- Final Environmental Impact Statement for Increased Flight and Related Operations in the Patuxent River Complex, Patuxent River, Maryland;
- Environmental Assessment for the Privatization of Navy Housing at Naval Station;
- Draft Final Environmental Assessment for Disposition of Excess Buildings;
- Integrated Natural Resources Management Plan;
- Tank Management Plan, Volume 1;
- (Environmental Restoration) Site Management Plan, 2009 Update;
- Cold War Historic Context (1945-1989) and Architectural Survey and Evaluation;
- Draft Integrated Pest Management Plan, Naval Air Station Patuxent River, Maryland;
- Environmental Baseline Survey Update - Electric Utility Privatization: Naval Air Station Patuxent River Main Base, Lexington Park, Maryland; Webster Field Annex, St. Inigoes, Maryland; & Naval Recreation Center Solomons, Solomons Island;
- Historic Landscape Survey, Naval Air Station Patuxent River, Webster Field, and Solomons Complex;
- Naval Air Station Patuxent River Spill Records Database;
- Building Asbestos Reports; and
- Draft Part 70 Operating Permit No. 24-037-0017.

A complete list of references is provided in Section 8 (References).

2.4 **Real Estate Document Review**

A comprehensive property history of EUL Site 4 was created by reviewing Property Record Cards maintained by NAS Patuxent River for all former and current buildings and infrastructure located within the site. Historical land use records and personal interviews were used to understand property use and condition prior to the Navy taking ownership of the property. In addition, an environmental data and historical records package including a radius report, relevant historical aerial photographs, and topographic maps of the site was obtained from Environmental Data Resources (EDR) on May 20, 2010. Section 3 (Past and Current Use) presents the past and current use of EUL Site 4.

3. PAST AND CURRENT USE

3.1 Installation History

Prior to the early 20th century, NAS Patuxent River remained undeveloped and was used primarily for farming. Several plantations existed in the area, including Eltonhead Manor (1648), Susquehanna (1649), and Mattapany-Sewell (1663). A topographic maps dated 1905, indicates that a small community called Pearson was located near the current northwest boundary of the Station, which consisted of a few residences, post office, a store, automobile dealer, and a church. The community was no longer represented on any historical maps more recently dated than 1943 (NAVFAC, Atlantic Division, 2009b; EDR, 2010a; EDR, 2010b).

NAS Patuxent River was commissioned on April 1, 1943, in an effort to centralize widely dispersed air testing facilities that had been established prior to World War II. This consolidation effort was swift, and the farming operations on the property were replaced by flight test operations within a year after the 1943 ground breaking for construction. The U.S. Naval Test Pilot School was established in 1958. In 1975, the Naval Air Test Center began to assume its role as the Naval Air Systems Command's principal site for development testing. Test facilities were upgraded in the late 1970s, with some of the largest construction appropriations in the history of the base (NAVFAC, Atlantic Division, 2009b; EDR, 2010a; EDR, 2010b).

Within the last decade, several new facilities were established at NAS Patuxent River due to Base Realignment and Closure (BRAC) actions. More than \$155 million has been budgeted for new engineering complexes and renovation of existing facilities. These include the Aircraft Technologies Lab; North Engineering Center; South Engineering Center; Frank Knox School improvement; Integrated Project Team Building; and the Propulsion System Evaluation Facility. The Aircraft Technologies Lab and the North and South Engineering Centers combined are occupied by 1,300 people recently relocated to NAS Patuxent River (Department of the Navy, 2002).

NAS Patuxent River is largely developed with aircraft runways, taxiways, hangars, and supporting structures and equipment. Residential communities, commercial properties, schools, churches, and recreational areas are also present. The Station is improved with water, wastewater, electric, and natural gas service.

3.2 Subject Property

According to historical topographic maps and property record cards , EUL Site 4 remained undeveloped and used as farmland until NAS Patuxent was established in 1943. After NAS Patuxent was established, Buildings 1600, 1601, 1602, 1603, 1604, and 1605 were constructed as housing in 1971. EUL Site 4 remains housing until its planned demolition in fiscal year 2010 (EDR, 2010a; EDR, 2010b; Baker, 2010a; Baker, 2010b).

The terrain of EUL Site 4 is generally flat, with a gradual downward slope across the site from the southwest to northeast corner. The highest elevation on the site is approximately 100 feet (30.5 meters) above mean sea level (msl) and the lowest elevation is approximately 90 feet (27 meters) above msl.

3.3 Adjacent Property

According to historical topographic maps and property record cards, the property adjacent to EUL Site 4 remained undeveloped until 1989. Property adjacent to EUL Site 4 currently includes facilities for Navy personnel support. Table 3-1 summarizes the existing adjacent area facilities and functions. Figure 5-1 illustrates the locations of EUL Site 4 adjacent area facilities.

Table 3-1. Existing Adjacent Area Facilities

Facility Number/Name	Built Date	Function(s)
Building 2119	1989	Navy Lodge
Building 2377	1996	CITGO Gas Station, NEX Gas Station

Property adjacent to the site provides a range of outdoor recreation activities including hunting, hiking, and bird-watching. The Outdoor Recreation Program at NAS Patuxent River relieves pressure from recreational areas in the community and generates a positive impact on the Station's staff productivity and retention (Department of the Navy, 2002).

4. ENVIRONMENTAL SETTING

4.1 Location

NAS Patuxent River is located in the southern portion of St. Mary's County, Maryland, at latitude 38°17'N and longitude 76°25'W, approximately 54 miles (87 kilometers) southeast of Washington, DC. St. Mary's County is the southernmost part of Maryland's western shore and consists of a peninsula surrounded by tidal water on all but the northwestern boundary. NAS Patuxent River occupies a small peninsula and broad headland (known as Cedar Point) at the confluence of the Patuxent River and Chesapeake Bay in the eastern portion of the county. The Station, which comprises approximately 6,400 acres (25.9 square kilometers), is bounded by the Patuxent River to the north, the Chesapeake Bay to the east, and the town of Lexington Park, Maryland to the south and west (NAVFAC, Atlantic Division, 2009b). Figure 1-1 presents the location of NAS Patuxent River, Webster Field Annex and NRC Solomons in the Washington, D.C. metropolitan area.

4.2 Climatology

NAS Patuxent River lies within the Humid Temperate, Semi-Continental Climate Zone. The Station's proximity to the Patuxent and Potomac Rivers, the Chesapeake Bay, and their tributaries affects the local climate. The atmospheric flow in this region is from west to east across North America, and there are four distinct seasons. Prevailing winds are from the northwest, except during the warm months, when they are more southerly. Average wind speeds are approximately nine miles per hour (mph), although winds may reach in excess of 60 mph on rare occasions. Windiest periods in this region include late winter and early spring. Additionally, other extreme weather events, such as tornadoes, hurricanes, and blizzards occur during other seasons, but are very rare.

Normal temperatures for the region range from an average low of 29°F and an average high of 44°F in January (the coldest month) to an average low of 70°F and an average high of 86°F in July (the warmest month).

The annual mean precipitation for the area is approximately 41.7 inches (1.1 meters), with approximately 15 inches (0.381 meters) of this amount occurring as snowfall. Precipitation occurs evenly throughout the year, with slight increases occurring in July and August. In summer, precipitation occurs mostly through thunderstorms, which occur on an average of 33 days per year. Drought may occur in any season but is most likely to occur in the summer (Department of the Navy, 2002).

4.3 Geology

The geological deposits underlying NAS Patuxent River are thick, unconsolidated beds of sand, silt, clay, and gravel resulting from marine deposits. Because these formations are entirely sedimentary in nature, they are extremely vulnerable to erosion. NAS Patuxent River is primarily underlain with a Matapeake-Mattapex-Sassafras soil association with smaller areas of a Sassafras- Beltsville association and Othello-Mattapex association (Department of the Navy, 2002).

The dominant surface sediments at the Station were deposited during the Quaternary Period, primarily Sunderland, Wicomico, and Talbot deposits. Layers that outcrop in St. Mary's County were deposited during the Tertiary and Quaternary Periods. The Station is underlain by a Cretaceous layer, which consists of Arundel, Patapsco, Raritan, Magothy, Matawan, and Monmouth formations (Department of the Navy, 2002).

4.4 Hydrogeology

There are three principal groundwater aquifers beneath NAS Patuxent River: Piney Point-Nanjemoy Aquifer, Aquia Aquifer, and Patapsco Aquifer. The Piney Point- Nanjemoy Aquifer is a major source of potable water for residential users in southern Maryland. The Aquia Aquifer is the principal source of potable and industrial water for both the Station and local public water suppliers. The Station also has two water supply wells tapping into the Patapsco Aquifer.

The elevation of the water table beneath the Station ranges from sea level along the coastal areas to approximately 80 feet (24 meters) below msl in the southwestern portion of the facility (Department of the Navy, 2009).

Several major drainage areas collect precipitation runoff from the Station. This runoff goes directly to one of four hydraulic sinks: (1) Patuxent River, (2) Chesapeake Bay, (3) estuary areas, or (4) freshwater creeks and ponds and associated wetland areas. All of the runoff from the Station eventually flows to the Chesapeake Bay.

There are six constructed ponds located on the Station. Except for Richneck Pond, all are located in the southern and western portions of the Station and serve to control runoff and provide fish and wildlife habitats, recreation, and a source of water for firefighting. In addition to these water bodies, there are low-lying areas throughout the Station that tend to act as temporary stormwater storage areas, helping to control runoff rates and downstream flooding (Department of the Navy, 2002).

4.5 Topography

The terrain at NAS Patuxent River rises gradually from the Chesapeake Bay shoreline westward. A majority of the Station (70 percent) is level and fairly well-drained. Some low areas are somewhat-poorly-drained to poorly-drained, and become intermittently flooded and/or saturated. The southwestern portion of the Station is hilly, with the highest elevations on the Station.

The United States Geologic Survey (USGS) Solomons Island, Maryland quadrangle indicates a general topographic gradient of east-north-east (ENE) for the Station. Elevation averages 35 feet (10 meters) above msl at the center of the Station, with higher elevations on the western portion of the property and lower elevations on the north and east boundaries with the Patuxent River and the Chesapeake Bay, respectively (EDR, 2010a; EDR, 2010b).

5. ENVIRONMENTAL CONDITIONS OF SUBJECT PROPERTY

This section discusses various aspects of the affected environment within EUL Site 4 and provides regulatory background, discussion of resources or features present, and an overview of restrictions, land use controls, and consultation requirements that may be necessary for development within this site.

A site map (Figure 5-1) was developed using GIS data retrieved from the Navy. The map displays the pertinent environmental constraints identified in the site. The map is not comprehensive and is intended only to support the information provided in this report.

5.1 Environmental Restoration

The Environmental Restoration (ER) program at NAS Patuxent River was established to comply with the Federal Facility Agreement (FFA) signed on December 2000 between the Navy and the EPA Region III. The ER program identifies, investigates, and environmentally restores sites containing hazardous substances to reduce the risk to human health and the environment. The ER program also incorporates the Munitions Response Program (MRP), which manages the environmental, health, and safety issues presented by unexploded ordnance (UXO), discards munitions, munitions constituents, and other munitions and explosives of concern (MEC) found on-base (Department of the Navy, 2009b).

Due to the historical use of NAS Patuxent River and procedures once used to treat and dispose of waste and munitions, the installation as a whole is at risk for environmental contamination. A variety of facility-wide, multi-site and single site environmental investigations have been conducted at NAS Patuxent River to identify and assess the presence of contaminants in areas of potential concern. The Station's Site Management Plan identifies 56 specific environmental restoration sites at NAS Patuxent River (Department of the Navy, 2009). Numerous additional investigations are underway or are anticipated to begin during Fiscal Year (FY) 2010 and FY 2011.

EUL Site 4

Upon review of the Site Management Plan, it has been determined that no documented ER sites are located within EUL Site 4 and no additional investigations are underway or anticipated within EUL Site 4 (Department of the Navy, 2009). Therefore, no environmental conditions, restrictions, or land use controls associated with the ER program would apply to EUL Site 4.

5.2 Munitions or Explosives of Concern

EUL Site 4

There are no documented MRP sites within EUL Site 4, and no explosives operations (e.g., munitions storage or handling) are known to have taken place within EUL Site 4. However, due to incomplete records and historical disposal practices at NAS Patuxent River, there is some potential to find MEC, including buried UXO, during earthwork at the Station (Simpson, 2010; NAVFACWASH, 2010). If MEC is discovered, earth disturbance in the vicinity of the discovery must cease and the location and description of the item(s) must be reported immediately to the Navy Project Manager.

5.3 Tanks/Petroleum Contamination

Storage tanks are classified based on their location and referred to as aboveground storage tanks (AST) and UST. Through the Resource Conservation and Recovery Act's (RCRA) Hazardous and Solid Waste Amendments, EPA established a federal program to regulate USTs containing petroleum and hazardous chemicals to limit corrosion and structural defects and thus minimize future tank leaks. In addition, the amendments directed EPA to set operating requirements and technical standards for tank design and installation, leak detection, spill and overfill control, corrective action, and tank closure. The UST program is implemented in Maryland by the Maryland Department of the Environment (MDE) (USEPA, 2010b).

Storage tanks at NAS Patuxent River are used to store a variety of petroleum products to support mission-related activities. NAS Patuxent River has an active Tank Management Plan that lists both ASTs and USTs currently in use, regulatory requirements for each storage tank, and ensures proper inspection and maintenance is performed (Naval Air Station Patuxent River, Maryland, 2008). Spills and resulting soil contamination from ASTs, USTs, or other sources of petroleum are documented and stored in a spill database specific to NAS Patuxent River and separate to the Tank Management Plan. The spill database contains a complete record of spills dating back to 1994.

EUL Site 4

No petroleum tanks are known to be present within EUL Site 4 (Naval Air Station Patuxent River, Maryland, 2008; NAVFACWASH, 2010). Additionally, there are no historical records of tanks formerly within this site. However, historical tank records may be incomplete, and there is some potential that undocumented tanks could be encountered during earthwork at the Station. Accordingly, there is also some potential for subsurface or groundwater contamination as a result of spills or leaks associated with any such undocumented tanks.

5.4 Hazardous Substances/Hazardous Waste

Hazardous substances and hazardous waste are defined by EPA as a material that exhibits a characteristic of ignitability, corrosivity, reactivity, or toxicity, or is specifically listed as a hazardous material. Several federal environmental policies list and require special handling procedures for certain hazardous substances, including the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), Toxic Substances Control Act (TSCA), and RCRA. CERCLA, better known as the Superfund, ensures liability and clean-up of abandoned hazardous material by responsible parties provides (USEPA, 2010d). EPA controls hazardous substances through the TSCA, which addresses chemical substances and mixtures whose manufacture, processing, distribution, use, or disposal may present an unreasonable risk of injury to health or the environment (Department of the Navy, 2009b). RCRA is broad in its regulatory management of solid and hazardous waste, including cleanup, through corrective action, of releases of hazardous waste at RCRA-regulated facilities, such as NAS Patuxent River. RCRA requires cradle-to-grave management of hazardous waste through a recordkeeping system that tracks shipments of hazardous waste. Hazardous waste treatment, storage, and disposal facilities are regulated through the issuance of operating permits. EPA has delegated the enforcement of RCRA in Maryland to MDE.

On-site accumulation times for hazardous waste at NAS Patuxent River are restricted to the applicable time frames referenced in 40 CFR 262.34 and other applicable Maryland laws or regulations. Non-explosive hazardous waste is transported to an approved, off-site hazardous waste treatment, storage, or disposal facility in accordance with Department of Transportation regulations. The hauling and disposal of demolition debris, including hazardous wastes containing lead, asbestos, and air conditioner refrigerant, is performed in compliance with local, state, and federal codes and requirements.

NAS Patuxent River is listed in the EDR as a Large Quantity Generator (LQG) of hazardous wastes (EDR, 2010c). There are 50 buildings designated as satellite accumulation areas for hazardous waste. Pursuant to 40 CFR 262.34(c)(1), these points may accumulate as much as 55 gallons (208 liters) of hazardous waste or one quart of acutely hazardous waste. Once they become full, containers at these satellite accumulation points must be transferred to one of the 38 active less-than-90-day central accumulation sites at NAS Patuxent River.

EUL Site 4

There are no records of any hazardous waste storage or contamination at EUL Site 4 (Olson, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with hazardous substances or waste would apply to EUL Site 4.

5.5 Solid/Bio-hazardous Waste

Solid waste is any garbage, refuse, sludge, or other discarded material including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, agricultural, or community activities (Department of the Navy, 2009b). Bio-hazardous waste, or medical waste, is defined as all waste generated at health care facilities, such as hospitals, clinics, physician's offices, dental practices, blood banks, and veterinary hospitals/clinics, as well as medical research facilities and laboratories. Solid and bio-hazardous waste generators, transporters, destruction facilities, and disposal facilities are subject to RCRA, and applicable state and local regulations and regulatory requirements that prohibit disposing of solid waste in open dumps and require bio-hazardous waste be treated and disposed of safely (USEPA, 2010c).

EUL Site 4

EUL Site 4 has not been associated with the generation, handling, or storage of bio-hazardous or solid waste (Olson, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with solid and bio-hazardous waste would apply to EUL Site 4.

5.6 Polychlorinated Biphenyls

The TSCA authorizes EPA to secure information on all new and existing chemical substances and to control any of these substances that could cause an unreasonable risk to public health or the environment. PCBs are regulated under Title I, Control of Toxic Substances, which includes provisions for testing chemical substances and mixtures, manufacturing and processing notices, regulating hazardous chemicals substances and mixtures, managing imminent hazards, and reporting and retaining information.

EUL Site 4

PCBs were originally used at NAS Patuxent River in transformers located throughout the installation. However, all transformers containing PCBs were retrofitted or replaced in the 1970s and 1980s. No PCB program or reports have been developed due to the overall low risk of PCB equipment and exposure (Ichniowski, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with PCBs would apply to EUL Site 4.

5.7 Asbestos-Containing Material

Asbestos abatement is regulated under the TSCA Title II, Asbestos Hazard Emergency Response, which was added by the Asbestos Hazard Emergency Response Act (AHERA). AHERA provides for the promulgation of federal regulations requiring inspection for asbestos and appropriate response actions in schools and mandates periodic reinspection. In addition, it requires EPA Administrators to determine "the extent of the danger to human health posed by asbestos in public and commercial buildings and the means to respond to any such danger" (Department of the Navy, 2009c).

Several of the buildings at NAS Patuxent River were built prior to health concerns related to asbestos-containing material (ACM) arose and regulations were implemented. An asbestos survey was completed for buildings suspected of having ACM during the early 1990s. A report was completed for each building and mitigation and clean-up efforts were completed thereafter (Apex Environmental, Inc., 1993). However, due to the likelihood that ACM remains present in many buildings, it should be assumed that all buildings subject to renovation or demolition contain ACM unless a report demonstrates otherwise.

EUL Site 4

Buildings 1600, 1601, 1602, 1603, 1604, and 1605 located at EUL Site 4 are currently being demolished. Potential ACM, if present, will be removed during demolition; therefore, land use controls associated with buildings containing ACM will not apply within EUL Site 4 (EDR, 2010a; EDR, 2010b; NAVFACWASH, 2010).

5.8 Lead-based Paint

The use of toxic lead-based paint (LBP) was banned in 1977 by the Consumer Product Safety Commission. The MDE has established the Lead Poisoning Prevent Program to enhance citizen safety and prevent exposure to LBP (MDE, 2010b).

Before it was removed from the market, LBP was commonly used on the exterior and interior walls during the renovation or construction of buildings at NAS Patuxent River. Many of these buildings remain today. No comprehensive survey of LBP containing-buildings has been completed for NAS Patuxent River. Due to the age of many buildings at NAS Patuxent River and lack of LBP mitigation or clean-up efforts, it is suspected that buildings built before 1978 contain LBP unless documentation demonstrates otherwise.

EUL Site 4

Buildings 1600, 1601, 1602, 1603, 1604, and 1605 located at EUL Site 4 are currently being demolished. Potential LBP, if present, will be properly removed during demolition; therefore, land use controls associated with buildings containing LBP will not apply within EUL Site 4

(EDR, 2010a; EDR, 2010b; NAVFACWASH, 2010; NAVFACWASH, 2009). No sampling data, comprehensive LBP reports, or documentation of mitigation or clean-up efforts exist (O’Connell, 2010).

5.9 Pesticides and Herbicides

NAS Patuxent maintains an Integrated Pest Management Plan (IPMP), which is a long-range planning and operational tool that establishes the strategy and methods for conducting a safe, effective, and environmentally sound integrated pest management program. The IPMP covers all pest management and pesticide-related activities conducted within all areas of the installation. The IPMP was developed in accordance with Navy guidance (e.g., OPNAVINST 6250.4) and applicable laws and regulations, such as the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). FIFRA provides the basis for regulation, sale, distribution and use of pesticides in the US, and addresses applicator certification requirements, record keeping, and penalties for pesticide misuse (NAVFAC, Atlantic Division, 2009a).

EUL Site 4

There are no documented invasive species requiring the use of pesticides or herbicides on EUL Site 4 (NAVFAC, Atlantic Division, 2009a; NAVFACWASH, 2010; Smith, 2010a; Rambo, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with pesticide and herbicide contamination would apply to EUL Site 4.

5.10 Radon/Radiological Material

Indoor radon concentrations are regulated under TSCA Title III (Indoor Radon Abatement). In response, the Navy established the Radon Assessment and Mitigation Program (NAVRAMP) which identifies, assesses, and mitigates the infiltration of radon into existing Navy-occupied buildings and incorporates preventive practices in the design and construction of new buildings.

EUL Site 4

St. Mary’s County is classified as Zone 2 by the EPA, indicating a moderate potential for elevated indoor radon levels. However, a base-wide survey of radon levels was completed in the 1970s and 1980s. The survey found no radon levels of concern; therefore, no radon program is established at the Station (Ichniowski, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with elevated radon levels would apply to EUL Site 4.

5.11 Water Quality

5.11.1 *Surface Water*

Important aquatic resources at NAS Patuxent include the Patuxent River, Chesapeake Bay, Pine Hill Run, Goose Creek, Pearson Creek, Harper’s Creek, and six freshwater ponds. These open water areas range from brackish to freshwater systems and support a variety of fish and wildlife resources. NAS Patuxent is situated on a peninsula at the mouth of the Patuxent River. Of NAS Patuxent’s approximately 6,400 acres (25.9 square kilometers), 1,041 acres (4.2 square kilometers) are open water or wetland (discussed in Section 5.12.2 (Wetlands)). This acreage is

comprised of six freshwater ponds; several perennial and intermittent streams; four estuaries; two seaplane basins; a partially enclosed sea-wall; and numerous saline, freshwater tidal, and nontidal marshes, in addition to forested and scrub/shrub wetlands (Department of the Navy, 2002).

NAS Patuxent shares boundaries with two significant resources – the Chesapeake Bay and the Patuxent River. The Chesapeake Bay, with its associated salt marshes, is the largest estuary in North America and one of the most productive in the world. Its bounty of finfish, shellfish, crabs, and waterfowl is world-renowned. The Patuxent River is one of the rivers initially designated as part of the Maryland State Wild and Scenic Rivers Program. In addition, while no Maryland river is on the National Wild and Scenic Rivers System, Patuxent River is listed in the Nationwide Rivers Inventory as having the significant resource values required for potential inclusion (Department of the Navy, 2002).

NAS Patuxent contains many miles of intermittent and perennial headwater streams. Streams usually occupy well-defined channels where topographic gradients are steeper or where they have been channeled. In the level, low-lying areas, streams often occupy split or braided channels. Those streams occurring in densely forested areas have not all been detected by photo interpretation or mapped.

EUL Site 4

There are no surface waters at EUL Site 4 (Department of the Navy, 2002). Therefore, no environmental conditions, restrictions, or land use controls associated with surface water would apply to EUL Site 4.

5.11.2 Stormwater

Stormwater is generated when precipitation runs off from land and impervious areas such as paved streets, parking lots, and building rooftops. Stormwater runoff can collect pollutants such as oil and grease, chemicals, nutrients, metals, and bacteria as it travels across land, and it also causes soil erosion when traveling at velocities sufficient to carry sediment particles. The Clean Water Act (CWA) regulates both direct and indirect discharges of “priority” pollutants that are often conveyed by stormwater, such as total suspended solids, fecal coliform, and oil and grease. Stormwater is typically managed using structural or nonstructural Best Management Practices (BMPs). Structural BMPs include control systems such as infiltration devices, ponds, filters and constructed wetlands, while nonstructural BMPs include low impact development (LID) practices and management measures (USEPA, 2004).

EUL Site 4

Stormwater runoff generated by impervious surfaces in the housing area (e.g., roofs and walkways) flows along the road into the stormwater sewer system through an inlet located on the western boundary of the site. Additional runoff flows to vegetated areas surrounding the site. Any new development within EUL Site 4 must be designed and executed in accordance with applicable requirements of the following standards and regulations to ensure that stormwater impacts are minimized. Pursuant to Section 438 of the Energy Independence and Security Act (EISA) of 2007, development with a footprint greater than 5,000 SF (465 square meters) must maintain or restore to the maximum extent practicable pre-development hydrology with respect

to temperature, rate, volume, and duration of flow (U.S. Congress, 2007). Pursuant to the Navy's LID policy, the Navy sets a goal of no net increase in stormwater volume and sediment or nutrient loading from construction projects (Department of the Navy, 2007). Pursuant to Maryland's Stormwater Management Act of 2007, development with a footprint greater than 5,000 SF must implement environmental site design (ESD), to the maximum extent practicable (MEP) in accordance with Section 4.0 Stormwater Management Criteria of the 2000 Maryland Stormwater Design Manual. Additionally, re-development with a footprint greater than 5,000 SF must implement ESD to the MEP to provide water quality treatment for a minimum of 50 percent of the existing impervious area within the limits of disturbance. For additional information, please reference the 2000 Maryland Stormwater Design Manual (MDE, 2009; MDE, 2010).

5.11.3 Groundwater

The Safe Drinking Water Act (SDWA) was originally passed by Congress in 1974 to protect public health by regulating the nation's public drinking water supply. The law was amended in 1986 and 1996 and requires the protection of drinking water and its sources – rivers, lakes, reservoirs, springs, and groundwater wells. SDWA authorizes the US EPA to set national health-based standards for drinking water to protect against both naturally-occurring and man-made contaminants that may be found in drinking water (USEPA, 2010f).

The drinking water at NAS Patuxent is pumped from the Piney Point/Nanjemoy, Aquia, and Patapso aquifers – groundwater sources below St. Mary's County. The Compliance Division of the NAVFACWASH Public Works Environmental Division at NAS Patuxent River is responsible for both groundwater monitoring and protection of groundwater well locations on the Station. However, to date, no formal Source Water or Wellhead Protection Plan has been written (NAVFAC, Atlantic Division, 2009b).

EUL Site 4

There are no known groundwater wells present within EUL Site 4; therefore, there is no site specific information on the groundwater.

5.12 Natural Resources

5.12.1 Forests

Forested areas account for approximately 42 percent (2,817 acres, 11.6 square kilometers) of the land cover at NAS Patuxent. The forests on NAS Patuxent are presented in four broad classifications of forest types: bottomland pine; upland pine; bottomland hardwood; and upland hardwood (Department of the Navy, 2002).

Pine forests are defined as areas dominated mainly by trees of the genus *Pinus*, consisting of needle-leaved evergreen species. Upland pine forest accounts for 7 percent (207 acres, 837,700 square meters) of the forests encountered on NAS Patuxent. Bottomland pine forest consists of needle-leaved evergreen species in areas where the water table is at a depth sufficient to influence the development of oxygen-reducing conditions and create hydric soil and hydrophytic vegetation characteristics. This forest type accounts for 1 percent (24 acres, 97,100 square meters) of the forests encountered on NAS Patuxent. Upland hardwood forests consist of

hardwood tree species in areas where the water table is below a depth where hydric characteristics develop in the soils and plant community. This forest type accounts for 21 percent (581 acres, 2,351,000 square meters) of the forests encountered on NAS Patuxent. Pine species also occur in combination with hardwood tree species to form mixed forest types. This mixed forest type accounts for 21% (580 acres, 2,350,200 square meters) of the forests encountered on NAS Patuxent.

NAS Patuxent is an important migratory bird area as a result of extensive forest stands throughout the base. The Migratory Bird Treaty Act (MBTA) protects migratory birds and their habitats, and establishes a permitting process for legal taking. Except as permitted, actions of the Navy may not result in pursuit, hunting, taking, capture, killing, possession, or transportation of any migratory bird, bird part, nest, or egg thereof.

The potential for commercial forest products such as poletimber, sawtimber, pulpwood, and firewood is an added economic benefit afforded by the forested areas on NAS Patuxent. All merchantable timber that is cut on NAS Patuxent is considered Navy Real Property and must be disposed of properly, with appropriate disbursement to the Navy Forestry Account.

The most important management prescription proposed for wildlife habitat concerns is the designation of a large, contiguous forest block on the south side of the Station. This forested area will benefit many rare, threatened, and endangered species that are known to and/or have the potential to inhabit the region. The most important indicator of the success of the forest management prescription for the maintenance and restoration of critical ecosystem functions is the monitoring of Forest Interior Dwelling Species (FIDS). These species are considered "area sensitive" species and require some critical mass of contiguous forest type in order to survive. The monitoring of populations of these species is crucial in determining the success of the forest block (Department of the Navy, 2002).

EUL Site 4

There are no documented contiguous forests within EUL Site 4 (Navy Enhanced Use Lease Patuxent River, 2010; NAVFACWASH, 2010; Department of the Navy, 2002). Development of EUL Site 4 may require removal of existing landscaping trees. Any tree clearing is recommended to take place in the winter to avoid disrupting the nesting of migratory birds. Any merchantable timber associated with clearing for development of EUL Site 4 must be disposed of properly, and with appropriate disbursement to the Navy Forestry Account (Department of the Navy, 2002).

5.12.2 Wetlands

The United States Army Corps of Engineers (USACE) and EPA define jurisdictional wetlands as areas that are inundated or saturated by surface water or groundwater frequently and long enough to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands provide important plant and wildlife habitat and serve as buffers and filters essential for maintaining the water quality of nearby surface waters.

The wetlands at NAS Patuxent River are protected by Section 404 of the CWA, Executive Order (EO) 11990 (Wetland Protection), and applicable state regulations, including the Maryland

Nontidal Wetlands Protection Act, Maryland Tidal Wetlands Act, and the Waterway and 100-Year Floodplain Construction Regulations. Section 404 of the CWA prohibits the discharge of dredged or fill material into wetlands or other waters of the United States if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's water would be significantly degraded. Regulated activities are controlled by a permit review process administered by the USACE (USEPA, 2010e).

EO 11990 was implemented in 1977 to protect wetlands and their associated ecosystem services. This EO directs each federal agency to avoid undertaking or providing assistance for new construction located in wetlands unless the head of the agency finds that 1) there is no practicable alternative to such construction, and 2) all practicable measures will be taken to minimize impacts to the wetlands. In addition, the Navy has a “no net loss” policy requiring the replacement of any wetlands destroyed or eliminated through a project.

To protect jurisdictional wetlands, MDE requires maintaining an area surrounding a wetland called a buffer. Activities that may disturb or occur within a non-tidal or tidal wetland or surrounding buffer are regulated under COMAR 26.23 and COMAR 26.24, respectively. According to COMAR 26.23.01, a buffer is a regulated area, 25 feet in width, surrounding a nontidal wetland, and measured from the outer edge of the non-tidal wetland. MDE requires the action proponent to obtain a Non-tidal Wetlands and Waterways Permit for any activity that alters a non-tidal wetland or its 25-foot buffer.

The Chesapeake Bay Critical Area Commission requires maintaining a 100-foot buffer around tidal wetlands and streams to improve runoff water quality and reduce the amounts of toxic substances entering tidal waters (Critical Area Commission, 2008). The Navy maintains these areas at NAS Patuxent by avoiding removal of trees within 100-foot riparian buffers wherever possible (U.S. Department of the Navy, 2008).

Wetland delineations for NAS Patuxent were performed with data collection between June and October 1995. This technique produced a wetland delineation that was conservative and probably included some upland areas. These delineations were not flagged or surveyed in the field; therefore they should be considered rough estimates (Rambo, 2010; Smith, 2010a; Department of the Navy, 2002).

EUL Site 4

According to the NAS Patuxent River GIS, there are no documented wetlands present within EUL Site 4. Therefore, no environmental conditions, restrictions, or land use controls associated with wetlands would apply to EUL Site 4.

5.12.3 Floodplains

A floodplain is the area along or adjacent to a stream or a body of water that is capable of storing or conveying floodwaters. Floodplains perform important natural functions, including moderating peak flows, maintaining water quality, recharging groundwater, and preventing erosion. In addition, floodplains provide wildlife habitat, recreational opportunities, and aesthetic benefits. To protect floodplains and minimize future flood damage, EO 11988 Floodplain Management restricts development within the 100-year floodplain. A 100-year floodplain is defined as an area that is subject to a one-percent or greater chance of flooding in any given year.

Under EO 11988, all federal agencies must 1) determine if any of their actions would occur within a floodplain, 2) evaluate the potential effects of these actions, and 3) analyze alternatives to these actions.

EUL Site 4

There are no floodplains within EUL Site 4 (Department of the Navy, 2002). Therefore, no environmental conditions, restrictions, or land use controls associated with floodplains would apply to EUL Site 4.

5.12.4 Coastal Zone

Maryland's Coastal Zone Management (CZM) Program was created in response to the passage of the Federal Coastal Zone Management Act of 1972. The goal of this program is to "preserve, protect, develop and, where possible, restore our coastal resources." Maryland's CZM Program was created in 1978 and is a network of state laws and policies designed to protect coastal and marine resources. Maryland's coastal zone includes 3,190 miles of coast in 16 counties and Baltimore City (MDNR, 2002). This area includes the Chesapeake Bay, coastal bays, and the Atlantic Ocean, as well as the towns, cities, and counties that have jurisdiction over the coastline. Maryland's coastal zone encompasses two thirds of the state's land area and is home to greater than 65 percent of the state's residents (MDNR, 2002). Federally controlled lands are excluded from the coastal zone per 16 U.S.C. 1453, Section 304, Paragraph (1). However, the Coastal Zone Management Act requires all federal activities that could affect land, water, or natural resources on the coastal zone to be consistent to the maximum extent practicable with the enforceable policies of the approved state CZM program. That is, even if the action occurs on federal land (excluded from the coastal zone), the action must be consistent to the maximum extent practicable with the state CZM program if it affects coastal resources.

The Chesapeake Bay Critical Area Law regulates all lands under the tidal influence of the Chesapeake Bay and its tributaries up to the head of the tide, as well as wetlands connected to these waters. It also regulates land within a 1,000-foot boundary inland from that line. The Critical Area Law is included within Maryland's Coastal Zone Management Program. Any disturbance within the Critical Area would require consultation with the Chesapeake Bay Critical Area Commission.

EUL Site 4

EUL Site 4 development will not impact the Maryland Coastal Zone or Critical Area. Therefore, no environmental conditions, restrictions, or land use controls associated with the Maryland Coastal Zone or Critical Area would apply to EUL Site 4.

5.12.5 Essential Fish Habitat

Fish and invertebrate species and their habitat are regulated and protected by several federal laws. The most notable of the federal laws is the Fishery Conservation and Management Act of 1976, which was reauthorized and amended by the Sustainable Fisheries Act in 1996 and is now popularly designated as the Magnuson-Stevens Fishery Conservation and Management Act. These acts mandated habitat conservation for federally managed fish species via the conservation tool known as essential fish habitat (EFH). The EFH mandate required that regional fishery

management councils, through Federal Fishery Management Plans, describe and identify EFH for each federally managed species, minimize to the extent practicable any adverse effect on such habitat caused by fishing, and identify other actions to encourage the conservation and enhancement of such habitats. EFH is defined by Congress for managed species as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (16 U.S.C. 1802[10]). Within the vicinity of the NAS Patuxent River (upper Chesapeake Bay), EFH has been designated for 11 of the 23 EFH fish species found in the Chesapeake Bay.

EUL Site 4

There is no essential fish habitat within EUL Site 4 (Department of the Navy, 2002). Therefore, no environmental conditions, restrictions, or land use controls associated with essential fish habitat would apply to EUL Site 4.

5.12.6 Threatened or Endangered Species

The Endangered Species Act of 1973 (ESA) protects federally-listed threatened, endangered, and candidate species of fish, wildlife, and plants and their designated critical habitats. Under this law, no federal action is allowed to jeopardize the continued existence of an endangered or threatened species. ESA also requires consultation with the United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (now called National Oceanographic & Atmospheric Administration (NOAA) Fisheries Service) and the preparation of a biological assessment when such species are present in an area that is affected by government activities (USFWS, 2010).

EUL Site 4

Based on previous surveys and discussions with NAS Patuxent Environmental Division personnel, there are no federally- or state-listed threatened or endangered species at EUL Site 4 (Smith, 2010a; Smith, 2010b; Department of the Navy, 2002). Therefore, no environmental conditions, restrictions, or land use controls associated threatened or endangered species would apply to EUL Site 4.

5.13 Cultural Resources

The National Historic Preservation Act of 1966 (NHPA), enacted under 16 United States Code (U.S.C.) 470, provides for the National Register of Historic Places (the Register), defines National Historic Landmarks, provides for the designation of a State Historic Preservation Officer (SHPO), and establishes the Advisory Council on Historic Preservation (ACHP). The Register lists sites, districts, buildings, structures, and objects of significance in American history, architecture, archeology, engineering, and culture. These resources may be of local, State, or national significance. Section 106 of the NHPA requires federal agencies to consider the effects of undertakings (i.e., actions) on any resource that is included or eligible for inclusion in the Register, and to afford the ACHP a reasonable opportunity to comment on such undertakings. In Maryland, the Maryland Historical Trust (a division of the Maryland Department of Planning) serves as the SHPO and also participates in Section 106 consultations. Pursuant to OPNAVINST 5090.1C, Chapter 5-5, an Environmental Assessment must be prepared for any proposed action that would have an adverse effect on resources listed or determined to be eligible for listing in the Register.

Section 110 of the NHPA requires federal agencies to establish a preservation program for the identification, evaluation, nomination (for the Register), and protection of historic properties. To this end, the Navy performs surveys and investigations to identify any historic properties under its jurisdiction.

5.13.1 Historic Architectural Resources

The most recent architectural and historic landscape evaluation of NAS Patuxent was performed in October 2009 (NAVFACWASH, 2009; NAVFACWASH, 2010). The surveys identified architectural resources and determined if resources were eligible for listing on the Register.

EUL Site 4

No historic buildings or landscapes have been identified within EUL Site 4 (Smolek, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with the presence of known historic architectural resources would apply to EUL Site 4. However, once the lessee provides information about the development plans, the Navy will pursue consultation with SHPO to seek concurrence that there is no adverse effect to historic architectural resources.

5.13.2 Archeological Resources

Archeological resources are material remains of past life or activities (Reinke & Swartz, 1999). Some examples of archeological resources include pottery, basketry, bottles, weapons, tools, rock paintings, rock carvings, and gravesites.

The Native American Graves Protection and Repatriation Act of 1990 (NAGPRA), enacted under 25 U.S.C. 3001, prohibits the intentional removal of certain types of Native American cultural items from Federal or tribal lands. Removal of cultural items may be permitted under an Archeological Resource Protection Act (ARPA) permit, which includes authorization and a written agreement between the federal agency and an appropriate repository that will house and curate the collection recovered from the project, and in consultation with the appropriate Native American groups (USDI, 2010). NAGPRA provides for the return of burial remains, associated funerary objects, sacred objects, and objects of cultural patrimony to the appropriate tribes. It established Native American ownership of human remains and associated artifacts discovered on Federal lands after the date of enactment (USDI, 2010).

EUL Site 4

A Phase I archeological survey, which locates archeological resources, has been performed at NAS Patuxent to make generalizations about the type and distribution of archeological properties that may be present. This survey indicated that no potentially-significant resources are known to be present at EUL Site 4 (Smolek, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with the presence of known archeological resources would apply to EUL Site 4. However, once the lessee provides information about the development plans, the Navy will pursue consultation with SHPO to seek concurrence that there is no adverse effect to archaeological resources.

5.14 Air Quality

Air quality is regulated under the authority of Title I, Part A, Section 109 of the Clean Air Act (CAA). EPA has established health-based National Ambient Air Quality Standards (NAAQS) for the criteria pollutants carbon monoxide, nitrogen dioxide, ozone, particulate matter, lead, and sulfur dioxide. To monitor and meet the NAAQS, the CAA divides the United States into geographic areas called “air quality control regions” (AQCRs). St. Mary’s County, where NAS Patuxent River is located, is a designated AQCR. An AQCR in which levels of a criteria air pollutant meet the health-based NAAQS is defined as an *attainment* area for the pollutant, while an area that does not meet the NAAQS is designated a *nonattainment* area for the pollutant. An area that was once designated a nonattainment area but was later reclassified as an attainment area is known as a *maintenance* area. An area may have an acceptable level for one criteria air pollutant but may have unacceptable levels for other criteria air pollutants. Thus, an area could be attainment, maintenance, and nonattainment at the same time for different pollutants.

In addition to NAAQS requirements, federal agencies must obtain permits to operate equipment that generates air emissions. Title V of the CAA establishes an operating permit program that requires all air quality requirements for a source to be combined into one comprehensive permit document. All major sources of air pollutants are required to apply for a Title V permit, which is valid for five (5) years. In addition to complying with the Title V operating permit, the CAA requires that federal agencies comply with state and local air quality requirements in the same manner as any non-governmental entity. NAS Patuxent River has received a Title V operating permit that includes 126 sources of air emissions, in addition to various insignificant emission units (Naval Air Station Patuxent River, Maryland, 2010).

Pursuant to COMAR 26.11.02.09, any new source of emissions must be issued a Permit to Construct (PTC) by MDE prior to installation. A PTC allows the installation of the unit and provides operating requirements that apply until the unit is incorporated into the next renewal of the Title V operating permit.

EUL Site 4

The AQCR of St. Mary’s County is an attainment area for all criteria pollutants of the CAA. The most recent Title V operating permit for NAS Patuxent River is effective on July 1, 2010 and expires June 30, 2015. At EUL Site 4 there are no sources of air emissions identified in the Title V permit and no PTCs have been issued for construction of any emission units (Ichniowski, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with air emissions would apply to EUL Site 4.

5.15 Flight Operation Noise & Safety

In the early 1970s, the DoD established the Air Installations Compatibility Use Zone (AICUZ) Program to balance the need for aircraft operations and community concerns over aircraft noise and accident potential. The objectives of the AICUZ program, according to the Chief of Naval Operations Instruction (OPNAVINST 11010.36C), are the following: 1) to protect the health, safety, and welfare of civilians and military personnel by encouraging land use which is compatible with aircraft operations; 2) to protect the US Department of Navy and Marine Corps installation investments by safeguarding the installation's operational capabilities; 3) to reduce noise impacts caused by aircraft operations while meeting operational, training, and flight safety requirements, both on and in the vicinity of air installations; and 4) to inform the public about the AICUZ program and seek cooperative efforts to minimize noise and aircraft accident potential impacts by promoting compatible development in the vicinity of military air installations (Department of the Navy, 2008). Accident potential zones (APZ) and Noise Zones are present at and adjacent to air operation areas (e.g., airfields, runways). APZs describe the probably impact area if an accident were to occur. Noise Zones are defined by noise contours that are developed by a computerized simulation of aircraft activity at the installation and reflect site-specific operational data (e.g., flight tracks, type and mix of aircraft, frequency and times of operations) (Department of the Navy, 2008).

EUL Site 4

There are no APZ present at EUL Site 4 (NAVFACWASH, 2010; Department of the Navy, 2008). Land use controls associated with APZ do not apply within EUL Site 4. EUL Site 4 is within Noise Zone 2 (65-69 decibels). Development within Noise Zone 2 is compatible with all land uses (e.g., commercial, recreational, industrial), except residential (Department of the Navy, 2008).

5.16 Notices of Violation

EUL Site 4

There are no documented Notices of Violations (NOVs) other than those pertaining to administrative concerns at NAS Patuxent (Smith, 2010a; Gray, 2010b). Therefore, no environmental conditions, restrictions, or land use controls associated with NOVs would apply to EUL Site 4.

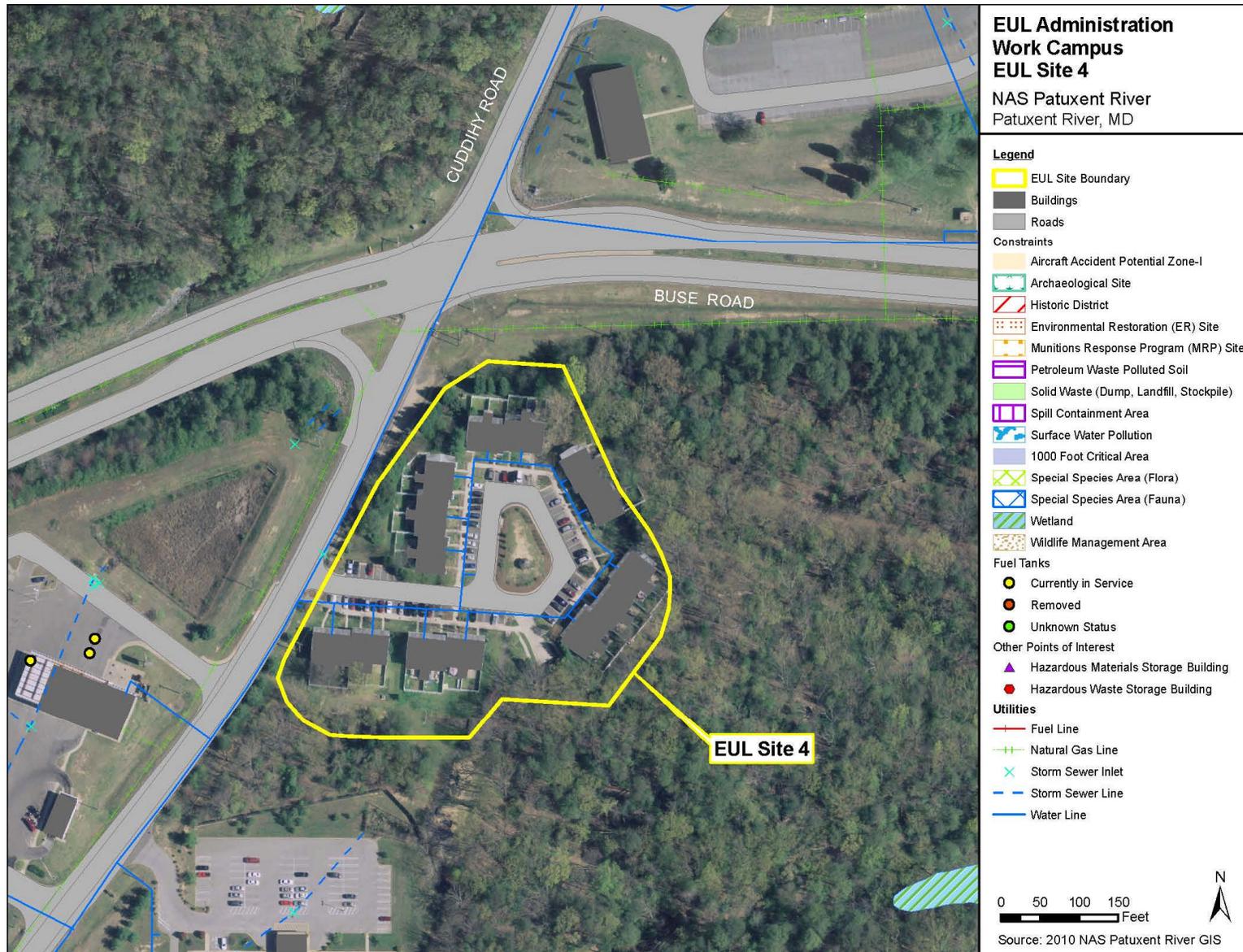


Figure 5-1. Site Conditions – EUL Site 4

6. ENVIRONMENTAL CONDITIONS OF ADJACENT PROPERTY

This ECP study evaluated the adjacent property with respect to all of the environmental considerations that are discussed in Section 5 (Environmental Conditions of Subject Property). This section presents only those adjacent property findings that could potentially affect development or use of EUL Site 4.

All adjoining properties of EUL Site 4 are within the boundaries of NAS Patuxent River. The Site is bounded by Cuddihy Road to the west, Buse Road to the north, and contiguous forest areas to the south, and east.

Tanks/Petroleum Contamination

A total of three USTs are associated with Building 2377 (NEX Gas Station). The gas station underwent major renovations to ensure tank compliance when the gas station was transferred from Citgo to NEX in 2006. No documented leaks or spills have been reported in regards to these tanks, which are inspected on a monthly basis (Costanzo, 2010). However, historical tank records may be incomplete, and there is some potential that undocumented tanks could be encountered during earthwork at the Station. Accordingly, there is also some potential for subsurface or groundwater contamination as a result of spills or leaks associated with any such undocumented tanks.

Pesticides and Herbicides

There are documented invasive species present adjacent to EUL Site 4; however, no pesticide or herbicide treatment has occurred. Therefore, no environmental conditions, restrictions, or land use controls associated with pesticide or herbicide contamination would apply to EUL Site 4.

Forests

Upland pine forested areas are located adjacent to EUL Site 4 and provide habitat for FIDS. However, minor clearing within EUL Site 4 will not affect FIDS habitat (Rambo, 2010).

7. CONCLUSIONS

Findings of this ECP report for EUL Site 4 and its adjacent properties are based on an extensive record search of available documents, a thorough review of the applicable and relevant documents, analysis of the Station's GIS, two visual surveys conducted on May 18, 2010 and June 1, 2010, and on-site interviews with personnel knowledgeable about the history of EUL Site 4. Findings related to the areas of environmental considerations that were evaluated during the ECP study include:

- Environmental Restoration – No documented ER sites are located within EUL Site 4 and no additional investigations are underway or anticipated within EUL Site 4.
- Munitions or Explosives of Concern – There are no documented MRP sites within EUL Site 4, and no explosives operations (e.g., munitions storage or handling) are known to have taken place within EUL Site 4. However, due to incomplete records and historical disposal practices at NAS Patuxent River, there is some potential to find MEC, including buried UXO, during earthwork at the Station. If MEC is discovered, earth disturbance in the vicinity of the discovery must cease and the location and description of the item(s) must be reported immediately to the Navy Project Manager.
- Tanks/Petroleum Contamination – No petroleum tanks are known to be present within EUL Site 4. Additionally, there are no historical records of tanks formerly within this site. However, historical tank records may be incomplete, and there is some potential that undocumented tanks could be encountered during earthwork at the Station. Accordingly, there is also some potential for subsurface or groundwater contamination as a result of spills or leaks associated with any such undocumented tanks..
- Hazardous Substances/Waste Management – There are no records of any hazardous waste storage or contamination at EUL Site 4.
- Solid/Bio-hazardous Waste – EUL Site 4 has not been associated with the generation, handling, or storage of bio-hazardous or solid waste.
- Polychlorinated Biphenyls – All transformers containing PCBs were retrofitted or replaced in the 1970s-1980s. No PCB program or reports have been developed due to the overall low risk of PCB equipment and exposure.
- Asbestos-Containing Material - Buildings 1600, 1601, 1602, 1603, 1604, and 1605 located at EUL Site 4 are currently being demolished. Potential ACM, if present, will be removed during demolition..
- Lead-Based Paint – Buildings 1600, 1601, 1602, 1603, 1604, and 1605 located on-site are currently being demolished. Potential LBP, if present, will be properly removed.

- Pesticides and Herbicides – There are no documented invasive species requiring the use of pesticides or herbicides on EUL Site 4.
- Radon/Radiological Material – A base-wide survey of radon levels was completed in the 1970's and 1980's. The survey found no radon levels of concern.
- Surface Water – There are no surface waters at EUL Site 4.
- Stormwater – Stormwater runoff generated by impervious surfaces in the housing area (e.g., roofs and walkways) flows along the road into the stormwater sewer system through an inlet located on the western boundary of the site. Any new development within EUL Site 4 must be designed and executed in accordance with applicable requirements of the following standards and regulations to ensure that stormwater impacts are minimized: Section 438 of EISA of 2007; Navy's LID policy; and Maryland's Stormwater Management Act of 2007.
- Groundwater – There are no known groundwater wells present within EUL Site 4; therefore, there is no site specific information on the groundwater.
- Forests – Contiguous forest stands adjacent to EUL Site 4 provide suitable habitat for FIDS. However, development and minor tree clearing within the site will not affect FIDS habitat. Any tree clearing is recommended to take place in the winter to avoid disrupting migratory birds.
- Wetlands – There are no wetlands within EUL Site 4.
- Floodplains – There are no floodplains within EUL Site 4.
- Coastal Zone – Development within EUL Site 4 will not affect the Maryland Coastal Zone or Critical Area..
- Essential Fish Habitat – There is no essential fish habitat within EUL Site 4.
- Threatened or Endangered Species – There are no federally- or state-listed threatened or endangered species at EUL Site 4.
- Historic Architectural Resources – No historic buildings or landscapes have been identified within EUL Site 4. However, once the lessee provides information about the development plans, the Navy will pursue consultation with SHPO to seek concurrence that there is no adverse effect to historic architectural resources.
- Archeological Resources – A Phase I survey has been performed, indicating that no potentially-significant archeological resources are known to be present at EUL Site 4. However, once the lessee provides information about the development plans, the Navy will pursue consultation with SHPO to seek concurrence that there is no adverse effect to archaeological resources.

- Air Quality – There are no sources of air emissions identified in the NAS Patuxent River Title V permit and no PTCs have been issued for construction of any emission units at EUL Site 4.
- Noise & Safety – There are no land use controls associated with APZ at EUL Site 4. EUL Site 4 is within Noise Zone 2 which is compatible with all land uses except residential.
- Notices of Violation - There are no documented NOV's other than those pertaining to administrative concerns at NAS Patuxent.

In accordance with DoD policy regarding the classification of properties that may exhibit hazardous substance or petroleum contamination (please reference Deputy Under Secretary of Defense Goodman Memorandum dated 21 October 1996), EUL Site 4 has been classified as Category 1. This category applies to properties where no release or disposal of hazardous substances or petroleum products has occurred (including no migration of these substances from adjacent areas). No releases, disposals, or mitigation of hazardous substances have been documented within or adjacent to EUL Site 4; therefore, there is no reason to suspect contamination.

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9. CERTIFICATION

Based on records reviews, site inspections, and interviews, the environmental professional(s) certify that the environmental conditions of the property are as stated in this document and this property is suitable for outgrant.

Environmental Professional:

Signature _____ Title _____

Print Name _____ Date _____

The real estate professional(s) acknowledge these restrictions and/or LUCs identified above and will ensure they are made a part of the outgrant document.

Real Estate Professional:

Signature _____ Title _____

Print Name _____ Date _____

Property Owner (Activity or Region) acknowledges and accepts the foregoing statement of environmental conditions and the land use controls (if any) that will be required for this real estate outgrant:

Signature _____ Title _____

Print Name _____ Date _____

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Appendix A
LIST OF CONTACTS

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List of Contacts

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Jim Swift	Natural Resources Specialist	james.swift@navy.mil	(301) 757-0006
Donna Weeks	Occupational Health and Safety	donna.weeks@med.navy.mil	(301) 757-0144

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Final

Enhanced Use Lease Site 5
Environmental Condition of Property Report
Administration Work Campus

Naval Air Station Patuxent River
Patuxent River, Maryland

Prepared for:



Naval Facilities Engineering Command Washington

Public Works Department

NAS Patuxent River

22445 Peary Road, Bldg. 504

Patuxent River, MD 20670-5504

Prepared by:



Eastern Research Group, Inc.

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July 2010

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ABBREVIATIONS, ACRONYMS, AND SYMBOLS

ACHP	Advisory Council on Historic Preservation
ACM	Asbestos-containing material
AHERA	Asbestos Hazard Emergency Response Act
AICUZ	Air Installations Compatibility Use Zone
APZ	Accident potential zone
AQCR	Air quality control region
ARPA	Archeological Resource Protection Act
AST	Aboveground storage tank
ATSDR	Agency for Toxic Substances and Disease Registry
BMP	Best Management Practice
BOQ	Bachelor Officer's Quarters
BRAC	Base Realignment and Closure
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CWA	Clean Water Act
CZM	Coastal Zone Management
DoD	Department of Defense
ECP	Environmental Condition of Property
EDR	Environmental Data Resources
EFH	Essential fish habitat
EISA	Energy Independence and Security Act
ENE	East-north-east
EO	Executive Order
ER	Environmental Restoration
ESA	Endangered Species Act of 1973
ESD	Environmental site design
EUL	Enhanced Use Lease
FFA	Federal Facility Agreement
FIDS	Forest Interior Dwelling Species
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FY	Fiscal Year
GIS	Geographic Information System
GMR	General management recommendations
IPMP	Integrated Pest Management Plan
IPT	Integrated Product Team
IRI	Interim Remedial Investigation
LBP	Lead-based paint
LID	Low impact development
LQG	Large Quantity Generator
LUC	Land use control
MBTA	Migratory Bird Treaty Act
MDE	Maryland Department of the Environment
MEC	Munitions and explosives of concern
MEP	Maximum extent practicable
mph	Miles per hour

MRP	Munitions Response Program
msl	Mean sea level
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act of 1990
NAS	Naval Air Station
NAVAIR	Naval Air Systems Command
NAVFAC	Naval Facilities Engineering Command
NAVRAMP	Naval Radon Assessment and Mitigation Program
NDW	Naval District Washington
NHPA	National Historic Preservation Act of 1966
NOAA	National Oceanographic & Atmospheric Administration
NOV	Notices of Violation
NRC	Naval Recreation Center
OPNAVINST	Office of the Chief of Naval Operations Instruction
PCBs	Polychlorinated biphenyls
PTC	Permit to Construct
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
RVs	Recreational vehicles
SDWA	Safe Drinking Water Act
SHPO	State Historic Preservation Officer
SVOC	Semi-volatile organic compounds
The Register	National Register of Historic Places
TSCA	Toxic Substances Control Act
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geologic Survey
UST	Underground storage tank
UXO	Unexploded ordnance

Executive Summary

Under its Enhanced Use Leasing (EUL) program, the Department of the Navy (hereinafter referred to as the “Navy”) is making available for lease non-excess real property for the development of new administrative space at the Naval Air Station (NAS) Patuxent River, Patuxent River, MD (hereinafter referred to as NAS Patuxent River or the “Station”). This Environmental Condition of Property (ECP) report was prepared for NAS Patuxent River EUL Site 5 (hereinafter referred to as “EUL Site 5”) and its adjacent properties. This report evaluates the current and former uses of the site; describes the environmental conditions of the land, facilities, and real property assets within the site; and summarizes any environmental restrictions, land use controls, and consultation requirements that may be necessary for development within EUL Site 5.

The ECP report findings for EUL Site 5 are based on a record search of readily available documents, a thorough review of the applicable and relevant documents, analysis of the NAS Patuxent River Geographic Information System (GIS), interviews with personnel knowledgeable about the site and its adjacent properties, and visual site investigations conducted on May 18, 2010 and June 1, 2010.

EUL Site 5 consists of approximately 13.22 (53,500 square meters) acres located on the western side of Buse Road across from the Naval Air Systems Command (NAVAIR) Integrated Product Team (IPT) Building. According to historical topographic maps, aerial photography, and property record cards, EUL Site 5 remained undeveloped and used as farmland until NAS Patuxent River was established in 1943. After the Station was established, EUL Site 5 as the former hospital complex. Hospital functions were relocated in 1969. Currently, the site primarily supports administrative functions.

Areas of potential environmental concern identified during the ECP study for EUL Site 5 and its adjacent properties are listed below by subject area:

- Hazardous Substances/Hazardous Waste;
- Asbestos-containing Material;
- Lead-based Paint;
- Forests;
- Wetlands; and
- Flight Operation Noise and Safety.

In accordance with DoD policy regarding the classification of properties that may exhibit hazardous substance or petroleum contamination (please reference Deputy Under Secretary of Defense Goodman Memorandum dated 21 October 1996), EUL Site 5 has been classified as Category 7. This category applies to properties that have not been evaluated or require additional evaluation. While no releases, disposals, or mitigation of hazardous substances have been documented within EUL Site 5, there is reason to suspect contamination. Possible contamination concerns at EUL Site 5 include groundwater contamination from nearby ER sites and soil contamination from former land use. Further evaluation of these contamination concerns should be performed prior to execution of any property transfer involving EUL Site 5.

1. INTRODUCTION

1.1 Introduction and Background

The Navy is making available for lease non-excess real property at the NAS Patuxent River, Patuxent River, Maryland (hereinafter referred to as NAS Patuxent River or the “Station”) under its EUL program.

NAS Patuxent River is located in Saint Mary’s County in Southern Maryland at the confluence of the Chesapeake Bay and the Patuxent River. NAS Patuxent River covers approximately 6,400 acres (25.9 square kilometers) with an additional 850 acres (3.4 square kilometers) at the Webster Field Annex, located about 15 miles (24.1 kilometers) south of the Station. The Naval Recreation Center (NRC) Solomons located across the Patuxent River in Solomons, Maryland is also under the administrative control of NAS Patuxent River and Naval District Washington (NDW). NRC Solomons encompasses approximately 300 acres (1.2 square kilometers) and is the largest outdoor recreation facility in the Navy. Figure 1-1 presents the location of NAS Patuxent River, Webster Field Annex, and NRC Solomons in the Washington, D.C. metropolitan area.

The Station supports naval aviation operations by researching, developing, testing and evaluating aircraft components and related products. The facilities are also used by foreign governments, academic institutions and private industry for similar projects. The Naval Aviation Systems Team at Patuxent River includes the Naval Air Station, the Webster Field Annex and the Naval Air Warfare Center Aircraft Division. NAS Patuxent River also is home to approximately 50 other tenant activities.

In support of the development of new administrative space through an EUL action, Naval Facilities Engineering Command (NAVFAC) Washington has prepared this ECP report for NAS Patuxent River EUL Site 5. The following report presents a summary of readily available information on the current and former uses, environmental conditions of, and concerns relative to, the land, facilities and real property assets at EUL Site 5.



Figure 1-1. Location of NAS Patuxent River in the Washington, D.C. Metropolitan Area

1.2 Organization of ECP Report

The ECP report is organized as follows:

- Section 2 (Survey Methodology) provides the methodology used to conduct the ECP study, including records review, site visit, and interviews.
- Section 3 (Past and Current Use) describes the current and former uses of the EUL site and the adjacent property.
- Section 4 (Environmental Setting) describes the environmental setting of the EUL site.
- Section 5 (Environmental Conditions of Subject Property) addresses the environmental conditions and related findings for the EUL site.
- Section 6 (Environmental Conditions of Adjacent Property) addresses the environmental conditions and related findings for property adjacent to the EUL site.
- Section 7 (Conclusions) presents the conclusions and recommendations of the ECP study.
- Section 8 (References) presents a list of references used in preparation of the ECP report.
- Section **Error! Reference source not found.** (Certification) provides certification of the ECP report.

1.3 Purpose of ECP Report

The purpose of this ECP report is to establish the environmental condition of the real property to support the proposed EUL real estate action. This ECP study is primarily based on the review of readily available information, visual site inspections, and interviews with personnel familiar with the site history to determine any environmental risks associated with the proposed site.

Readily apparent operational and regulatory compliance deficiencies of environmental program areas such as underground storage tanks (USTs), air emissions, lead-based paint, asbestos, pesticides, polychlorinated biphenyls (PCBs), radon, medical waste, munitions or explosives of concern, lead based paint, stormwater, and natural resources are also provided in the ECP report. This ECP study does not re-investigate or otherwise review the adequacy of previously conducted investigations or remedial actions.

This ECP report will provide baseline environmental conditions for EUL Site 5 pursuant to the following goals:

- To document inquiry into environmental conditions to support real estate decisions;
- To protect the Navy from future liability;
- To determine risk of exposure to grantees/government employees; and
- To inform grantees of environmental conditions, restrictions, and land use controls (LUCs) associated with the real property (Department of the Navy, 2006).

1.4 Parcel Identification and Boundaries

EUL Site 5 consists of approximately 13.22 (53,500 square meters) acres located on the western side of Buse Road across from the Naval Air Systems Command (NAVAIR) Integrated Product Team (IPT) Building. The site is developed and includes nine administrative buildings and associated parking lots. Figure 1-2 presents the location of EUL Site 5 at NAS Patuxent River.



Figure 1-2. EUL Site 5 – NAS Patuxent River

1.5 Legal Description

Facility Name and Address: Naval Air Station Patuxent River, 22268 Cedar Point Road,
Patuxent River, MD 20670

Property Owner: United States Government

Date of Ownership: 1 April 1943

Current Occupant: US Navy

Zoning: Military

County, State: St. Mary's, Maryland

USGS Quadrangle: Solomons Island, MD. 38076-C4-TF-024

Latitude, Longitude: 38°17'02.53"N, 76°26'55.76"W

Parcel Number: Not Available

2. SURVEY METHODOLOGY

2.1 Approach and Rationale

This ECP report was prepared to document the environmental conditions of, and concerns relative to, the land, facilities, and real property assets of EUL Site 5. The environmental conditions of properties adjacent to EUL Site 5 were also considered in this report.

This report serves as a summary of readily available information based on an extensive record search of available documents, a thorough review of the applicable and relevant documents, analysis of the Station's Geographic Information System (GIS), two visual surveys conducted on May 18, 2010 and June 1, 2010, and on-site interviews with personnel knowledgeable about the history of EUL Site 5. A visual inspection was completed for all buildings at EUL Site 5. However, a 100% visual reconnaissance of each building (e.g., attics, crawl spaces, restricted areas, etc.) was not practical due to accessibility restrictions.

Extensive environmental investigations and reports and pertinent historical documents were reviewed in support of this ECP report. However, no sampling or analysis of any media was conducted during this survey. Information obtained is reflected within this report by reference. A complete list of references is provided as Section 8 (References).

The information obtained from the Navy and other environmental reports were considered to be accurate unless reasonable inquiries indicated otherwise. New information or changes in site use could require a review and possible modification of the findings and conclusions contained in this report.

2.2 Property Classification Guidelines

Based on analysis of the available data, the EUL Site was classified into one of seven Department of Defense (DoD) Environmental ECP categories as defined by the S.W. Goodman Memorandum dated October 21, 1996. The property classification categories are as follows:

- Category 1: Areas where no release or disposal of hazardous substances or petroleum products has occurred (including no migration of these substances from adjacent areas).
- Category 2: Areas where only release or disposal of petroleum products has occurred.
- Category 3: Areas where release, disposal, and/or migration of hazardous substances has occurred, but at concentrations that do not require a removal or remedial response.
- Category 4: Areas where release, disposal, and/or migration of hazardous substances has occurred, and all removal or remedial actions to protect human health and the environment have been taken.
- Category 5: Areas where release, disposal, and/or migration of hazardous substances has occurred, and removal or remedial actions are underway, but all required remedial actions have not yet been taken.
- Category 6: Areas where release, disposal, and/or migration of hazardous substances has occurred, but required actions have not yet been implemented.
- Category 7: Areas that are not evaluated or require additional evaluation.

2.3 **Related Reports**

Related environmental reports used in the preparation of this ECP report include, but are not limited to the following:

- Final Environmental Impact Statement for Increased Flight and Related Operations in the Patuxent River Complex, Patuxent River, Maryland;
- Environmental Assessment for the Privatization of Navy Housing at Naval Station;
- Draft Final Environmental Assessment for Disposition of Excess Buildings;
- Integrated Natural Resources Management Plan;
- Tank Management Plan, Volume 1;
- (Environmental Restoration) Site Management Plan, 2009 Update;
- Cold War Historic Context (1945-1989) and Architectural Survey and Evaluation;
- Draft Integrated Pest Management Plan, Naval Air Station Patuxent River, Maryland;
- Environmental Baseline Survey Update - Electric Utility Privatization: Naval Air Station Patuxent River Main Base, Lexington Park, Maryland; Webster Field Annex, St. Inigoes, Maryland; & Naval Recreation Center Solomons, Solomons Island;
- Historic Landscape Survey, Naval Air Station Patuxent River, Webster Field, and Solomons Complex;
- Naval Air Station Patuxent River Spill Records Database;
- Building Asbestos Reports; and
- Draft Part 70 Operating Permit No. 24-037-0017.

A complete list of references is provided in Section 8 (References).

2.4 **Real Estate Document Review**

A comprehensive property history of EUL Site 5 was created by reviewing Property Record Cards maintained by NAS Patuxent River for all former and current buildings and infrastructure located within the site. Historical land use records and personal interviews were used to understand property use and condition prior to the Navy taking ownership of the property. In addition, an environmental data and historical records package including a radius report, relevant historical aerial photographs, and topographic maps of the site was obtained from Environmental Data Resources (EDR) on May 20, 2010. Section 3 (Past and Current Use) presents the past and current use of EUL Site 5.

3. PAST AND CURRENT USE

3.1 Installation History

Prior to the early 20th century, NAS Patuxent River remained undeveloped and was used primarily for farming. Several plantations existed in the area, including Eltonhead Manor (1648), Susquehanna (1649), and Mattapany-Sewell (1663). A topographic maps dated 1905, indicates that a small community called Pearson was located near the current northwest boundary of the Station, which consisted of a few residences, post office, a store, automobile dealer, and a church. The community was no longer represented on any historical maps more recently dated than 1943 (NAVFAC, Atlantic Division, 2009b; EDR, 2010a; EDR, 2010b).

NAS Patuxent River was commissioned on April 1, 1943, in an effort to centralize widely dispersed air testing facilities that had been established prior to World War II. This consolidation effort was swift, and the farming operations on the property were replaced by flight test operations within a year after the 1943 ground breaking for construction. The U.S. Naval Test Pilot School was established in 1958. In 1975, the Naval Air Test Center began to assume its role as the Naval Air Systems Command's principal site for development testing. Test facilities were upgraded in the late 1970s, with some of the largest construction appropriations in the history of the base (NAVFAC, Atlantic Division, 2009b; EDR, 2010a; EDR, 2010b).

Within the last decade, several new facilities were established at NAS Patuxent River due to Base Realignment and Closure (BRAC) actions. More than \$155 million has been budgeted for new engineering complexes and renovation of existing facilities. These include the Aircraft Technologies Lab; North Engineering Center; South Engineering Center; Frank Knox School improvement; Integrated Project Team Building; and the Propulsion System Evaluation Facility. The Aircraft Technologies Lab and the North and South Engineering Centers combined are occupied by 1,300 people recently relocated to NAS Patuxent River (Department of the Navy, 2002).

NAS Patuxent River is largely developed with aircraft runways, taxiways, hangars, and supporting structures and equipment. Residential communities, commercial properties, schools, churches, and recreational areas are also present. The Station is improved with water, wastewater, electric, and natural gas service.

3.2 Subject Property

According to historical topographic maps and property record cards, EUL Site 5 remained undeveloped and used as farmland until NAS Patuxent was established in 1943. After NAS Patuxent was established, Buildings 433, 434, 435, 436, 437, 438, 439, 440, 441, and 462 were immediately built and served as part of the former hospital complex. Hospital functions were relocated to Building 1370 in 1969. Table 3-1 summarizes the facilities and history of functions on EUL Site 5. Figure 5-1 illustrates the locations of existing facilities at EUL Site 5.

Due to development at EUL Site 5, terrain at the site is generally flat. However, the terrain slopes sharply towards a depression in the northwestern boundary of the site. Due to the presence of steep slopes, development in the northwestern portion of the site may be constrained. The highest elevation point at the site is approximately 70 feet (21 meters) above mean sea level (msl) and the lowest elevation point is approximately 50 feet (15 meters) above msl.

Table 3-1. Facilities – EUL Site 5

Facility Number/Name	Built Date	Function(s)
Building 433	1943	Transient Quarters (Female), Dispensary, Training Building, DIFMS Office Administration
Building 434	1943	Dispensary, Hospital Infirmary, Child Care Center
Building 435	1943	Dispensary, Legal Office
Building 436	1943	Dispensary, Primary Care Clinic - Occupational Health
Building 437	1943	Dispensary, Comptroller
Building 438	1943	Dispensary, Comptroller/Payroll Office
Building 439	1944	Mess Hall for Dispensary, Administrative Office
Building 440	1944	Maternity Ward, Administrative Office
Building 462	1944	Dental Lab, Administrative Office
Building 441	1944	Morgue, demolished within last 10 years

3.3 Adjacent Property

According to historical topographic maps and property record cards, adjacent property remained undeveloped and used as farmland until NAS Patuxent River was established in 1943. Development to the southwest of EUL Site 5 began immediately after commission of the Station. Table 3-2 summarizes the existing adjacent facilities and functions. Figure 5-1 illustrates the locations of EUL Site 5 adjacent area facilities.

Table 3-2. Adjacent Area Facilities

Facility Number/Name	Built Date	Function(s)
Building 406	1944	Bachelor Officers’ Quarters (BOQ)
Building 464	1946	Barracks and Wave Office Quarters
Building 2272	1997	Naval Air Systems Command (NAVAIR) Integrated Product Team (IPT) Building

Property adjacent to the site provides a range of outdoor recreation activities including hunting, hiking, and bird-watching. The Outdoor Recreation Program at NAS Patuxent River relieves pressure from recreational areas in the community and generates a positive impact on the Station's staff productivity and retention (Department of the Navy, 2002).

4. ENVIRONMENTAL SETTING

4.1 Location

NAS Patuxent River is located in the southern portion of St. Mary's County, Maryland, at latitude 38°17'N and longitude 76°25'W, approximately 54 miles (87 kilometers) southeast of Washington, DC. St. Mary's County is the southernmost part of Maryland's western shore and consists of a peninsula surrounded by tidal water on all but the northwestern boundary. NAS Patuxent River occupies a small peninsula and broad headland (known as Cedar Point) at the confluence of the Patuxent River and Chesapeake Bay in the eastern portion of the county. The Station, which comprises approximately 6,400 acres (25.9 square kilometers), is bounded by the Patuxent River to the north, the Chesapeake Bay to the east, and the town of Lexington Park, Maryland to the south and west (NAVFAC, Atlantic Division, 2009b). Figure 1-1 presents the location of NAS Patuxent River, Webster Field Annex and NRC Solomons in the Washington, D.C. metropolitan area.

4.2 Climatology

NAS Patuxent River lies within the Humid Temperate, Semi-Continental Climate Zone. The Station's proximity to the Patuxent and Potomac Rivers, the Chesapeake Bay, and their tributaries affects the local climate. The atmospheric flow in this region is from west to east across North America, and there are four distinct seasons. Prevailing winds are from the northwest, except during the warm months, when they are more southerly. Average wind speeds are approximately nine miles per hour (mph), although winds may reach in excess of 60 mph on rare occasions. Windiest periods in this region include late winter and early spring. Additionally, other extreme weather events, such as tornadoes, hurricanes, and blizzards occur during other seasons, but are very rare.

Normal temperatures for the region range from an average low of 29°F and an average high of 44°F in January (the coldest month) to an average low of 70°F and an average high of 86°F in July (the warmest month).

The annual mean precipitation for the area is approximately 41.7 inches (1.1 meters), with approximately 15 inches (0.381 meters) of this amount occurring as snowfall. Precipitation occurs evenly throughout the year, with slight increases occurring in July and August. In summer, precipitation occurs mostly through thunderstorms, which occur on an average of 33 days per year. Drought may occur in any season but is most likely to occur in the summer (Department of the Navy, 2002).

4.3 Geology

The geological deposits underlying NAS Patuxent River are thick, unconsolidated beds of sand, silt, clay, and gravel resulting from marine deposits. Because these formations are entirely sedimentary in nature, they are extremely vulnerable to erosion. NAS Patuxent River is primarily underlain with a Matapeake-Mattapex-Sassafras soil association with smaller areas of a Sassafras- Beltsville association and Othello-Mattapex association (Department of the Navy, 2002).

The dominant surface sediments at the Station were deposited during the Quaternary Period, primarily Sunderland, Wicomico, and Talbot deposits. Layers that outcrop in St. Mary's County were deposited during the Tertiary and Quaternary Periods. The Station is underlain by a Cretaceous layer, which consists of Arundel, Patapsco, Raritan, Magothy, Matawan, and Monmouth formations (Department of the Navy, 2002).

4.4 Hydrogeology

There are three principal groundwater aquifers beneath NAS Patuxent River: Piney Point-Nanjemoy Aquifer, Aquia Aquifer, and Patapsco Aquifer. The Piney Point- Nanjemoy Aquifer is a major source of potable water for residential users in southern Maryland. The Aquia Aquifer is the principal source of potable and industrial water for both the Station and local public water suppliers. The Station also has two water supply wells tapping into the Patapsco Aquifer.

The elevation of the water table beneath the Station ranges from sea level along the coastal areas to approximately 80 feet (24 meters) below msl in the southwestern portion of the facility (Department of the Navy, 2009).

Several major drainage areas collect precipitation runoff from the Station. This runoff goes directly to one of four hydraulic sinks: (1) Patuxent River, (2) Chesapeake Bay, (3) estuary areas, or (4) freshwater creeks and ponds and associated wetland areas. All of the runoff from the Station eventually flows to the Chesapeake Bay.

There are six constructed ponds located on the Station. Except for Richneck Pond, all are located in the southern and western portions of the Station and serve to control runoff and provide fish and wildlife habitats, recreation, and a source of water for firefighting. In addition to these water bodies, there are low-lying areas throughout the Station that tend to act as temporary stormwater storage areas, helping to control runoff rates and downstream flooding (Department of the Navy, 2002).

4.5 Topography

The terrain at NAS Patuxent River rises gradually from the Chesapeake Bay shoreline westward. A majority of the Station (70 percent) is level and fairly well-drained. Some low areas are somewhat-poorly-drained to poorly-drained, and become intermittently flooded and/or saturated. The southwestern portion of the Station is hilly, with the highest elevations on the Station.

The United States Geologic Survey (USGS) Solomons Island, Maryland quadrangle indicates a general topographic gradient of east-north-east (ENE) for the Station. Elevation averages 35 feet (10 meters) above msl at the center of the Station, with higher elevations on the western portion of the property and lower elevations on the north and east boundaries with the Patuxent River and the Chesapeake Bay, respectively (EDR, 2010a; EDR, 2010b).

5. ENVIRONMENTAL CONDITIONS OF SUBJECT PROPERTY

This section discusses various aspects of the affected environment within EUL Site 5 and provides regulatory background, discussion of resources or features present, and an overview of restrictions, land use controls, and consultation requirements that may be necessary for development within this site.

A site map (Figure 5-1) was developed using GIS data retrieved from the Navy. The map displays the pertinent environmental constraints identified in the site. The map is not comprehensive and is intended only to support the information provided in this report.

5.1 Environmental Restoration

The Environmental Restoration (ER) program at NAS Patuxent River was established to comply with the Federal Facility Agreement (FFA) signed on December 2000 between the Navy and the EPA Region III. The ER program identifies, investigates, and environmentally restores sites containing hazardous substances to reduce the risk to human health and the environment. The ER program also incorporates the Munitions Response Program (MRP), which manages the environmental, health, and safety issues presented by unexploded ordnance (UXO), discards munitions, munitions constituents, and other munitions and explosives of concern (MEC) found on-base (Department of the Navy, 2009b).

Due to the historical use of NAS Patuxent River and procedures once used to treat and dispose of waste and munitions, the installation as a whole is at risk for environmental contamination. A variety of facility-wide, multi-site and single site environmental investigations have been conducted at NAS Patuxent River to identify and assess the presence of contaminants in areas of potential concern. The Station's Site Management Plan identifies 56 specific environmental restoration sites at NAS Patuxent River (Department of the Navy, 2009). Numerous additional investigations are underway or are anticipated to begin during Fiscal Year (FY) 2010 and FY 2011.

EUL Site 5

Upon review of the Site Management Plan, it has been determined that no documented ER sites are located within EUL Site 5 and no additional investigations are underway or anticipated within EUL Site 5 (Department of the Navy, 2009). Therefore, no environmental conditions, restrictions, or land use controls associated with the ER program would apply to EUL Site 5.

5.2 Munitions or Explosives of Concern

EUL Site 5

There are no documented MRP sites within EUL Site 5, and no explosives operations (e.g., munitions storage or handling) are known to have taken place within EUL Site 5. However, due to incomplete records and historical disposal practices at NAS Patuxent River, there is some potential to find MEC, including buried UXO, during earthwork at the Station (Simpson, 2010; NAVFACWASH, 2010). If MEC is discovered, earth disturbance in the vicinity of the discovery must cease and the location and description of the item(s) must be reported immediately to the Navy Project Manager.

5.3 Tanks/Petroleum Contamination

Storage tanks are classified based on their location and referred to as aboveground storage tanks (AST) and underground storage tanks (UST). Through the Resource Conservation and Recovery Act's (RCRA) Hazardous and Solid Waste Amendments, EPA established a federal program to regulate USTs containing petroleum and hazardous chemicals to limit corrosion and structural defects and thus minimize future tank leaks. In addition, the amendments directed EPA to set operating requirements and technical standards for tank design and installation, leak detection, spill and overfill control, corrective action, and tank closure. The UST program is implemented in Maryland by the Maryland Department of the Environment (MDE) (USEPA, 2010b).

Storage tanks at NAS Patuxent River are used to store a variety of petroleum products to support mission-related activities. NAS Patuxent River has an active Tank Management Plan that lists both ASTs and USTs currently in use, regulatory requirements for each storage tank, and ensures proper inspection and maintenance is performed (Naval Air Station Patuxent River, Maryland, 2008). Spills and resulting soil contamination from ASTs, USTs, or other sources of petroleum are documented and stored in a spill database specific to NAS Patuxent River and separate to the Tank Management Plan. The spill database contains a complete record of spills dating back to 1994.

EUL Site 5

EUL Site 5 has one AST located adjacent to Building 438. Fuel tank #438 has a capacity of 250 gallons and contains diesel fuel to supply a back-up generator (Naval Air Station Patuxent River, Maryland, 2008; NAVFACWASH, 2010). The tank is inspected on a monthly basis. Additionally, there are no historical records of tanks formerly within this site. However, historical tank records may be incomplete, and there is some potential that undocumented tanks could be encountered during earthwork at the Station. Accordingly, there is also some potential for subsurface or groundwater contamination as a result of spills or leaks associated with any such undocumented tanks. (Costanzo, 2010).

5.4 Hazardous Substances/Hazardous Waste

Hazardous substances and hazardous waste are defined by EPA as a material that exhibits a characteristic of ignitability, corrosivity, reactivity, or toxicity, or is specifically listed as a hazardous material. Several federal environmental policies list and require special handling procedures for certain hazardous substances, including the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), Toxic Substances Control Act (TSCA), and RCRA. CERCLA, better known as the Superfund, ensures liability and clean-up of abandoned hazardous material by responsible parties provides (USEPA, 2010d). EPA controls hazardous substances through the TSCA, which addresses chemical substances and mixtures whose manufacture, processing, distribution, use, or disposal may present an unreasonable risk of injury to health or the environment (Department of the Navy, 2009b). RCRA is broad in its regulatory management of solid and hazardous waste, including cleanup, through corrective action, of releases of hazardous waste at RCRA-regulated facilities, such as NAS Patuxent River. RCRA requires cradle-to-grave management of hazardous waste through a recordkeeping system that tracks shipments of hazardous waste. Hazardous waste treatment, storage, and disposal facilities are regulated through the issuance of operating permits. EPA has delegated the enforcement of RCRA in Maryland to MDE.

On-site accumulation times for hazardous waste at NAS Patuxent River are restricted to the applicable time frames referenced in 40 CFR 262.34 and other applicable Maryland laws or regulations. Non-explosive hazardous waste is transported to an approved, off-site hazardous waste treatment, storage, or disposal facility in accordance with Department of Transportation regulations. The hauling and disposal of demolition debris, including hazardous wastes containing lead, asbestos, and air conditioner refrigerant, is performed in compliance with local, state, and federal codes and requirements.

NAS Patuxent River is listed in the EDR as a Large Quantity Generator (LQG) of hazardous wastes (EDR, 2010c). There are 50 buildings designated as satellite accumulation areas for hazardous waste. Pursuant to 40 CFR 262.34(c)(1), these points may accumulate as much as 55 gallons (208 liters) of hazardous waste or one quart of acutely hazardous waste. Once they become full, containers at these satellite accumulation points must be transferred to one of the 38 active less-than-90-day central accumulation sites at NAS Patuxent River.

EUL Site 5

No hazardous substances or wastes are generated within EUL Site 5. However, there are small amounts of mercury and other hazardous wastes which are used and stored in minimal amounts for use in the occupational health lab in Building 436 (Olson, 2010). These materials do not pose any significant threat of contamination. The former morgue (currently the site of the parking lot for Building 462) had continuous problems with formaldehyde and mercury leaks within the building. Prior to demolition of the morgue and construction of the current parking lot, it is unknown if the soil was remediated for previous formaldehyde and mercury contamination. In addition, GIS shows Building 439 as a hazardous waste storage building (NAVFACWASH, 2010). However, during discussions with hospital personnel and current building occupants, it was determined that hazardous waste was never stored in the complex at any time (Grudzinsakas, 2010; Weeks, 2010)

5.5 Solid/Bio-hazardous Waste

Solid waste is any garbage, refuse, sludge, or other discarded material including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, agricultural, or community activities (Department of the Navy, 2009b). Bio-hazardous waste, or medical waste, is defined as all waste generated at health care facilities, such as hospitals, clinics, physician's offices, dental practices, blood banks, and veterinary hospitals/clinics, as well as medical research facilities and laboratories. Solid and bio-hazardous waste generators, transporters, destruction facilities, and disposal facilities are subject to RCRA, and applicable state and local regulations and regulatory requirements that prohibit disposing of solid waste in open dumps and require bio-hazardous waste be treated and disposed of safely (USEPA, 2010c).

EUL Site 5

When EUL Site 5 was the former hospital complex, the facilities generated bio-hazardous waste, which was picked up on a daily or weekly basis and incinerated at the Station incinerator or St. Mary's County incinerator (Grudzinsakas, 2010). There are no records showing any bio-hazardous waste contamination during the time the facility operated as a hospital. Currently, only Buildings 434 (Day Care) and 436 (Primary Care Clinic / Occupational Health) generate bio-hazardous waste (Weeks, 2010). However, these amounts are minimal and do not pose a

significant risk of contamination (Olson, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with solid or bio-hazardous waste would apply to EUL Site 5.

5.6 Polychlorinated Biphenyls

The TSCA authorizes EPA to secure information on all new and existing chemical substances and to control any of these substances that could cause an unreasonable risk to public health or the environment. PCBs are regulated under Title I, Control of Toxic Substances, which includes provisions for testing chemical substances and mixtures, manufacturing and processing notices, regulating hazardous chemicals substances and mixtures, managing imminent hazards, and reporting and retaining information.

EUL Site 5

PCB's were originally used at NAS Patuxent River in transformers located throughout the installation. However, all transformers containing PCBs were retrofitted or replaced in the 1970s and 1980s. No PCB program or reports have been developed due to the overall low risk of PCB equipment and exposure (Ichniowski, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with solid or bio-hazardous waste would apply to EUL Site 5.

Prior to the demolition of existing EUL Site 5 facilities, lighting fixtures within buildings to be demolished should be inspected to determine whether they may contain PCBs. If any suspect PCB-containing fixtures are present, the demolition contractor must follow the Unified Facilities Guide Specifications, Section 02 84 16, "Handling of Lighting Ballasts and Lamps Containing PCBs and Mercury".

5.7 Asbestos-Containing Material

Asbestos abatement is regulated under the TSCA Title II, Asbestos Hazard Emergency Response, which was added by the Asbestos Hazard Emergency Response Act (AHERA). AHERA provides for the promulgation of federal regulations requiring inspection for asbestos and appropriate response actions in schools and mandates periodic reinspection. In addition, it requires EPA Administrators to determine "the extent of the danger to human health posed by asbestos in public and commercial buildings and the means to respond to any such danger" (Department of the Navy, 2009c).

Several of the buildings at NAS Patuxent River were built prior to health concerns related to asbestos-containing material (ACM) arose and regulations were implemented. An asbestos survey was completed for buildings suspected of having ACM during the early 1990s. A report was completed for each building and mitigation and clean-up efforts were completed thereafter (Apex Environmental, Inc., 1993). However, due to the likelihood that ACM remains present in many buildings, it should be assumed that all buildings subject to renovation or demolition contain ACM unless a report demonstrates otherwise.

EUL Site 5

Buildings 433, 434, 435, 436, 437, 438, 439, and 440 are documented as having ACM. Examples of ACM include adhesive, fire doors, floor tile, transite, insulation, joints, and various debris. A thorough report by Apex Environmental, Inc. was completed for each building that identified the location and type of ACM. A follow-up Asbestos Survey reassessed each building after mitigation and clean-up efforts, classifying the ACM by its condition of no damage, little damage, abated, or non-friable, with the vast majority classified as abated or non-friable (Apex Environmental, Inc. 1993, EDR, 2010a; EDR, 2010b; NAVFACWASH, 2010). No further action has been taken.

Prior to the demolition of existing EUL Site 5 facilities, the contractor must follow the Unified Facilities Guide Specifications, Section 13281N, "Engineering Control of Asbestos Containing Materials" for actions involving handling, demolition, or disposal of ACM. The contractor and the NAS Patuxent Environmental and Safety Offices will be responsible for work plan development, state/federal agency notification, execution of ACM abatement, waste management, and manifest documentation in accordance with current environmental and safety procedures (O'Connell, 2010; Morley, 2010).

5.8 Lead-based Paint

The use of toxic lead-based paint (LBP) was banned in 1977 by the Consumer Product Safety Commission. The MDE has established the Lead Poisoning Prevent Program to enhance citizen safety and prevent exposure to LBP (MDE, 2010b).

Before it was removed from the market, LBP was commonly used on the exterior and interior walls during the renovation or construction of buildings at NAS Patuxent River. Many of these buildings remain today. No comprehensive survey of LBP containing-buildings has been completed for NAS Patuxent River. Due to the age of many buildings at NAS Patuxent River and lack of LBP mitigation or clean-up efforts, it is suspected that buildings built before 1978 contain LBP unless documentation demonstrates otherwise.

EUL Site 5

Buildings 433, 434, 435, 436, 437, 438, 439, and 440 were built from 1943-1944, therefore it must be assumed that EUL Site 5 has lead-based paint (LBP) present (EDR, 2010a; EDR, 2010b; NAVFACWASH, 2010). No sampling data, comprehensive LBP reports, or documentation of mitigation or clean-up efforts exists. Prior to any actions affecting Buildings 433, 434, 435, 436, 438, 439, and 440, a survey for LBP must be performed for the building and its associated infrastructure. If this survey determines that LBP is present, the contractor must follow the Unified Facilities Guide Specifications, Section 13283N, "Removal/Control and Disposal of Paint with Lead" for actions involving the handling, demolition, or disposal of lead-based paint (O'Connell, J. 2010).

5.9 Pesticides and Herbicides

NAS Patuxent maintains an Integrated Pest Management Plan (IPMP), which is a long-range planning and operational tool that establishes the strategy and methods for conducting a safe, effective, and environmentally sound integrated pest management program. The IPMP covers all pest management and pesticide-related activities conducted within all areas of the installation. The IPMP was developed in accordance with Navy guidance (e.g., OPNAVINST 6250.4) and

applicable laws and regulations, such as the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). FIFRA provides the basis for regulation, sale, distribution and use of pesticides in the US, and addresses applicator certification requirements, record keeping, and penalties for pesticide misuse (NAVFAC, Atlantic Division, 2009a).

EUL Site 5

There are documented invasive species present at EUL Site 5; however, no pesticide or herbicide treatment has occurred. Therefore, no environmental conditions, restrictions, or land use controls associated with pesticide or herbicide contamination would apply to EUL Site 5 (Smith, 2010b).

5.10 Radon/Radiological Material

Indoor radon concentrations are regulated under TSCA Title III (Indoor Radon Abatement). In response, the Navy established the Radon Assessment and Mitigation Program (NAVRAMP) which identifies, assesses, and mitigates the infiltration of radon into existing Navy-occupied buildings and incorporates preventive practices in the design and construction of new buildings.

EUL Site 5

St. Mary's County is classified as Zone 2 by the EPA, indicating a moderate potential for elevated indoor radon levels. However, a base-wide survey of radon levels was completed in the 1970s and 1980s. The survey found no radon levels of concern; therefore, no radon program is established at the Station (Ichniowski, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with elevated radon levels would apply to EUL Site 5.

5.11 Water Quality

5.11.1 *Surface Water*

Important aquatic resources at NAS Patuxent include the Patuxent River, Chesapeake Bay, Pine Hill Run, Goose Creek, Pearson Creek, Harper's Creek, and six freshwater ponds. These open water areas range from brackish to freshwater systems and support a variety of fish and wildlife resources. NAS Patuxent is situated on a peninsula at the mouth of the Patuxent River. Of NAS Patuxent's approximately 6,400 acres (25.9 square kilometers), 1,041 acres (4.2 square kilometers) are open water or wetland (discussed in Section 5.12.2 (Wetlands)). This acreage is comprised of six freshwater ponds; several perennial and intermittent streams; four estuaries; two seaplane basins; a partially enclosed sea-wall; and numerous saline, freshwater tidal, and nontidal marshes, in addition to forested and scrub/shrub wetlands (Department of the Navy, 2002).

NAS Patuxent shares boundaries with two significant resources – the Chesapeake Bay and the Patuxent River. The Chesapeake Bay, with its associated salt marshes, is the largest estuary in North America and one of the most productive in the world. Its bounty of finfish, shellfish, crabs, and waterfowl is world-renowned. The Patuxent River is one of the rivers initially designated as part of the Maryland State Wild and Scenic Rivers Program. In addition, while no Maryland river is on the National Wild and Scenic Rivers System, Patuxent River is listed in the

Nationwide Rivers Inventory as having the significant resource values required for potential inclusion (Department of the Navy, 2002).

NAS Patuxent contains many miles of intermittent and perennial headwater streams. Streams usually occupy well-defined channels where topographic gradients are steeper or where they have been channeled. In the level, low-lying areas, streams often occupy split or braided channels. Those streams occurring in densely forested areas have not all been detected by photo interpretation or mapped.

EUL Site 5

There are no surface waters at EUL Site 5 (Department of the Navy, 2002). Therefore, no environmental conditions, restrictions, or land use controls associated with surface waters would apply to EUL Site 5.

5.11.2 Stormwater

Stormwater is generated when precipitation runs off from land and impervious areas such as paved streets, parking lots, and building rooftops. Stormwater runoff can collect pollutants such as oil and grease, chemicals, nutrients, metals, and bacteria as it travels across land, and it also causes soil erosion when traveling at velocities sufficient to carry sediment particles. The Clean Water Act (CWA) regulates both direct and indirect discharges of “priority” pollutants that are often conveyed by stormwater, such as total suspended solids, fecal coliform, and oil and grease. Stormwater is typically managed using structural or nonstructural Best Management Practices (BMPs). Structural BMPs include control systems such as infiltration devices, ponds, filters and constructed wetlands, while nonstructural BMPs include low impact development (LID) practices and management measures (USEPA, 2004).

EUL Site 5

Stormwater runoff generated by impervious surfaces in the administrative office area (e.g., roofs and walkways) flows along the road on the eastern boundary into the stormwater sewer system through inlets located on the southern boundary of the site. Additional runoff flows to vegetated areas surrounding the site. Any new development within EUL Site 5 must be designed and executed in accordance with applicable requirements of the following standards and regulations to ensure that stormwater impacts are minimized. Pursuant to Section 438 of the Energy Independence and Security Act (EISA) of 2007, development with a footprint greater than 5,000 SF (465 square meters) must maintain or restore to the maximum extent practicable pre-development hydrology with respect to temperature, rate, volume, and duration of flow (U.S. Congress, 2007). Pursuant to the Navy’s LID policy, the Navy sets a goal of no net increase in stormwater volume and sediment or nutrient loading from construction projects (Department of the Navy, 2007). Pursuant to Maryland’s Stormwater Management Act of 2007, development with a footprint greater than 5,000 SF must implement environmental site design (ESD), to the maximum extent practicable (MEP) in accordance with Section 4.0 Stormwater Management Criteria of the 2000 Maryland Stormwater Design Manual. Additionally, re-development with a footprint greater than 5,000 SF must implement ESD to the MEP to provide water quality treatment for a minimum of 50 percent of the existing impervious area within the limits of disturbance. For additional information, please reference the 2000 Maryland Stormwater Design Manual (MDE, 2009; MDE, 2010).

5.11.3 Groundwater

The Safe Drinking Water Act (SDWA) was originally passed by Congress in 1974 to protect public health by regulating the nation's public drinking water supply. The law was amended in 1986 and 1996 and requires the protection of drinking water and its sources – rivers, lakes, reservoirs, springs, and groundwater wells. SDWA authorizes the US EPA to set national health-based standards for drinking water to protect against both naturally-occurring and man-made contaminants that may be found in drinking water (USEPA, 2010f).

The drinking water at NAS Patuxent is pumped from the Piney Point/Nanjemoy, Aquia, and Patapso aquifers – groundwater sources below St. Mary's County. The Compliance Division of the NAVFACWASH Public Works Environmental Division at NAS Patuxent River is responsible for both groundwater monitoring and protection of groundwater well locations on the Station. However, to date, no formal Source Water or Wellhead Protection Plan has been written (NAVFAC, Atlantic Division, 2009b).

EUL Site 5

There are no known groundwater wells present within EUL Site 5; therefore, there is no site specific information on the groundwater. Records exist of past formaldehyde and mercury leaks at the former morgue (current site of the parking lot for Building 462). Due to incomplete historic tank records, it is unknown whether additional tanks may have existed previously within EUL Site 5 prior to 2008. Therefore, it is unknown whether contaminated subsurface soil or groundwater may be present as a result of past land use.

5.12 Natural Resources

5.12.1 Forests

Forested areas account for approximately 42 percent (2,817 acres, 11.6 square kilometers) of the land cover at NAS Patuxent. The forests on NAS Patuxent are presented in four broad classifications of forest types: bottomland pine; upland pine; bottomland hardwood; and upland hardwood (Department of the Navy, 2002).

Pine forests are defined as areas dominated mainly by trees of the genus *Pinus*, consisting of needle-leaved evergreen species. Upland pine forest accounts for 7 percent (207 acres, 837,700 square meters) of the forests encountered on NAS Patuxent. Bottomland pine forest consists of needle-leaved evergreen species in areas where the water table is at a depth sufficient to influence the development of oxygen-reducing conditions and create hydric soil and hydrophytic vegetation characteristics. This forest type accounts for 1 percent (24 acres, 97,100 square meters) of the forests encountered on NAS Patuxent. Upland hardwood forests consist of hardwood tree species in areas where the water table is below a depth where hydric characteristics develop in the soils and plant community. This forest type accounts for 21 percent (581 acres, 2,351,000 square meters) of the forests encountered on NAS Patuxent. Pine species also occur in combination with hardwood tree species to form mixed forest types. This mixed forest type accounts for 21% (580 acres, 2,350,200 square meters) of the forests encountered on NAS Patuxent.

NAS Patuxent is an important migratory bird area as a result extensive forest stands throughout the base. The Migratory Bird Treaty Act (MBTA) protects migratory birds and their habitats, and establishes a permitting process for legal taking. Except as permitted, actions of the Navy may not result in pursuit, hunting, taking, capture, killing, possession, or transportation of any migratory bird, bird part, nest, or egg thereof.

The potential for commercial forest products such as poletimber, sawtimber, pulpwood, and firewood is an added economic benefit afforded by the forested areas on NAS Patuxent. All merchantable timber that is cut on NAS Patuxent is considered Navy Real Property and must be disposed of properly, with appropriate disbursement to the Navy Forestry Account.

The most important management prescription proposed for wildlife habitat concerns is the designation of a large, contiguous forest block on the south side of the Station. This forested area will benefit many rare, threatened, and endangered species that are known to and/or have the potential to inhabit the region. The most important indicator of the success of the forest management prescription for the maintenance and restoration of critical ecosystem functions is the monitoring of Forest Interior Dwelling Species (FIDS). These species are considered "area sensitive" species and require some critical mass of contiguous forest type in order to survive. The monitoring of populations of these species is crucial in determining the success of the forest block (Department of the Navy, 2002).

EUL Site 5

There are upland pine forest stands located within EUL Site 5 (Navy Enhanced Use Lease Patuxent River, 2010; NAVFACWASH, 2010; Department of the Navy, 2002; Rambo, 2010). Clearing of large portions of this forest may affect the 300-foot Water Quality Protection Zone surrounding the nearby wetland, and would affect a forest stand that is considered to be suitable habitat for forest interior dwellers (FID) species. However, much of this forested area is assumed to be undevelopable due to steep slopes. Any tree clearing within the Water Quality Protection Zone or otherwise affecting FID habitat may require mitigation according to NEPA evaluation. Specific mitigation requirements would be determined by the Environmental Division at NAS Patuxent. Any tree clearing is recommended to take place in the winter to avoid disrupting migratory birds. All merchantable timber that is cut on NAS Patuxent is considered Navy Real Property and must be disposed of properly, with appropriate disbursement to the Navy Forestry Account (Department of the Navy, 2002).

5.12.2 Wetlands

The United States Army Corps of Engineers (USACE) and EPA define jurisdictional wetlands as areas that are inundated or saturated by surface water or groundwater frequently and long enough to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands provide important plant and wildlife habitat and serve as buffers and filters essential for maintaining the water quality of nearby surface waters.

The wetlands at NAS Patuxent River are protected by Section 404 of the CWA, Executive Order (EO) 11990 (Wetland Protection), and applicable state regulations, including the Maryland Nontidal Wetlands Protection Act, Maryland Tidal Wetlands Act, and the Waterway and 100-Year Floodplain Construction Regulations. Section 404 of the CWA prohibits the discharge of

dredged or fill material into wetlands or other waters of the United States if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's water would be significantly degraded. Regulated activities are controlled by a permit review process administered by the USACE (USEPA, 2010e).

EO 11990 was implemented in 1977 to protect wetlands and their associated ecosystem services. This EO directs each federal agency to avoid undertaking or providing assistance for new construction located in wetlands unless the head of the agency finds that 1) there is no practicable alternative to such construction, and 2) all practicable measures will be taken to minimize impacts to the wetlands. In addition, the Navy has a “no net loss” policy requiring the replacement of any wetlands destroyed or eliminated through a project.

To protect jurisdictional wetlands, MDE requires maintaining an area surrounding a wetland called a buffer. Activities that may disturb or occur within a non-tidal or tidal wetland or surrounding buffer are regulated under COMAR 26.23 and COMAR 26.24, respectively. According to COMAR 26.23.01, a buffer is a regulated area, 25 feet in width, surrounding a nontidal wetland, and measured from the outer edge of the non-tidal wetland. MDE requires the action proponent to obtain a Non-tidal Wetlands and Waterways Permit for any activity that alters a non-tidal wetland or its 25-foot buffer.

The Chesapeake Bay Critical Area Commission requires maintaining a 100-foot buffer around tidal wetlands and streams to improve runoff water quality and reduce the amounts of toxic substances entering tidal waters (Critical Area Commission, 2008). The Navy maintains these areas at NAS Patuxent by avoiding removal of trees within 100-foot riparian buffers wherever possible (U.S. Department of the Navy, 2008).

Wetland delineations for NAS Patuxent were performed with data collection between June and October 1995. This technique produced a wetland delineation that was conservative and probably included some upland areas. These delineations were not flagged or surveyed in the field; therefore they should be considered rough estimates (Rambo, 2010; Smith, 2010a; Department of the Navy, 2002).

EUL Site 5

According to the NAS Patuxent River GIS, there are no documented wetlands present within EUL Site 5. However, shrub/scrub wetlands are found immediately adjacent to EUL site 5 along the north boundary of the site. Prior to development of EUL Site 5, consultation with NAS Patuxent River Environmental Division personnel is required to determine the need for a site-specific wetland survey. Please refer to Section 6 (Environmental Conditions of Adjacent Property) for additional information.

5.12.3 Floodplains

A floodplain is the area along or adjacent to a stream or a body of water that is capable of storing or conveying floodwaters. Floodplains perform important natural functions, including moderating peak flows, maintaining water quality, recharging groundwater, and preventing erosion. In addition, floodplains provide wildlife habitat, recreational opportunities, and aesthetic benefits. To protect floodplains and minimize future flood damage, EO 11988 Floodplain Management restricts development within the 100-year floodplain. A 100-year floodplain is

defined as an area that is subject to a one-percent or greater chance of flooding in any given year. Under EO 11988, all federal agencies must 1) determine if any of their actions would occur within a floodplain, 2) evaluate the potential effects of these actions, and 3) analyze alternatives to these actions.

There are no floodplains within EUL Site 5 (Department of the Navy, 2002). Therefore, no environmental conditions, restrictions, or land use controls associated with floodplains would apply to EUL Site 5.

5.12.4 Coastal Zone

Maryland's Coastal Zone Management (CZM) Program was created in response to the passage of the Federal Coastal Zone Management Act of 1972. The goal of this program is to "preserve, protect, develop and, where possible, restore our coastal resources." Maryland's CZM Program was created in 1978 and is a network of state laws and policies designed to protect coastal and marine resources. Maryland's coastal zone includes 3,190 miles of coast in 16 counties and Baltimore City (MDNR, 2002). This area includes the Chesapeake Bay, coastal bays, and the Atlantic Ocean, as well as the towns, cities, and counties that have jurisdiction over the coastline. Maryland's coastal zone encompasses two thirds of the state's land area and is home to greater than 65 percent of the state's residents (MDNR, 2002). Federally controlled lands are excluded from the coastal zone per 16 U.S.C. 1453, Section 304, Paragraph (1). However, the Coastal Zone Management Act requires all federal activities that could affect land, water, or natural resources on the coastal zone to be consistent to the maximum extent practicable with the enforceable policies of the approved state CZM program. That is, even if the action occurs on federal land (excluded from the coastal zone), the action must be consistent to the maximum extent practicable with the state CZM program if it affects coastal resources.

As previously mentioned in Section 5.11.1 (Surface Water), the Chesapeake Bay Critical Area Law regulates all lands under the tidal influence of the Chesapeake Bay and its tributaries up to the head of the tide, as well as wetlands connected to these waters. It also regulates land within a 1,000-foot boundary inland from that line. The Critical Area Law is included within Maryland's Coastal Zone Management Program. Any disturbance within the Critical Area would require consultation with the Chesapeake Bay Critical Area Commission.

EUL Site 5

EUL Site 5 development will not impact the Maryland Coastal Zone or Critical Area. Therefore, no environmental conditions, restrictions, or land use controls associated with the Maryland Coastal Zone or Critical Area would apply to EUL Site 5

5.12.5 Essential Fish Habitat

Fish and invertebrate species and their habitat are regulated and protected by several federal laws. The most notable of the federal laws is the Fishery Conservation and Management Act of 1976, which was reauthorized and amended by the Sustainable Fisheries Act in 1996 and is now popularly designated as the Magnuson-Stevens Fishery Conservation and Management Act. These acts mandated habitat conservation for federally managed fish species via the conservation tool known as essential fish habitat (EFH). The EFH mandate required that regional fishery management councils, through Federal Fishery Management Plans, describe and identify EFH

for each federally managed species, minimize to the extent practicable any adverse effect on such habitat caused by fishing, and identify other actions to encourage the conservation and enhancement of such habitats. EFH is defined by Congress for managed species as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (16 U.S.C. 1802[10]). Within the vicinity of the NAS Patuxent River (upper Chesapeake Bay), EFH has been designated for 11 of the 23 EFH fish species found in the Chesapeake Bay.

EUL Site 5

There is no essential fish habitat within EUL Site 5 (Department of the Navy, 2002). Therefore, no environmental conditions, restrictions, or land use controls associated with essential fish habitat would apply to EUL Site 5.

5.12.6 Threatened or Endangered Species

The Endangered Species Act of 1973 (ESA) protects federally-listed threatened, endangered, and candidate species of fish, wildlife, and plants and their designated critical habitats. Under this law, no federal action is allowed to jeopardize the continued existence of an endangered or threatened species. ESA also requires consultation with the United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (now called National Oceanographic & Atmospheric Administration (NOAA) Fisheries Service) and the preparation of a biological assessment when such species are present in an area that is affected by government activities (USFWS, 2010).

EUL Site 5

Based on previous surveys and discussions with NAS Patuxent River Environmental Division personnel, there are no federally- or state-listed threatened or endangered species at EUL Site 5 (Smith, 2010a; Smith, 2010b; Department of the Navy, 2002). Therefore, no environmental conditions, restrictions, or land use controls associated with threatened or endangered species would apply to EUL Site 5.

5.13 Cultural Resources

The National Historic Preservation Act of 1966 (NHPA), enacted under 16 United States Code (U.S.C.) 470, provides for the National Register of Historic Places (the Register), defines National Historic Landmarks, provides for the designation of a State Historic Preservation Officer (SHPO), and establishes the Advisory Council on Historic Preservation (ACHP). The Register lists sites, districts, buildings, structures, and objects of significance in American history, architecture, archeology, engineering, and culture. These resources may be of local, State, or national significance. Section 106 of the NHPA requires federal agencies to consider the effects of undertakings (i.e., actions) on any resource that is included or eligible for inclusion in the Register, and to afford the ACHP a reasonable opportunity to comment on such undertakings. In Maryland, the Maryland Historical Trust (a division of the Maryland Department of Planning) serves as the SHPO and also participates in Section 106 consultations. Pursuant to OPNAVINST 5090.1C, Chapter 5-5, an Environmental Assessment must be prepared for any proposed action that would have an adverse effect on resources listed or determined to be eligible for listing in the Register.

Section 110 of the NHPA requires federal agencies to establish a preservation program for the identification, evaluation, nomination (for the Register), and protection of historic properties. To this end, the Navy performs surveys and investigations to identify any historic properties under its jurisdiction.

5.13.1 Historic Architectural Resources

The most recent architectural and historic landscape evaluation of NAS Patuxent was performed in October 2009 (NAVFACWASH, 2009; NAVFACWASH, 2010). The surveys identified architectural resources and determined if resources were eligible for listing on the Register.

EUL Site 5

No historic buildings or landscapes have been identified within EUL Site 5 (Smolek, 2010). Therefore, no environmental conditions, restrictions or land use controls associated with the presence of known historical architectural resources would apply to Site 5. However, once the lessee provides information about the development plans, the Navy will pursue consultation with SHPO to seek concurrence that there is no adverse effect to historic architectural resources.

5.13.2 Archeological Resources

Archeological resources are material remains of past life or activities (Reinke & Swartz, 1999). Some examples of archeological resources include pottery, basketry, bottles, weapons, tools, rock paintings, rock carvings, and gravesites.

The Native American Graves Protection and Repatriation Act of 1990 (NAGPRA), enacted under 25 U.S.C. 3001, prohibits the intentional removal of certain types of Native American cultural items from Federal or tribal lands. Removal of cultural items may be permitted under an Archeological Resource Protection Act (ARPA) permit, which includes authorization and a written agreement between the federal agency and an appropriate repository that will house and curate the collection recovered from the project, and in consultation with the appropriate Native American groups (USDI, 2010). NAGPRA provides for the return of burial remains, associated funerary objects, sacred objects, and objects of cultural patrimony to the appropriate tribes. It established Native American ownership of human remains and associated artifacts discovered on Federal lands after the date of enactment (USDI, 2010).

EUL Site 5

A Phase I archeological survey, which locates archeological resources, has been performed at NAS Patuxent to make generalizations about the type and distribution of archeological properties that may be present. This survey indicated that no potentially-significant resources are known to be present at EUL Site 5 (Smolek, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with the presence of known archeological resources would apply to EUL Site 5. However, once the lessee provides information about the development plans, the Navy will pursue consultation with SHPO to seek concurrence that there is no adverse effect to archaeological resources.

5.14 Air Quality

Air quality is regulated under the authority of Title I, Part A, Section 109 of the Clean Air Act (CAA). EPA has established health-based National Ambient Air Quality Standards (NAAQS) for the criteria pollutants carbon monoxide, nitrogen dioxide, ozone, particulate matter, lead, and sulfur dioxide. To monitor and meet the NAAQS, the CAA divides the United States into geographic areas called “air quality control regions” (AQCRs). St. Mary’s County, where NAS Patuxent River is located, is a designated AQCR. An AQCR in which levels of a criteria air pollutant meet the health-based NAAQS is defined as an *attainment* area for the pollutant, while an area that does not meet the NAAQS is designated a *nonattainment* area for the pollutant. An area that was once designated a nonattainment area but was later reclassified as an attainment area is known as a *maintenance* area. An area may have an acceptable level for one criteria air pollutant but may have unacceptable levels for other criteria air pollutants. Thus, an area could be attainment, maintenance, and nonattainment at the same time for different pollutants.

In addition to NAAQS requirements, federal agencies must obtain permits to operate equipment that generates air emissions. Title V of the CAA establishes an operating permit program that requires all air quality requirements for a source to be combined into one comprehensive permit document. All major sources of air pollutants are required to apply for a Title V permit, which is valid for five (5) years. In addition to complying with the Title V operating permit, the CAA requires that federal agencies comply with state and local air quality requirements in the same manner as any non-governmental entity. NAS Patuxent River has received a Title V operating permit that includes 126 sources of air emissions, in addition to various insignificant emission units (Naval Air Station Patuxent River, Maryland, 2010).

Pursuant to COMAR 26.11.02.09, any new source of emissions must be issued a Permit to Construct (PTC) by MDE prior to installation. A PTC allows the installation of the unit and provides operating requirements that apply until the unit is incorporated into the next renewal of the Title V operating permit.

EUL Site 5

The AQCR of St. Mary’s County is an attainment area for all criteria pollutants of the CAA. The most recent Title V operating permit for NAS Patuxent River is effective on July 1, 2010 and expires June 30, 2015. There is one source of air emissions identified in the Title V permit at EUL Site 5. At Building 439, there is natural gas/No. 2 oil-fired boiler rated at 2.70 million Btu per hour heat input was installed in May 1999. No PTCs have been issued for construction of any emission units at EUL Site 5 (Ichniowski, 2010). There are no documented environmental

conditions at EUL Site 5 due to air emissions. Any changes, including demolition, made to the identified source of air emissions must be reported and approved by the MDE.

5.15 Flight Operation Noise & Safety

In the early 1970s, the DoD established the Air Installations Compatibility Use Zone (AICUZ) Program to balance the need for aircraft operations and community concerns over aircraft noise and accident potential. The objectives of the AICUZ program, according to the Chief of Naval Operations Instruction (OPNAVINST 11010.36C), are the following: 1) to protect the health, safety, and welfare of civilians and military personnel by encouraging land use which is compatible with aircraft operations; 2) to protect the US Department of Navy and Marine Corps installation investments by safeguarding the installation's operational capabilities; 3) to reduce noise impacts caused by aircraft operations while meeting operational, training, and flight safety requirements, both on and in the vicinity of air installations; and 4) to inform the public about the AICUZ program and seek cooperative efforts to minimize noise and aircraft accident potential impacts by promoting compatible development in the vicinity of military air installations (Department of the Navy, 2008). Accident potential zones (APZ) and Noise Zones are present at and adjacent to air operation areas (e.g., airfields, runways). APZs describe the probably impact area if an accident were to occur. Noise Zones are defined by noise contours that are developed by a computerized simulation of aircraft activity at the installation and reflect site-specific operational data (e.g., flight tracks, type and mix of aircraft, frequency and times of operations) (Department of the Navy, 2008).

EUL Site 5

The southern portion of EUL Site 5 is within an Accident Potential Zone (APZ)-I. APZ-I restricts land uses to exclude housing, some manufacturing (e.g., chemical and petroleum manufacturing), some services (e.g., cemeteries, warehousing), retail, and cultural, entertainment, and recreational (e.g., fairgrounds, camps, parks) development (NAVFACWASH, 2010; Department of the Navy, 2008). EUL Site 5 is within Noise Zone 2 (70-74 decibels). Development within Noise Zone 2 is compatible with all land uses (e.g., commercial, recreational, industrial), except residential (Department of the Navy, 2008).

5.16 Notices of Violation

EUL Site 5

There are no documented Notices of Violation (NOVs) other than those pertaining to administrative concerns at NAS Patuxent (Smith, 2010a; Gray, 2010b). As a result, no environmental conditions, restrictions, or land use controls associated with NOVs would apply to EUL Site 5.

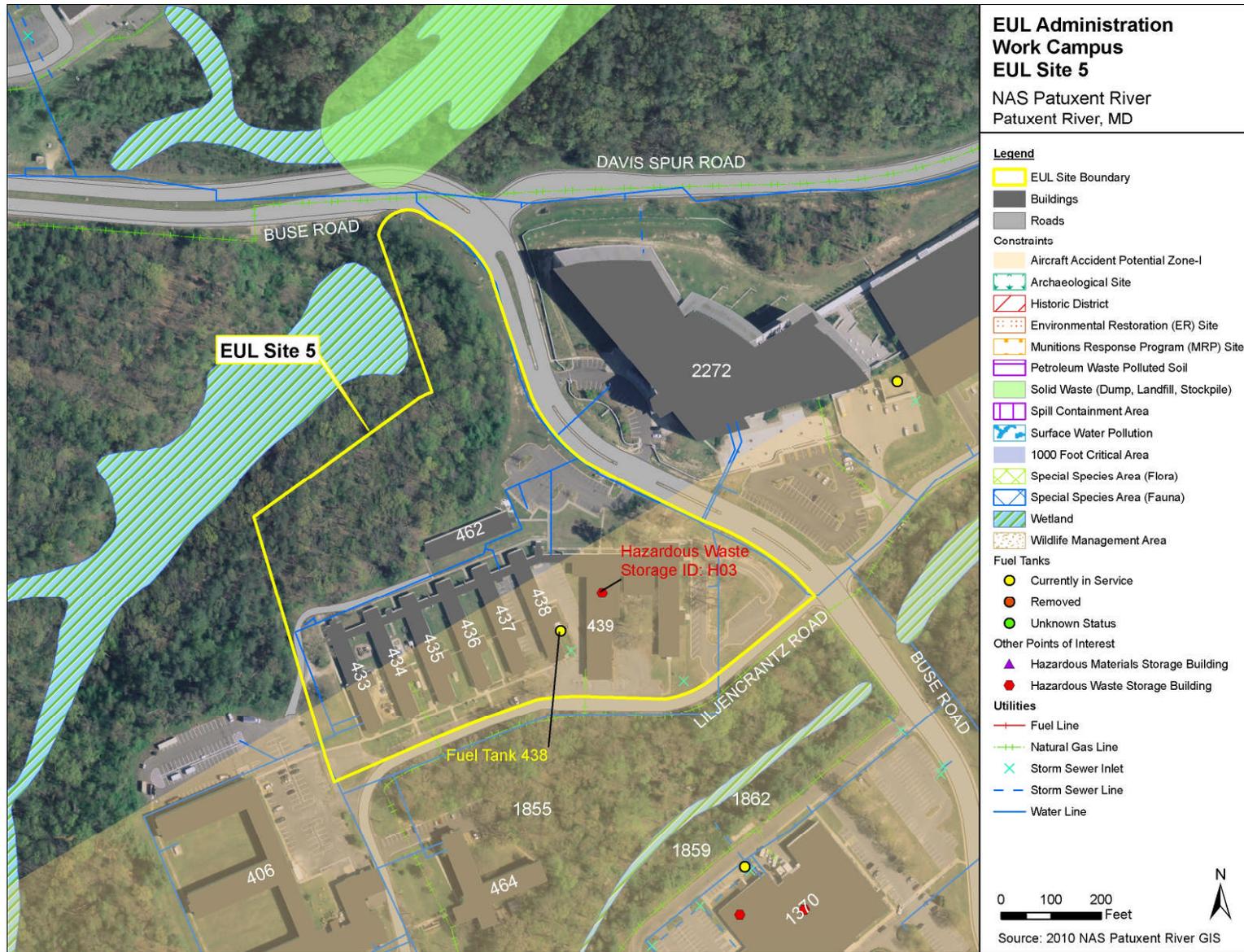


Figure 5-1. Site Conditions – EUL Site 5

6. ENVIRONMENTAL CONDITIONS OF ADJACENT PROPERTY

This ECP study evaluated the adjacent property with respect to all of the environmental considerations that are discussed in Section 5 (Environmental Conditions of Subject Property). This section presents only those adjacent property findings that could potentially affect development or use of EUL Site 5.

All adjoining properties of EUL Site 5 are within the boundaries of NAS Patuxent River. The site is bounded by Buse Road to the east, Liljencrantz Road to the south, forested area to the west and scrub/shrub wetlands to the north (see Figure 5-1).

Environmental Restoration

Approximately 1,500 ft to the northeast lies ER Site #2 (Disposal Site at Pond #1). A Naval Assessment and Control of Installation Pollutants Program confirmation study was conducted at ER Site #2 between 1985 and 1987. The results showed elevated concentrations of semi-volatile organic compounds (SVOCs) and pesticides in sediment and fish samples. An Interim Remedial Investigation (IRI) was conducted at ER Site #2 in 1991, confirming low concentrations of metals, a PCB compound, and several pesticides in sediment samples. Low concentrations of metals and a pesticide were also found in fish samples. The Agency for Toxic Substances and Disease Registry (ATSDR) conducted health assessment at NAS Patuxent River in 1995 and 1996 and concluded that fish consumption from Pond #1 should be limited to 19 meals per year for 7 years until additional data is available for risk assessment. A Remedial Investigation/Feasibility Study (RI/FS) is scheduled for 2011 to further characterize the site. (Department of the Navy, 2009; NAVFACWASH, 2010)

Solid/Bio-hazardous Waste

Adjacent to north side of EUL Site 5 is an unconfirmed area identified by the GIS data as a Solid Waste Dump Area. This area includes ER Site #2 (Disposal Site at Pond #1) and extends to within 100 feet of EUL Site 5 (see Figure 5-1) (NAVFACWASH, 2010). There are no historical records for the Solid Waste Dump Area delineated in GIS.

Wetlands

Shrub/scrub wetlands are found immediately adjacent to EUL site 5 along the northern boundary of the site (NAVFACWASH, 2010). All wetlands adjacent to EUL Site 5 should be flagged and surveyed according to general management recommendations (GMR) in order to determine wetland delineation. If development occurs within a 100 ft (30.48 m) buffer of any wetlands, they must be delineated according to CWA Section 404. Sediment/erosion control and stormwater measures must be implemented as necessary to prevent any sediment transport into wetlands. These plans must be reviewed and approved by the MDE for projects exceeding 5,000 SF (464.5 square meters) or 100 cubic yards of disturbance. MDE requires the action proponent to obtain a Non-tidal Wetlands and Waterways Permit for any activity that alters a non-tidal wetland or its 25 ft (7.62 m) buffer (MDE, 2009; MDE, 2010; U.S. Congress, 2007).

Noise

An APZ-I extends south of EUL Site 5 (NAVFACWASH, 2010). APZ-I possess a measurable potential for accidents beyond the flight track. As a result, land use within APZ-I should be restricted to low population density functions, such as manufacturing (Department of the Navy, 2008).

7. CONCLUSIONS

Findings of this ECP report for EUL Site 5 and its adjacent properties are based on an extensive record search of available documents, a thorough review of the applicable and relevant documents, analysis of the Station's GIS, two visual surveys conducted on May 18, 2010 and June 1, 2010, and on-site interviews with personnel knowledgeable about the history of EUL Site 5. Findings related to the areas of environmental considerations that were evaluated during the ECP study include:

- Environmental Restoration – No documented ER sites are located within EUL Site 5 and no additional investigations are underway or anticipated. Approximately 1,500 ft to the northeast lies ER Site #2 (Disposal Site at Pond #1). However, due to the natural flow of groundwater from high to low, there is a minimal risk of contamination to EUL Site 5 from ER Site #2.
- Munitions or Explosives of Concern – There are no documented MRP sites within EUL Site 5, and no explosives operations (e.g., munitions storage or handling) are known to have taken place within EUL Site 5. However, due to incomplete records and historical disposal practices at NAS Patuxent River, there is some potential to find MEC, including buried UXO, during earthwork at the Station. If MEC is discovered, earth disturbance in the vicinity of the discovery must cease and the location and description of the item(s) must be reported immediately to the Navy Project Manager.
- Tanks/Petroleum Contamination – EUL Site 5 has one AST located adjacent to Building 438. However, due to incomplete historic tank records there is some potential that undocumented tanks could be encountered during earthwork at the Station. Accordingly, there is also some potential for subsurface or groundwater contamination as a result of spills or leaks associated with any such undocumented tanks
- Hazardous Substances/Waste Management – No hazardous substances or wastes are generated within EUL Site 5. However, small amounts of mercury and other hazardous wastes are used and stored in minimal amounts for use in the occupational health lab (Building 436). These materials do not pose any significant threat of contamination. The former morgue (currently the site of the parking lot for Building 462) had continuous problems with formaldehyde and mercury leaks within the building. It is unknown if the soil was remediated for previous formaldehyde and mercury contamination.
- Solid/Bio-hazardous Waste – There are no past records showing any bio-hazardous waste contamination during the time the facility operated as a hospital. Currently, only Buildings 434 and 436 generate minimal amounts of bio-hazardous waste and do not pose a significant risk of contamination. Adjacent to north side of EUL Site 5 is an unconfirmed area identified by the GIS data as a Solid Waste Dump Area.

- Polychlorinated Biphenyls – All transformers containing PCBs were retrofitted or replaced in the 1970s-1980s. No PCB program or reports have been developed due to the overall low risk of PCB equipment and exposure.
- Asbestos-Containing Material – Buildings 433, 434, 435, 436, 437, 438, 439, and 440 are documented as having ACM.
- Lead-Based Paint – Buildings 433, 434, 435, 436, 437, 438, 439, and 440 were built from 1943-1944, therefore it must be assumed that EUL Site 5 has LBP present.
- Pesticides and Herbicides – There are documented invasive species present at EUL Site 5; however, no pesticide or herbicide treatment has occurred.
- Radon/Radiological Material – A base-wide survey of radon levels was completed in the 1970's and 1980's. The survey found no radon levels of concern.
- Surface Water – There are no surface waters at EUL Site 5.
- Stormwater – Stormwater runoff generated by impervious surfaces in the administrative office area (e.g., roofs and walkways) flows along the road on the eastern boundary into the stormwater sewer system through inlets located on the southern boundary of the site. Any new development within EUL Site 5 must be designed and executed in accordance with applicable requirements of the following standards and regulations to ensure that stormwater impacts are minimized: Section 438 of EISA of 2007; Navy's LID policy; and Maryland's Stormwater Management Act of 2007.
- Groundwater – There are no known groundwater wells present within EUL Site 5; therefore, there is no site specific information on the groundwater. It is unknown whether contaminated subsurface soil or groundwater may be present as a result of past land use.
- Forests – Contiguous forested and vegetated areas are located within EUL Site 5. Forest clearing may affect the 300-foot Water Quality Protection Zone surrounding the nearby wetland, and would affect a forest stand that is considered to be suitable habitat for FIDS.
- Wetlands – Prior to development of EUL Site 5, consultation with NAS Patuxent River Environmental Division personnel is required to determine the need for a site-specific wetland survey due to the potential presence of wetlands adjacent to the north boundary.
- Floodplains – There are no floodplains within EUL Site 5.
- Coastal Zone – Development within EUL Site 5 will not impact the Maryland Coastal Zone or Critical Area.

- Essential Fish Habitat – There is no essential fish habitat within EUL Site 5.
- Threatened or Endangered Species – There are no federally- or state-listed threatened or endangered species at EUL Site 5.
- Historic Architectural Resources – No historic buildings or landscapes have been identified within EUL Site 5. However, once the lessee provides information about the development plans, the Navy will pursue consultation with SHPO to seek concurrence that there is no adverse effect to historic architectural resources.
- Archeological Resources – A Phase I survey has been performed, indicating that no potentially-significant archeological resources are known to be present at EUL Site 5. However, once the lessee provides information about the development plans, the Navy will pursue consultation with SHPO to seek concurrence that there is no adverse effect to archaeological resources.
- Air Quality – There is one sources of air emissions identified in the NAS Patuxent River Title V permit (natural gas/No. 2 oil-fired boiler). No PTCs have been issued for construction of any emission units at EUL Site 5. There are no documented environmental conditions at EUL Site 5 due to air emissions.
- Noise & Safety – EUL Site 5 is partially located within APZ-I which restricts land development. EUL Site 5 is within Noise Zone 2 which is compatible with all land uses except residential.
- Notices of Violation - There are no documented NOV's other than those pertaining to administrative concerns at NAS Patuxent.

In accordance with DoD policy regarding the classification of properties that may exhibit hazardous substance or petroleum contamination (please reference Deputy Under Secretary of Defense Goodman Memorandum dated 21 October 1996), EUL Site 5 has been classified as Category 7. This category applies to properties that have not been evaluated or require additional evaluation. While no releases, disposals, or mitigation of hazardous substances have been documented within EUL Site 5, there is reason to suspect contamination. Possible contamination concerns at EUL Site 5 include groundwater contamination from nearby ER sites and soil contamination from former land use. Further evaluation of these contamination concerns should be performed prior to execution of any property transfer involving EUL Site 5.

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9. CERTIFICATION

Based on records reviews, site inspections, and interviews, the environmental professional(s) certify that the environmental conditions of the property are as stated in this document and this property is suitable for outgrant.

Environmental Professional:

Signature _____ Title _____

Print Name _____ Date _____

The real estate professional(s) acknowledge these restrictions and/or LUCs identified above and will ensure they are made a part of the outgrant document.

Real Estate Professional:

Signature _____ Title _____

Print Name _____ Date _____

Property Owner (Activity or Region) acknowledges and accepts the foregoing statement of environmental conditions and the land use controls (if any) that will be required for this real estate outgrant:

Signature _____ Title _____

Print Name _____ Date _____

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Appendix A
LIST OF CONTACTS

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List of Contacts

Contact Name	Title/Position	Email Address	Telephone Number
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Mike Smolek	Cultural Resources Manager	michael.a.smolek@navy.mil	(301) 757-4774
Jim Swift	Natural Resources Specialist	james.swift@navy.mil	(301) 757-0006
Donna Weeks	Occupational Health and Safety	donna.weeks@med.navy.mil	(301) 757-0144

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Final

Enhanced Use Lease Site 6
Environmental Condition of Property Report
Administration Work Campus

Naval Air Station Patuxent River
Patuxent River, Maryland

Prepared for:



Naval Facilities Engineering Command Washington
Public Works Department
NAS Patuxent River
22445 Peary Road, Bldg. 504
Patuxent River, MD 20670-5504

Prepared by:



Eastern Research Group, Inc.
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July 2010

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ABBREVIATIONS, ACRONYMS, AND SYMBOLS

ACHP	Advisory Council on Historic Preservation
ACM	Asbestos-containing material
AMERA	Asbestos Hazard Emergency Response Act
AICUZ	Air Installations Compatibility Use Zone
APZ	Accident potential zone
AQCR	Air quality control region
ARPA	Archeological Resource Protection Act
AST	Aboveground storage tank
BMP	Best Management Practice
BRAC	Base Realignment and Closure
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CWA	Clean Water Act
CZM	Coastal Zone Management
DoD	Department of Defense
ECP	Environmental Condition of Property
EDR	Environmental Data Resources
EFH	Essential fish habitat
EISA	Energy Independence and Security Act
ENE	East-north-east
EO	Executive Order
ER	Environmental Restoration
ESA	Endangered Species Act of 1973
ESD	Environmental site design
EUL	Enhanced Use Lease
FFA	Federal Facility Agreement
FIDS	Forest Interior Dwelling Species
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FY	Fiscal Year
GIS	Geographic Information System
IPMP	Integrated Pest Management Plan
LBP	Lead-based paint
LID	Low impact development
LQG	Large Quantity Generator
LUC	Land use control
MBTA	Migratory Bird Treaty Act
MDE	Maryland Department of the Environment
MEC	Munitions and explosives of concern
MEP	Maximum extent practicable
mph	Miles per hour
MRP	Munitions Response Program
msl	Mean sea level
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act of 1990
NAS	Naval Air Station

NAVFAC	Naval Facilities Engineering Command
NAVRAMP	Naval Radon Assessment and Mitigation Program
NDW	Naval District Washington
NHPA	National Historic Preservation Act of 1966
NOAA	National Oceanographic & Atmospheric Administration
NOV	Notices of Violation
NRC	Naval Recreation Center
OPNAVINST	Office of the Chief of Naval Operations Instruction
PCBs	Polychlorinated biphenyls
PTC	Permit to Construct
RCRA	Resource Conservation and Recovery Act
RVs	Recreational vehicles
SDWA	Safe Drinking Water Act
SHPO	State Historic Preservation Officer
The Register	National Register of Historic Places
TSCA	Toxic Substances Control Act
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geologic Survey
UST	Underground storage tank
UXO	Unexploded ordnance

Executive Summary

Under its Enhanced Use Leasing (EUL) program, the Department of the Navy (hereinafter referred to as the “Navy”) is making available for lease non-excess real property for the development of new administrative space at the Naval Air Station (NAS) Patuxent River, Patuxent River, MD (hereinafter referred to as NAS Patuxent River or the “Station”). This Environmental Condition of Property (ECP) report was prepared for NAS Patuxent River EUL Site 6 (hereinafter referred to as “EUL Site 6”) and its adjacent properties. This report evaluates the current and former uses of the site; describes the environmental conditions of the land, facilities, and real property assets within the site; and summarizes any environmental restrictions, land use controls, and consultation requirements that may be necessary for development within EUL Site 6.

The ECP report findings for EUL Site 6 are based on a record search of readily available documents, a thorough review of the applicable and relevant documents, analysis of the NAS Patuxent River Geographic Information System (GIS), interviews with personnel knowledgeable about the site and its adjacent properties, and visual site investigations conducted on May 18, 2010 and June 1, 2010.

EUL Site 6 consists of approximately 3.26 acres (13,200 square meters) located near the NAS Patuxent River Gate 1 entrance, east of the Patuxent River Naval Air Museum aircraft display. According to historical topographic maps, aerial photography, and property record cards, EUL Site 6 was undeveloped until NAS Patuxent River was established in 1943. After the Station was established, EUL Site 6 remained undeveloped.

Areas of potential environmental concern identified during the ECP study for EUL Site 6 and its adjacent properties are listed below by subject area:

- Tanks/Petroleum Contamination.

In accordance with DoD policy regarding the classification of properties that may exhibit hazardous substance or petroleum contamination (please reference Deputy Under Secretary of Defense Goodman Memorandum dated 21 October 1996), EUL Site 6 has been classified as Category 7. This category applies to properties that have not been evaluated or require additional evaluation. While no releases, disposals, or mitigation of hazardous substances have been documented within EUL Site 6, there is reason to suspect petroleum waste polluted soil contamination adjacent to EUL Site 6. Further evaluation of this contamination concern should be performed prior to execution of any property transfer involving EUL Site 6.

1. INTRODUCTION

1.1 Introduction and Background

The Navy is making available for lease non-excess real property at the NAS Patuxent River, Patuxent River, Maryland (hereinafter referred to as NAS Patuxent River or the “Station”) under its EUL program.

NAS Patuxent River is located in Saint Mary’s County in Southern Maryland at the confluence of the Chesapeake Bay and the Patuxent River. NAS Patuxent River covers approximately 6,400 acres (25.9 square kilometers) with an additional 850 acres (3.4 square kilometers) at the Webster Field Annex, located about 15 miles (24.1 kilometers) south of the Station. The Naval Recreation Center (NRC) Solomons located across the Patuxent River in Solomons, Maryland is also under the administrative control of NAS Patuxent River and Naval District Washington (NDW). NRC Solomons encompasses approximately 300 acres (1.2 square kilometers) and is the largest outdoor recreation facility in the Navy. Figure 1-1 presents the location of NAS Patuxent River, Webster Field Annex and NRC Solomons in the Washington, D.C. metropolitan area.

The Station supports naval aviation operations by researching, developing, testing and evaluating aircraft components and related products. The facilities are also used by foreign governments, academic institutions and private industry for similar projects. The Naval Aviation Systems Team at Patuxent River includes the Naval Air Station, the Webster Field Annex and the Naval Air Warfare Center Aircraft Division. NAS Patuxent River also is home to approximately 50 other tenant activities.

In support of the development of new administrative space through an EUL action, Naval Facilities Engineering Command (NAVFAC) Washington has prepared this ECP report for NAS Patuxent River EUL Site 6 (hereafter referred to as “EUL Site 6”). The following report presents a summary of readily available information on the current and former uses, environmental conditions of, and concerns relative to, the land, facilities and real property assets at EUL Site 6.



Figure 1-1. Location of NAS Patuxent River in the Washington, D.C. Metropolitan Area

1.2 Organization of ECP Report

The ECP report is organized as follows:

- Section 2 (Survey Methodology) provides the methodology used to conduct the ECP study, including records review, site visit, and interviews.
- Section 3 (Past and Current Use) describes the current and former uses of the EUL site and the adjacent property.
- Section 4 (Environmental Setting) describes the environmental setting of the EUL site.
- Section 5 (Environmental Conditions of Subject Property) addresses the environmental conditions and related findings for the EUL site.
- Section 6 (Environmental Conditions of Adjacent Property) addresses the environmental conditions and related findings for property adjacent to the EUL site.
- Section 7 (Conclusions) presents the conclusions and recommendations of the ECP study.
- Section 8 (References) presents a list of references used in preparation of the ECP report.
- Section 9 (Certification) provides certification of the ECP report.

1.3 Purpose of ECP Report

The purpose of this ECP report is to establish the environmental condition of the real property to support the proposed EUL real estate action. This ECP study is primarily based on the review of readily available information, visual site inspections, and interviews with personnel familiar with the site history to determine any environmental risks associated with the proposed site.

Readily apparent operational and regulatory compliance deficiencies of environmental program areas such as underground storage tanks (USTs), air emissions, lead-based paint, asbestos, pesticides, polychlorinated biphenyls (PCBs), radon, medical waste, munitions or explosives of concern, lead based paint, stormwater, and natural resources are also provided in the ECP report. This ECP study does not re-investigate or otherwise review the adequacy of previously conducted investigations or remedial actions.

This ECP report will provide baseline environmental conditions for EUL Site 6 pursuant to the following goals:

- To document inquiry into environmental conditions to support real estate decisions;
- To protect the Navy from future liability;
- To determine risk of exposure to grantees/government employees; and
- To inform grantees of environmental conditions, restrictions, and land use controls (LUCs) associated with the real property (Department of the Navy, 2006).

1.4 Parcel Identification and Boundaries

EUL Site 6 consists of approximately 3.26 acres (13,200 meters squared) located near the NAS Patuxent River Gate 1 entrance, east of the Patuxent River Naval Air Museum aircraft display. The site is currently undeveloped. Figure 1-2 presents the location of EUL Site 6 at NAS Patuxent River.

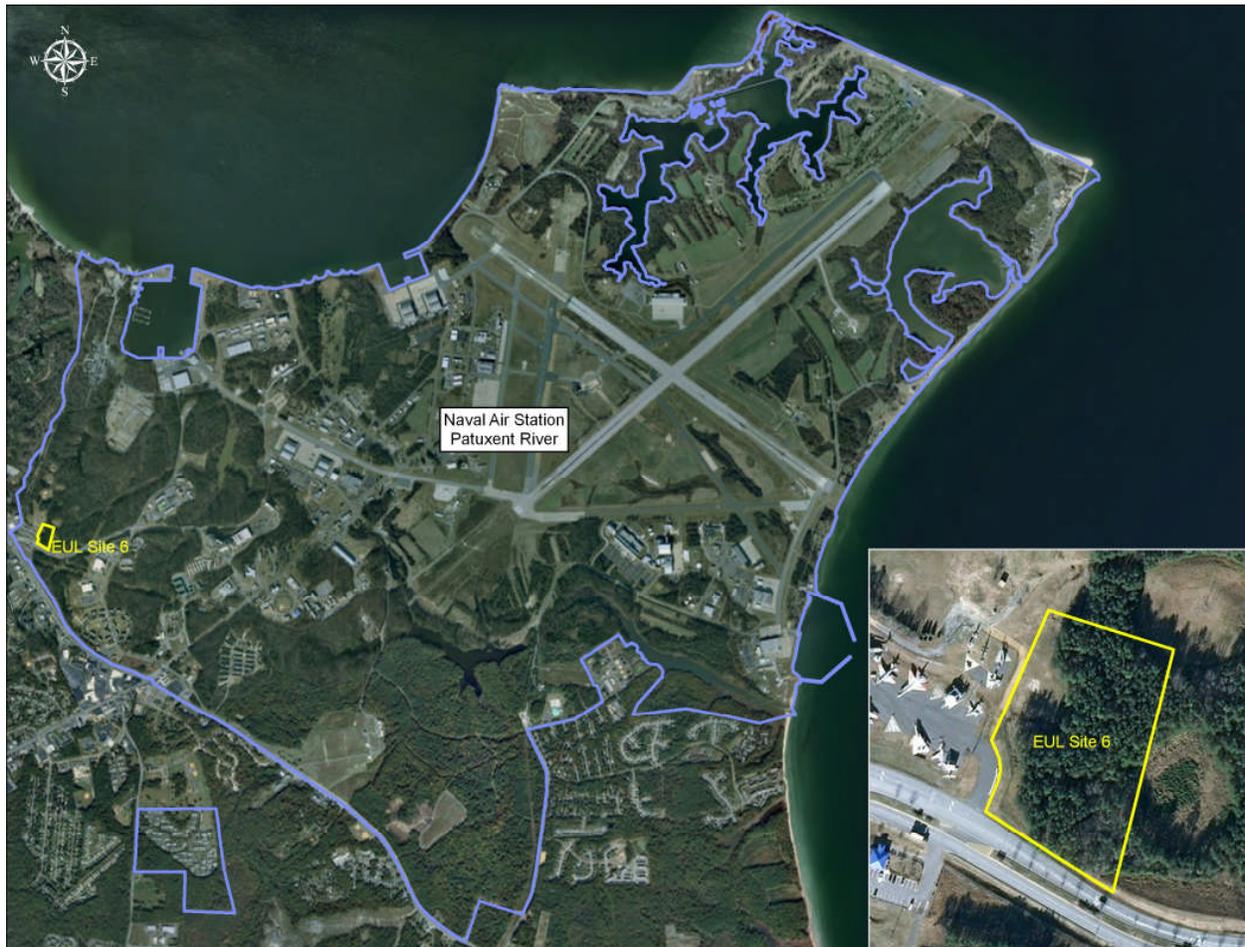


Figure 1-2. EUL Site 6 – NAS Patuxent River

1.5 Legal Description

Facility Name and Address: Naval Air Station Patuxent River, 22268 Cedar Point Road,
Patuxent River, MD 20670

Property Owner: United States Government

Date of Ownership: 1 April 1943

Current Occupant: US Navy

Zoning: Military

County, State: St. Mary's, Maryland

USGS Quadrangle: Solomons Island, MD. 38076-C4-TF-024

Latitude, Longitude: 38°17'02.53"N, 76°26'55.76"W

Parcel Number: Not Available

2. SURVEY METHODOLOGY

2.1 Approach and Rationale

This ECP report was prepared to document the environmental conditions of, and concerns relative to, the land, facilities, and real property assets of EUL Site 6. The environmental conditions of properties adjacent to EUL Site 6 were also considered in this report.

This report serves as a summary of readily available information based on an extensive record search of available documents, a thorough review of the applicable and relevant documents, analysis of the Station's Geographic Information System (GIS), two visual surveys conducted on May 18, 2010 and June 1, 2010, and on-site interviews with personnel knowledgeable about the history of EUL Site 6.

Extensive environmental investigations and reports and pertinent historical documents were reviewed in support of this ECP report. However, no sampling or analysis of any media was conducted during this survey. Information obtained is reflected within this report by reference. A complete list of references is provided as Section 8 (References).

The information obtained from the Navy and other environmental reports were considered to be accurate unless reasonable inquiries indicated otherwise. New information or changes in site use could require a review and possible modification of the findings and conclusions contained in this report.

2.2 Property Classification Guidelines

Based on analysis of the available data, the EUL Site was classified into one of seven Department of Defense (DoD) Environmental ECP categories as defined by the S.W. Goodman Memorandum dated October 21, 1996. The property classification categories are as follows:

- Category 1: Areas where no release or disposal of hazardous substances or petroleum products has occurred (including no migration of these substances from adjacent areas).
- Category 2: Areas where only release or disposal of petroleum products has occurred.
- Category 3: Areas where release, disposal, and/or migration of hazardous substances has occurred, but at concentrations that do not require a removal or remedial response.
- Category 4: Areas where release, disposal, and/or migration of hazardous substances has occurred, and all removal or remedial actions to protect human health and the environment have been taken.
- Category 5: Areas where release, disposal, and/or migration of hazardous substances has occurred, and removal or remedial actions are underway, but all required remedial actions have not yet been taken.
- Category 6: Areas where release, disposal, and/or migration of hazardous substances has occurred, but required actions have not yet been implemented.
- Category 7: Areas that are not evaluated or require additional evaluation.

2.3 **Related Reports**

Related environmental reports used in the preparation of this ECP report include, but are not limited to the following:

- Final Environmental Impact Statement for Increased Flight and Related Operations in the Patuxent River Complex, Patuxent River, Maryland;
- Environmental Assessment for the Privatization of Navy Housing at Naval Station;
- Draft Final Environmental Assessment for Disposition of Excess Buildings;
- Integrated Natural Resources Management Plan;
- Tank Management Plan, Volume 1;
- (Environmental Restoration) Site Management Plan, 2009 Update;
- Cold War Historic Context (1945-1989) and Architectural Survey and Evaluation;
- Draft Integrated Pest Management Plan, Naval Air Station Patuxent River, Maryland;
- Environmental Baseline Survey Update - Electric Utility Privatization: Naval Air Station Patuxent River Main Base, Lexington Park, Maryland; Webster Field Annex, St. Inigoes, Maryland; & Naval Recreation Center Solomons, Solomons Island;
- Historic Landscape Survey, Naval Air Station Patuxent River, Webster Field, and Solomons Complex;
- Naval Air Station Patuxent River Spill Records Database;
- Building Asbestos Reports; and
- Draft Part 70 Operating Permit No. 24-037-0017.

A complete list of references is provided in Section 8 (References).

2.4 **Real Estate Document Review**

A comprehensive property history of EUL Site 6 was created by reviewing Property Record Cards maintained by NAS Patuxent River for all former and current buildings and infrastructure located within the site. Historical land use records and personal interviews were used to understand property use and condition prior to the Navy taking ownership of the property. In addition, an environmental data and historical records package including a radius report, relevant historical aerial photographs, and topographic maps of the site was obtained from Environmental Data Resources (EDR) on May 20, 2010. Section 3 (Past and Current Use) presents the past and current use of EUL Site 6.

3. PAST AND CURRENT USE

3.1 Installation History

Prior to the early 20th century, NAS Patuxent River remained undeveloped and was used primarily for farming. Several plantations existed in the area, including Eltonhead Manor (1648), Susquehanna (1649), and Mattapany-Sewell (1663). A topographic map dated 1905, indicates that a small community called Pearson was located near the current northwest boundary of the Station, which consisted of a few residences, post office, a store, automobile dealer, and a church. The community was no longer represented on any historical maps more recently dated than 1943 (NAVFAC, Atlantic Division, 2009b; EDR, 2010a; EDR, 2010b).

NAS Patuxent River was commissioned on April 1, 1943, in an effort to centralize widely dispersed air testing facilities that had been established prior to World War II. This consolidation effort was swift, and the farming operations on the property were replaced by flight test operations within a year after the 1943 ground breaking for construction. The U.S. Naval Test Pilot School was established in 1958. In 1975, the Naval Air Test Center began to assume its role as the Naval Air Systems Command's principal site for development testing. Test facilities were upgraded in the late 1970s, with some of the largest construction appropriations in the history of the base (NAVFAC, Atlantic Division, 2009b; EDR, 2010a; EDR, 2010b).

Within the last decade, several new facilities were established at NAS Patuxent River due to Base Realignment and Closure (BRAC) actions. More than \$155 million has been budgeted for new engineering complexes and renovation of existing facilities. These include the Aircraft Technologies Lab; North Engineering Center; South Engineering Center; Frank Knox School improvement; Integrated Project Team Building; and the Propulsion System Evaluation Facility. The Aircraft Technologies Lab and the North and South Engineering Centers combined are occupied by 1,300 people recently relocated to NAS Patuxent River (Department of the Navy, 2002).

NAS Patuxent River is largely developed with aircraft runways, taxiways, hangars, and supporting structures and equipment. Residential communities, commercial properties, schools, churches, and recreational areas are also present. The Station is improved with water, wastewater, electric, and natural gas service.

3.2 Subject Property

According to historical topographic maps, aerial photography, and property record cards, EUL Site 6 was undeveloped until NAS Patuxent was established in 1943. After NAS Patuxent was established, EUL Site 6 remained undeveloped (EDR, 2010a; EDR, 2010b; Baker, 2010a; Baker, 2010b).

The terrain of EUL Site 6 is generally flat, with a very slight downward slope eastward across the site. The highest elevation on site is approximately 115 feet (35 meters) above mean sea level (msl) and the lowest elevation is approximately 110 feet (33.5 meters) above msl.

3.3 Adjacent Property

According to historical topographic maps, aerial photography, and property record cards, the property adjacent to EUL Site 6 remained undeveloped until 1943. The area was cleared and several radio antenna towers were constructed by 1964 for use at NAS Patuxent River and later removed (date unknown). Building 105 was constructed in 1943 to support radio antenna towers operations and maintenance. A quonset hut was also constructed to support radio antenna towers operations and maintenance, and was demolished (date unknown). While the site remains undeveloped, property outside of the fenceline on the western boundary of the site was developed as the Patuxent River Naval Air Station Museum. Table 3-1 summarizes existing adjacent area facilities and functions. Figure 5-1 illustrates the location of EUL Site 6 and the adjacent area facilities.

Table 3-1. Existing Adjacent Area Facilities

Facility Number/Name	Built Date	Function(s)
Building 1400	2006	Patuxent River Naval Air Station Museum

Property adjacent to the site provides a range of outdoor recreation activities including hunting, hiking, and bird-watching. The Outdoor Recreation Program at NAS Patuxent River relieves pressure from recreational areas in the community and generates a positive impact on the Station's staff productivity and retention (Department of the Navy, 2002).

4. ENVIRONMENTAL SETTING

4.1 Location

NAS Patuxent River is located in the southern portion of St. Mary's County, Maryland, at latitude 38°17'N and longitude 76°25'W, approximately 54 miles (87 kilometers) southeast of Washington, DC. St. Mary's County is the southernmost part of Maryland's western shore and consists of a peninsula surrounded by tidal water on all but the northwestern boundary. NAS Patuxent River occupies a small peninsula and broad headland (known as Cedar Point) at the confluence of the Patuxent River and Chesapeake Bay in the eastern portion of the county. The Station, which comprises approximately 6,400 acres (25.9 square kilometers), is bounded by the Patuxent River to the north, the Chesapeake Bay to the east, and the town of Lexington Park, Maryland to the south and west (NAVFAC, Atlantic Division, 2009b). Figure 1-1 presents the location of NAS Patuxent River, Webster Field Annex and NRC Solomons in the Washington, D.C. metropolitan area.

4.2 Climatology

NAS Patuxent River lies within the Humid Temperate, Semi-Continental Climate Zone. The Station's proximity to the Patuxent and Potomac Rivers, the Chesapeake Bay, and their tributaries affects the local climate. The atmospheric flow in this region is from west to east across North America, and there are four distinct seasons. Prevailing winds are from the northwest, except during the warm months, when they are more southerly. Average wind speeds are approximately nine miles per hour (mph), although winds may reach in excess of 60 mph on rare occasions. Windiest periods in this region include late winter and early spring. Additionally, other extreme weather events, such as tornadoes, hurricanes, and blizzards occur during other seasons, but are very rare.

Normal temperatures for the region range from an average low of 29°F and an average high of 44°F in January (the coldest month) to an average low of 70°F and an average high of 86°F in July (the warmest month).

The annual mean precipitation for the area is approximately 41.7 inches (1.1 meters), with approximately 15 inches (0.381 meters) of this amount occurring as snowfall. Precipitation occurs evenly throughout the year, with slight increases occurring in July and August. In summer, precipitation occurs mostly through thunderstorms, which occur on an average of 33 days per year. Drought may occur in any season but is most likely to occur in the summer (Department of the Navy, 2002).

4.3 Geology

The geological deposits underlying NAS Patuxent River are thick, unconsolidated beds of sand, silt, clay, and gravel resulting from marine deposits. Because these formations are entirely sedimentary in nature, they are extremely vulnerable to erosion. NAS Patuxent River is primarily underlain with a Matapeake-Mattapex-Sassafras soil association with smaller areas of a Sassafras- Beltsville association and Othello-Mattapex association (Department of the Navy, 2002).

The dominant surface sediments at the Station were deposited during the Quaternary Period, primarily Sunderland, Wicomico, and Talbot deposits. Layers that outcrop in St. Mary's County were deposited during the Tertiary and Quaternary Periods. The Station is underlain by a Cretaceous layer, which consists of Arundel, Patapsco, Raritan, Magothy, Matawan, and Monmouth formations (Department of the Navy, 2002).

4.4 Hydrogeology

There are three principal groundwater aquifers beneath NAS Patuxent River: Piney Point-Nanjemoy Aquifer, Aquia Aquifer, and Patapsco Aquifer. The Piney Point- Nanjemoy Aquifer is a major source of potable water for residential users in southern Maryland. The Aquia Aquifer is the principal source of potable and industrial water for both the Station and local public water suppliers. The Station also has two water supply wells tapping into the Patapsco Aquifer.

The elevation of the water table beneath the Station ranges from sea level along the coastal areas to approximately 80 feet (24 meters) below msl in the southwestern portion of the facility (Department of the Navy, 2009).

Several major drainage areas collect precipitation runoff from the Station. This runoff goes directly to one of four hydraulic sinks: (1) Patuxent River, (2) Chesapeake Bay, (3) estuary areas, or (4) freshwater creeks and ponds and associated wetland areas. All of the runoff from the Station eventually flows to the Chesapeake Bay.

There are six constructed ponds located on the Station. Except for Richneck Pond, all are located in the southern and western portions of the Station and serve to control runoff and provide fish and wildlife habitats, recreation, and a source of water for firefighting. In addition to these water bodies, there are low-lying areas throughout the Station that tend to act as temporary stormwater storage areas, helping to control runoff rates and downstream flooding (Department of the Navy, 2002).

4.5 Topography

The terrain at NAS Patuxent River rises gradually from the Chesapeake Bay shoreline westward. A majority of the Station (70 percent) is level and fairly well-drained. Some low areas are somewhat-poorly-drained to poorly-drained, and become intermittently flooded and/or saturated. The southwestern portion of the Station is hilly, with the highest elevations on the Station.

The United States Geologic Survey (USGS) Solomons Island, Maryland quadrangle indicates a general topographic gradient of east-north-east (ENE) for the Station. Elevation averages 35 feet (10 meters) above msl at the center of the Station, with higher elevations on the western portion of the property and lower elevations on the north and east boundaries with the Patuxent River and the Chesapeake Bay, respectively (EDR, 2010a; EDR, 2010b).

5. ENVIRONMENTAL CONDITIONS OF SUBJECT PROPERTY

This section discusses various aspects of the affected environment within EUL Site 6 and provides regulatory background, discussion of resources or features present, and an overview of restrictions, land use controls, and consultation requirements that may be necessary for development within this site.

A site map (Figure 5-1) was developed using GIS data retrieved from the Navy. The map displays the pertinent environmental constraints identified in the site. The map is not comprehensive and is intended only to support the information provided in this report.

5.1 Environmental Restoration

The Environmental Restoration (ER) program at NAS Patuxent River was established to comply with the Federal Facility Agreement (FFA) signed in December 2000 between the Navy and the EPA Region III. The ER program identifies, investigates, and environmentally restores sites containing hazardous substances to reduce the risk to human health and the environment. The ER program also incorporates the Munitions Response Program (MRP), which manages the environmental, health, and safety issues presented by unexploded ordnance (UXO), discards munitions, munitions constituents, and other munitions and explosives of concern (MEC) found on-base (Department of the Navy, 2009b).

Due to the historical use of NAS Patuxent River and procedures once used to treat and dispose of waste and munitions, the installation as a whole is at risk for environmental contamination. A variety of facility-wide, multi-site and single site environmental investigations have been conducted at NAS Patuxent River to identify and assess the presence of contaminants in areas of potential concern. The Station's Site Management Plan identifies 56 specific environmental restoration sites at NAS Patuxent River (Department of the Navy, 2009). Numerous additional investigations are underway or are anticipated to begin during Fiscal Year (FY) 2010 and FY 2011.

EUL Site 6

Upon review of the Site Management Plan, it has been determined that no documented ER sites are located within EUL Site 6 and no additional investigations are underway or anticipated within EUL Site 6 (Department of the Navy, 2009). Therefore, no environmental conditions, restrictions, or land use controls associated with the ER program would apply to EUL Site 6.

5.2 Munitions or Explosives of Concern

EUL Site 6

There are no documented MRP sites within EUL Site 6, and no explosives operations (e.g., munitions storage or handling) are known to have taken place within EUL Site 6. However, due to incomplete records and historical disposal practices at NAS Patuxent River, there is some potential to find MEC, including buried UXO, during earthwork at the Station (Simpson, 2010; NAVFACWASH, 2010). If MEC is discovered, earth disturbance in the vicinity of the discovery must cease and the location and description of the item(s) must be reported immediately to the Navy Project Manager.

5.3 Tanks/Petroleum Contamination

Storage tanks are classified based on their location and referred to as aboveground storage tanks (AST) and underground storage tanks (UST). Through the Resource Conservation and Recovery Act's (RCRA) Hazardous and Solid Waste Amendments, EPA established a federal program to regulate USTs containing petroleum and hazardous chemicals to limit corrosion and structural defects and thus minimize future tank leaks. In addition, the amendments directed EPA to set operating requirements and technical standards for tank design and installation, leak detection, spill and overfill control, corrective action, and tank closure. The UST program is implemented in Maryland by the Maryland Department of the Environment (MDE) (USEPA, 2010b).

Storage tanks at NAS Patuxent River are used to store a variety of petroleum products to support mission-related activities. NAS Patuxent River has an active Tank Management Plan that lists both ASTs and USTs currently in use, regulatory requirements for each storage tank, and ensures proper inspection and maintenance is performed (Naval Air Station Patuxent River, Maryland, 2008). Spills and resulting soil contamination from ASTs, USTs, or other sources of petroleum are documented and stored in a spill database specific to NAS Patuxent River and separate to the Tank Management Plan. The spill database contains a complete record of spills dating back to 1994.

EUL Site 6

No petroleum tanks are known to be present within EUL Site 6 (Naval Air Station Patuxent River, Maryland, 2008; NAVFACWASH, 2010). Additionally, there are no historical records of tanks formerly within this site. However, historical tank records may be incomplete, and there is some potential that undocumented tanks could be encountered during earthwork at the Station. Accordingly, there is also some potential for subsurface or groundwater contamination as a result of spills or leaks associated with any such undocumented tanks. Please see Section 6 (Environmental Conditions of Adjacent Property) for further information on adjacent property

5.4 Hazardous Substances/Hazardous Waste

Hazardous substances and hazardous waste are defined by EPA as a material that exhibits a characteristic of ignitability, corrosivity, reactivity, or toxicity, or is specifically listed as a hazardous material. Several federal environmental policies list and require special handling procedures for certain hazardous substances, including the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), Toxic Substances Control Act (TSCA), and RCRA. CERCLA, better known as the Superfund, ensures liability and clean-up of abandoned hazardous material by responsible parties provides (USEPA, 2010d). EPA controls hazardous substances through the TSCA, which addresses chemical substances and mixtures whose manufacture, processing, distribution, use, or disposal may present an unreasonable risk of injury to health or the environment (Department of the Navy, 2009b). RCRA is broad in its regulatory management of solid and hazardous waste, including cleanup, through corrective action, of releases of hazardous waste at RCRA-regulated facilities, such as NAS Patuxent River. RCRA requires cradle-to-grave management of hazardous waste through a recordkeeping system that tracks shipments of hazardous waste. Hazardous waste treatment, storage, and disposal facilities are regulated through the issuance of operating permits. EPA has delegated the enforcement of RCRA in Maryland to MDE.

On-site accumulation times for hazardous waste at NAS Patuxent River are restricted to the applicable time frames referenced in 40 CFR 262.34 and other applicable Maryland laws or regulations. Non-explosive hazardous waste is transported to an approved, off-site hazardous waste treatment, storage, or disposal facility in accordance with Department of Transportation regulations. The hauling and disposal of demolition debris, including hazardous wastes containing lead, asbestos, and air conditioner refrigerant, is performed in compliance with local, state, and federal codes and requirements.

NAS Patuxent River is listed in the EDR as a Large Quantity Generator (LQG) of hazardous wastes (EDR, 2010c). There are 50 buildings designated as satellite accumulation areas for hazardous waste. Pursuant to 40 CFR 262.34(c)(1), these points may accumulate as much as 55 gallons (208 liters) of hazardous waste or one quart of acutely hazardous waste. Once they become full, containers at these satellite accumulation points must be transferred to one of the 38 active less-than-90-day central accumulation sites at NAS Patuxent River.

EUL Site 6

There are no records of any hazardous waste storage or contamination at EUL Site 6 (Olson, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with hazardous waste would apply to EUL Site 6.

5.5 Solid/Bio-hazardous Waste

Solid waste is any garbage, refuse, sludge, or other discarded material including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, agricultural, or community activities (Department of the Navy, 2009b). Bio-hazardous waste, or medical waste, is defined as all waste generated at health care facilities, including such as hospitals, clinics, physician's offices, dental practices, blood banks, and veterinary hospitals/clinics, as well as medical research facilities and laboratories. Solid and bio-hazardous waste generators, transporters, destruction facilities, and disposal facilities are subject to the RCRA, and applicable state and local regulations and regulatory requirements for that prohibit disposing of solid waste in an open dumps and require bio-hazardous waste be treated and disposed of safely (USEPA, 2010c).

EUL Site 6

EUL Site 6 has not been associated with the generation, handling, or storage of bio-hazardous or solid waste (Olson, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with solid and bio-hazardous waste would apply to EUL Site 6.

5.6 Polychlorinated Biphenyls

The TSCA authorizes EPA to secure information on all new and existing chemical substances and to control any of these substances that could cause an unreasonable risk to public health or the environment. PCBs are regulated under Title I, Control of Toxic Substances, which includes provisions for testing chemical substances and mixtures, manufacturing and processing notices, regulating hazardous chemicals substances and mixtures, managing imminent hazards, and reporting and retaining information.

EUL Site 6

PCBs were originally used at NAS Patuxent River in transformers located throughout the installation. However, all transformers containing PCBs were retrofitted or replaced in the 1970s and 1980s. No PCB program or reports have been developed due to the overall low risk of PCB equipment and exposure (Ichniowski, 2010). As a result, no environmental conditions, restrictions, or land use controls associated with PCBs would apply to EUL Site 6.

5.7 Asbestos-Containing Material

Asbestos abatement is regulated under the TSCA Title II, Asbestos Hazard Emergency Response, which was added by the Asbestos Hazard Emergency Response Act (AHERA). AHERA provides for the promulgation of federal regulations requiring inspection for asbestos and appropriate response actions in schools and mandates periodic reinspection. In addition, it requires EPA Administrators to determine "the extent of the danger to human health posed by asbestos in public and commercial buildings and the means to respond to any such danger" (Department of the Navy, 2009c).

Several of the buildings at NAS Patuxent River were built prior to health concerns related to asbestos-containing material (ACM) arose and regulations were implemented. An asbestos survey was completed for buildings suspected of having ACM during the early 1990s. A report was completed for each building and mitigation and clean-up efforts were completed thereafter (Apex Environmental, Inc., 1993). However, due to the likelihood that ACM remains present in many buildings, it should be assumed that all buildings subject to renovation or demolition contain ACM unless a report demonstrates otherwise.

EUL Site 6

There are no buildings or other types of infrastructure at EUL 6 that would have the potential for asbestos-containing materials, and none are known to have previously existed at EUL Site 6 (EDR, 2010a; EDR, 2010b; NAVFACWASH, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with ACM would apply to EUL Site 6.

5.8 Lead-based Paint

The use of toxic lead-based paint (LBP) was banned in 1977 by the Consumer Product Safety Commission. The MDE has established the Lead Poisoning Prevent Program to enhance citizen safety and prevent exposure to LBP (MDE, 2010b).

Before it was removed from the market, LBP was commonly used on the exterior and interior walls during the renovation or construction of buildings at NAS Patuxent River. Many of these buildings remain today. No comprehensive survey of LBP containing-buildings has been completed for NAS Patuxent River. Due to the age of many buildings at NAS Patuxent River and lack of LBP mitigation or clean-up efforts, it is suspected that buildings built before 1978 contain LBP unless documentation demonstrates otherwise.

EUL Site 6

There are no buildings or other types of infrastructure at EUL Site 6 that would have the potential for lead-based paint, and none are known to have previously existed at EUL Site 6 (EDR, 2010a; EDR, 2010b; NAVFACWASH, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with LBP would apply to EUL Site 6.

5.9 Pesticides and Herbicides

NAS Patuxent maintains an Integrated Pest Management Plan (IPMP), which is a long-range planning and operational tool that establishes the strategy and methods for conducting a safe, effective, and environmentally sound integrated pest management program. The IPMP covers all pest management and pesticide-related activities conducted within all areas of the installation. The IPMP was developed in accordance with Navy guidance (e.g., OPNAVINST 6250.4) and applicable laws and regulations, such as the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). FIFRA provides the basis for regulation, sale, distribution and use of pesticides in the US, and addresses applicator certification requirements, record keeping, and penalties for pesticide misuse (NAVFAC, Atlantic Division, 2009a).

EUL Site 6

There are no documented invasive species requiring the use of pesticides or herbicides on EUL Site 6 (Naval Facilities Engineering Command, Atlantic Division, 2009a; NAVFACWASH, 2010; Smith, 2010a; Rambo, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with pesticide and herbicide contamination would apply to EUL Site 6.

5.10 Radon/Radiological Material

Indoor radon concentrations are regulated under TSCA Title III (Indoor Radon Abatement). In response, the Navy established the Radon Assessment and Mitigation Program (NAVRAMP) which identifies, assesses, and mitigates the infiltration of radon into existing Navy-occupied buildings and incorporates preventive practices in the design and construction of new buildings.

EUL Site 6

St. Mary's County is classified as Zone 2 by the EPA, indicating a moderate potential for elevated indoor radon levels. However, a base-wide survey of radon levels was completed in the 1970s and 1980s. The survey found no radon levels of concern; therefore, no radon program is established at the Station (Ichniowski, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with elevated radon levels would apply to EUL Site 6.

5.11 Water Quality

5.11.1 *Surface Water*

Important aquatic resources at NAS Patuxent include the Patuxent River, Chesapeake Bay, Pine Hill Run, Goose Creek, Pearson Creek, Harper's Creek, and six freshwater ponds. These open water areas range from brackish to freshwater systems and support a variety of fish and wildlife resources. NAS Patuxent is situated on a peninsula at the mouth of the Patuxent River. Of NAS Patuxent's approximately 6,400 acres (25.9 square kilometers), 1,041 acres (4.2 square

kilometers) are open water or wetland (discussed in Section 5.12.2 (Wetlands)). This acreage is comprised of six freshwater ponds; several perennial and intermittent streams; four estuaries; two seaplane basins; a partially enclosed sea-wall; and numerous saline, freshwater tidal, and nontidal marshes, in addition to forested and scrub/shrub wetlands (Department of the Navy, 2002).

NAS Patuxent shares boundaries with two significant resources – the Chesapeake Bay and the Patuxent River. The Chesapeake Bay, with its associated salt marshes, is the largest estuary in North America and one of the most productive in the world. Its bounty of finfish, shellfish, crabs, and waterfowl is world-renowned. The Patuxent River is one of the rivers initially designated as part of the Maryland State Wild and Scenic Rivers Program. In addition, while no Maryland river is on the National Wild and Scenic Rivers System, Patuxent River is listed in the Nationwide Rivers Inventory as having the significant resource values required for potential inclusion (Department of the Navy, 2002).

NAS Patuxent contains many miles of intermittent and perennial headwater streams. Streams usually occupy well-defined channels where topographic gradients are steeper or where they have been channeled. In the level, low-lying areas, streams often occupy split or braided channels. Those streams occurring in densely forested areas have not all been detected by photo interpretation or mapped.

EUL Site 6

There are no surface waters at EUL Site 6 (Department of the Navy, 2002). Therefore, no environmental conditions, restrictions, or land use controls associated with the presence of surface water would apply to EUL Site 6.

5.11.2 Stormwater

Stormwater is generated when precipitation runs off from land and impervious areas such as paved streets, parking lots, and building rooftops. Stormwater runoff can collect pollutants such as oil and grease, chemicals, nutrients, metals, and bacteria as it travels across land, and it also causes soil erosion when traveling at velocities sufficient to carry sediment particles. The Clean Water Act (CWA) regulates both direct and indirect discharges of “priority” pollutants that are often conveyed by stormwater, such as total suspended solids, fecal coliform, and oil and grease. Stormwater is typically managed using structural or nonstructural Best Management Practices (BMPs). Structural BMPs include control systems such as infiltration devices, ponds, filters and constructed wetlands, while nonstructural BMPs include low impact development (LID) practices and management measures (USEPA, 2004).

EUL Site 6

Stormwater currently infiltrates into vegetated areas within and adjacent to EUL Site 6. Any new development within EUL Site 6 must be designed and executed in accordance with applicable requirements of the following standards and regulations to ensure that stormwater impacts are minimized. Pursuant to Section 438 of the Energy Independence and Security Act (EISA) of 2007, development with a footprint greater than 5,000 SF (465 meters squared) must maintain or restore to the maximum extent practicable pre-development hydrology with respect to temperature, rate, volume, and duration of flow (U.S. Congress, 2007). Pursuant to the Navy’s

LID policy, the Navy sets a goal of no net increase in stormwater volume and sediment or nutrient loading from construction projects (Department of the Navy, 2007). Pursuant to Maryland's Stormwater Management Act of 2007, development with a footprint greater than 5,000 SF must implement environmental site design (ESD), to the maximum extent practicable (MEP) in accordance with Section 4.0 Stormwater Management Criteria of the 2000 Maryland Stormwater Design Manual. Additionally, re-development with a footprint greater than 5,000 SF must implement ESD to the MEP to provide water quality treatment for a minimum of 50 percent of the existing impervious area within the limits of disturbance. For additional information, please reference the 2000 Maryland Stormwater Design Manual (MDE, 2009; MDE, 2010).

5.11.3 Groundwater

The Safe Drinking Water Act (SDWA) was originally passed by Congress in 1974 to protect public health by regulating the nation's public drinking water supply. The law was amended in 1986 and 1996 and requires the protection of drinking water and its sources – rivers, lakes, reservoirs, springs, and groundwater wells. SDWA authorizes the US EPA to set national health-based standards for drinking water to protect against both naturally-occurring and man-made contaminants that may be found in drinking water (USEPA, 2010f).

The drinking water at NAS Patuxent is pumped from the Piney Point/Nanjemoy, Aquia, and Patapso aquifers – groundwater sources below St. Mary's County. The Compliance Division of the NAVFACWASH Public Works Environmental Division at NAS Patuxent River is responsible for both groundwater monitoring and protection of groundwater well locations on the Station. However, to date, no formal Source Water or Wellhead Protection Plan has been written (NAVFAC, Atlantic Division, 2009b).

EUL Site 6

There are no known groundwater wells present within EUL Site 6; therefore, there is no site specific information on the groundwater. However, based on the historical use of EUL Site 6, there is no reason to suspect groundwater contamination.

5.12 Natural Resources

5.12.1 Forests

Forested areas account for approximately 42 percent (2,817 acres, 11.6 square kilometers) of the land cover at NAS Patuxent. The forests on NAS Patuxent are presented in four broad classifications of forest types: bottomland pine; upland pine; bottomland hardwood; and upland hardwood (Department of the Navy, 2002).

Pine forests are defined as areas dominated mainly by trees of the genus *Pinus*, consisting of needle-leaved evergreen species. Upland pine forest accounts for 7 percent (207 acres, 837,700 square meters) of the forests encountered on NAS Patuxent. Bottomland pine forest consists of needle-leaved evergreen species in areas where the water table is at a depth sufficient to influence the development of oxygen-reducing conditions and create hydric soil and hydrophytic vegetation characteristics. This forest type accounts for 1 percent (24 acres, 97,100 square meters) of the forests encountered on NAS Patuxent. Upland hardwood forests consist of

hardwood tree species in areas where the water table is below a depth where hydric characteristics develop in the soils and plant community. This forest type accounts for 21 percent (581 acres, 2,351,000 square meters) of the forests encountered on NAS Patuxent. Pine species also occur in combination with hardwood tree species to form mixed forest types. This mixed forest type accounts for 21% (580 acres, 2,350,200 square meters) of the forests encountered on NAS Patuxent.

NAS Patuxent is an important migratory bird area as a result of extensive forest stands throughout the base. The Migratory Bird Treaty Act (MBTA) protects migratory birds and their habitats, and establishes a permitting process for legal taking. Except as permitted, actions of the Navy may not result in pursuit, hunting, taking, capture, killing, possession, or transportation of any migratory bird, bird part, nest, or egg thereof.

The potential for commercial forest products such as poletimber, sawtimber, pulpwood, and firewood is an added economic benefit afforded by the forested areas on NAS Patuxent. All merchantable timber that is cut on NAS Patuxent is considered Navy Real Property and must be disposed of properly, with appropriate disbursement to the Navy Forestry Account.

The most important management prescription proposed for wildlife habitat concerns is the designation of a large, contiguous forest block on the south side of the Station. This forested area will benefit many rare, threatened, and endangered species that are known to and/or have the potential to inhabit the region. The most important indicator of the success of the forest management prescription for the maintenance and restoration of critical ecosystem functions is the monitoring of Forest Interior Dwelling Species (FIDS). These species are considered "area sensitive" species and require some critical mass of contiguous forest type in order to survive. The monitoring of populations of these species is crucial in determining the success of the forest block (Department of the Navy, 2002).

EUL Site 6

There are contiguous upland pine forest areas located within EUL Site 6. This stand of pine forests are not considered to be potential forest interior dwellers (FID) species habitat (Rambo, 2012). Any tree clearing is recommended to take place in the winter to avoid disrupting migratory birds. Additionally, all merchantable timber that is cut on NAS Patuxent is considered Navy Real Property and must be disposed of properly, with appropriate disbursement to the Navy Forestry Account (Department of the Navy, 2002).

5.12.2 Wetlands

The United States Army Corps of Engineers (USACE) and EPA define jurisdictional wetlands as areas that are inundated or saturated by surface water or groundwater frequently and long enough to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands provide important plant and wildlife habitat and serve as buffers and filters essential for maintaining the water quality of nearby surface waters.

The wetlands at NAS Patuxent River are protected by Section 404 of the CWA, Executive Order (EO) 11990 (Wetland Protection), and applicable state regulations, including the Maryland Nontidal Wetlands Protection Act, Maryland Tidal Wetlands Act, and the Waterway and 100-

Year Floodplain Construction Regulations. Section 404 of the CWA prohibits the discharge of dredged or fill material into wetlands or other waters of the United States if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's water would be significantly degraded. Regulated activities are controlled by a permit review process administered by the USACE (USEPA, 2010e).

EO 11990 was implemented in 1977 to protect wetlands and their associated ecosystem services. This EO directs each federal agency to avoid undertaking or providing assistance for new construction located in wetlands unless the head of the agency finds that 1) there is no practicable alternative to such construction, and 2) all practicable measures will be taken to minimize impacts to the wetlands. In addition, the Navy has a “no net loss” policy requiring the replacement of any wetlands destroyed or eliminated through a project.

To protect jurisdictional wetlands, MDE requires maintaining an area surrounding a wetland called a buffer. Activities that may disturb or occur within a non-tidal or tidal wetland or surrounding buffer are regulated under COMAR 26.23 and COMAR 26.24, respectively. According to COMAR 26.23.01, a buffer is a regulated area, 25 feet in width, surrounding a nontidal wetland, and measured from the outer edge of the non-tidal wetland. MDE requires the action proponent to obtain a Non-tidal Wetlands and Waterways Permit for any activity that alters a non-tidal wetland or its 25-foot buffer.

The Chesapeake Bay Critical Area Commission requires maintaining a 100-foot buffer around tidal wetlands and streams to improve runoff water quality and reduce the amounts of toxic substances entering tidal waters (Critical Area Commission, 2008). The Navy maintains these areas at NAS Patuxent by avoiding removal of trees within 100-foot riparian buffers wherever possible (U.S. Department of the Navy, 2008).

Wetland delineations for NAS Patuxent were performed with data collection between June and October 1995. This technique produced a wetland delineation that was conservative and probably included some upland areas. These delineations were not flagged or surveyed in the field; therefore they should be considered rough estimates (Rambo, 2010; Smith, 2010a; Department of the Navy, 2002).

EUL Site 6

According to the NAS Patuxent River GIS, there are no wetlands present within EUL Site 6. Therefore, no environmental conditions, restrictions, or land use controls associated with wetlands would apply to EUL Site 6.

5.12.3 Floodplains

A floodplain is the area along or adjacent to a stream or a body of water that is capable of storing or conveying floodwaters. Floodplains perform important natural functions, including moderating peak flows, maintaining water quality, recharging groundwater, and preventing erosion. In addition, floodplains provide wildlife habitat, recreational opportunities, and aesthetic benefits. To protect floodplains and minimize future flood damage, EO 11988 Floodplain Management restricts development within the 100-year floodplain. A 100-year floodplain is defined as an area that is subject to a one-percent or greater chance of flooding in any given year. Under EO 11988, all federal agencies must 1) determine if any of their actions would occur

within a floodplain, 2) evaluate the potential effects of these actions, and 3) analyze alternatives to these actions.

EUL Site 6

There are no floodplains within EUL Site 6 (Department of the Navy, 2002). Therefore, no environmental conditions, restrictions, or land use controls associated with floodplains would apply to EUL Site 6.

5.12.4 Coastal Zone

Maryland's Coastal Zone Management (CZM) Program was created in response to the passage of the Federal Coastal Zone Management Act of 1972. The goal of this program is to "preserve, protect, develop and, where possible, restore our coastal resources." Maryland's CZM Program was created in 1978 and is a network of state laws and policies designed to protect coastal and marine resources. Maryland's coastal zone includes 3,190 miles of coast in 16 counties and Baltimore City (MDNR, 2002). This area includes the Chesapeake Bay, coastal bays, and the Atlantic Ocean, as well as the towns, cities, and counties that have jurisdiction over the coastline. Maryland's coastal zone encompasses two thirds of the state's land area and is home to greater than 65 percent of the state's residents (MDNR, 2002). Federally controlled lands are excluded from the coastal zone per 16 U.S.C. 1453, Section 304, Paragraph (1). However, the Coastal Zone Management Act requires all federal activities that could affect land, water, or natural resources on the coastal zone to be consistent to the maximum extent practicable with the enforceable policies of the approved state CZM program. That is, even if the action occurs on federal land (excluded from the coastal zone), the action must be consistent to the maximum extent practicable with the state CZM program if it affects coastal resources.

As previously mentioned in Section 5.11.1 (Surface Water), the Chesapeake Bay Critical Area Law regulates all lands under the tidal influence of the Chesapeake Bay and its tributaries up to the head of the tide, as well as wetlands connected to these waters. It also regulates land within a 1,000-foot boundary inland from that line. The Critical Area Law is included within Maryland's Coastal Zone Management Program. Any disturbance within the Critical Area would require consultation with the Chesapeake Bay Critical Area Commission.

EUL Site 6

EUL Site 6 development will not impact the Maryland Coastal Zone or Critical Area. Therefore, no environmental conditions, restrictions, or land use controls associated with the Maryland Coastal Zone or Critical Area would apply to EUL Site 6.

5.12.5 Essential Fish Habitat

Fish and invertebrate species and their habitat are regulated and protected by several federal laws. The most notable of the federal laws is the Fishery Conservation and Management Act of 1976, which was reauthorized and amended by the Sustainable Fisheries Act in 1996 and is now popularly designated as the Magnuson-Stevens Fishery Conservation and Management Act. These acts mandated habitat conservation for federally managed fish species via the conservation tool known as essential fish habitat (EFH). The EFH mandate required that regional fishery management councils, through Federal Fishery Management Plans, describe and identify EFH

for each federally managed species, minimize to the extent practicable any adverse effect on such habitat caused by fishing, and identify other actions to encourage the conservation and enhancement of such habitats. EFH is defined by Congress for managed species as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (16 U.S.C. 1802[10]). Within the vicinity of the NAS Patuxent River (upper Chesapeake Bay), EFH has been designated for 11 of the 23 EFH fish species found in the Chesapeake Bay.

EUL Site 6

There is no existing essential fish habitat within EUL Site 6 (Department of the Navy, 2002). Therefore, no environmental conditions, restrictions, or land use controls associated with the presence of essential fish habitat would apply to EUL Site 6.

5.12.6 Threatened or Endangered Species

The Endangered Species Act of 1973 (ESA) protects federally-listed threatened, endangered, and candidate species of fish, wildlife, and plants and their designated critical habitats. Under this law, no federal action is allowed to jeopardize the continued existence of an endangered or threatened species. ESA also requires consultation with the United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (now called National Oceanographic & Atmospheric Administration (NOAA) Fisheries Service) and the preparation of a biological assessment when such species are present in an area that is affected by government activities (USFWS, 2010).

EUL Site 6

Based on previous surveys and discussions with NAS Patuxent Environmental Division personnel, there are no federally- or state-listed threatened or endangered species at EUL Site 6 (Smith, 2010a; Smith, 2010b; Department of the Navy, 2002). Therefore, no environmental conditions, restrictions, or land use controls associated with the presence of threatened or endangered species would apply to EUL Site 6.

5.13 Cultural Resources

The National Historic Preservation Act of 1966 (NHPA), enacted under 16 United States Code (U.S.C.) 470, provides for the National Register of Historic Places (the Register), defines National Historic Landmarks, provides for the designation of a State Historic Preservation Officer (SHPO), and establishes the Advisory Council on Historic Preservation (ACHP). The Register lists sites, districts, buildings, structures, and objects of significance in American history, architecture, archeology, engineering, and culture. These resources may be of local, State, or national significance. Section 106 of the NHPA requires federal agencies to consider the effects of undertakings (i.e., actions) on any resource that is included or eligible for inclusion in the Register, and to afford the ACHP a reasonable opportunity to comment on such undertakings. In Maryland, the Maryland Historical Trust (a division of the Maryland Department of Planning) serves as the SHPO and also participates in Section 106 consultations. Pursuant to OPNAVINST 5090.1C, Chapter 5-5, an Environmental Assessment must be prepared for any proposed action that would have an adverse effect on resources listed or determined to be eligible for listing in the Register.

Section 110 of the NHPA requires federal agencies to establish a preservation program for the identification, evaluation, nomination (for the Register), and protection of historic properties. To this end, the Navy performs surveys and investigations to identify any historic properties under its jurisdiction.

5.13.1 Historic Architectural Resources

The most recent architectural and historic landscape evaluation of NAS Patuxent was performed in October 2009 (NAVFACWASH, 2009; NAVFACWASH, 2010). The surveys identified architectural resources and determined if resources were eligible for listing on the Register.

EUL Site 6

No historic buildings or landscapes have been identified within EUL Site 6 (Smolek, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with the presence of known historic architectural resources would apply to EUL Site 6. However, once the lessee provides information about the development plans, the Navy will pursue consultation with SHPO to seek concurrence that there is no adverse effect to historic architectural resources.

5.13.2 Archeological Resources

Archeological resources are material remains of past life or activities (Reinke & Swartz, 1999). Some examples of archeological resources include pottery, basketry, bottles, weapons, tools, rock paintings, rock carvings, and gravesites.

The Native American Graves Protection and Repatriation Act of 1990 (NAGPRA), enacted under 25 U.S.C. 3001, prohibits the intentional removal of certain types of Native American cultural items from Federal or tribal lands. Removal of cultural items may be permitted under an Archeological Resource Protection Act (ARPA) permit, which includes authorization and a written agreement between the federal agency and an appropriate repository that will house and curate the collection recovered from the project, and in consultation with the appropriate Native American groups (USDI, 2010). NAGPRA provides for the return of burial remains, associated funerary objects, sacred objects, and objects of cultural patrimony to the appropriate tribes. It established Native American ownership of human remains and associated artifacts discovered on Federal lands after the date of enactment (USDI, 2010).

EUL Site 6

A Phase I archeological survey, which locates archeological resources, has been performed at NAS Patuxent to make generalizations about the type and distribution of archeological properties that may be present. This survey indicated that no potentially-significant resources are known to be present at EUL Site 6 (Smolek, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with the presence of known archeological resources would apply to EUL Site 6. However, once the lessee provides information about the development plans, the Navy will pursue consultation with SHPO to seek concurrence that there is no adverse effect to archaeological resources.

5.14 Air Quality

Air quality is regulated under the authority of Title I, Part A, Section 109 of the Clean Air Act (CAA). EPA has established health-based National Ambient Air Quality Standards (NAAQS) for the criteria pollutants carbon monoxide, nitrogen dioxide, ozone, particulate matter, lead, and sulfur dioxide. To monitor and meet the NAAQS, the CAA divides the United States into geographic areas called “air quality control regions” (AQCRs). St. Mary’s County, where NAS Patuxent River is located, is a designated AQCR. An AQCR in which levels of a criteria air pollutant meet the health-based NAAQS is defined as an *attainment* area for the pollutant, while an area that does not meet the NAAQS is designated a *nonattainment* area for the pollutant. An area that was once designated a nonattainment area but was later reclassified as an attainment area is known as a *maintenance* area. An area may have an acceptable level for one criteria air pollutant but may have unacceptable levels for other criteria air pollutants. Thus, an area could be attainment, maintenance, and nonattainment at the same time for different pollutants.

In addition to NAAQS requirements, federal agencies must obtain permits to operate equipment that generates air emissions. Title V of the CAA establishes an operating permit program that requires all air quality requirements for a source to be combined into one comprehensive permit document. All major sources of air pollutants are required to apply for a Title V permit, which is valid for five (5) years. In addition to complying with the Title V operating permit, the CAA requires that federal agencies comply with state and local air quality requirements in the same manner as any non-governmental entity. NAS Patuxent River has received a Title V operating permit that includes 126 sources of air emissions, in addition to various insignificant emission units (Naval Air Station Patuxent River, Maryland, 2010).

Pursuant to COMAR 26.11.02.09, any new source of emissions must be issued a Permit to Construct (PTC) by MDE prior to installation. A PTC allows the installation of the unit and provides operating requirements that apply until the unit is incorporated into the next renewal of the Title V operating permit.

EUL Site 6

The AQCR of St. Mary’s County is an attainment area for all criteria pollutants of the CAA. The most recent Title V operating permit for NAS Patuxent River is effective on July 1, 2010 and expires June 30, 2015. At EUL Site 6 there are no sources of air emissions identified in the Title V permit and no PTCs have been issued for construction of any emission units (Ichniowski, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with air emissions would apply to EUL Site 6.

5.15 Flight Operation Noise & Safety

In the early 1970s, the DoD established the Air Installations Compatibility Use Zone (AICUZ) Program to balance the need for aircraft operations and community concerns over aircraft noise and accident potential. The objectives of the AICUZ program, according to the Chief of Naval Operations Instruction (OPNAVINST 11010.36C), are the following: 1) to protect the health, safety, and welfare of civilians and military personnel by encouraging land use which is compatible with aircraft operations; 2) to protect the US Department of Navy and Marine Corps installation investments by safeguarding the installation's operational capabilities; 3) to reduce noise impacts caused by aircraft operations while meeting operational, training, and flight safety requirements, both on and in the vicinity of air installations; and 4) to inform the public about the AICUZ program and seek cooperative efforts to minimize noise and aircraft accident potential impacts by promoting compatible development in the vicinity of military air installations (Department of the Navy, 2008). Accident potential zones (APZ) and Noise Zones are present at and adjacent to air operation areas (e.g., airfields, runways). APZs describe the probably impact area if an accident were to occur. Noise Zones are defined by noise contours that are developed by a computerized simulation of aircraft activity at the installation and reflect site-specific operational data (e.g., flight tracks, type and mix of aircraft, frequency and times of operations) (Department of the Navy, 2008).

EUL Site 6

There are no AICUZ issues (e.g., APZ, Noise Zones) present at EUL Site 6 (NAVFACWASH, 2010; Department of the Navy, 2008). Therefore, no environmental conditions, restrictions, or land use controls associated with AICUZ issues would apply to EUL Site 6.

5.16 Notices of Violation

EUL Site 6

There are no documented Notices of Violation (NOVs) other than those pertaining to administrative concerns at NAS Patuxent (Smith, 2010a; Gray, 2010b). As a result, no environmental conditions, restrictions, or land use controls associated with NOVs would apply to EUL Site 6.

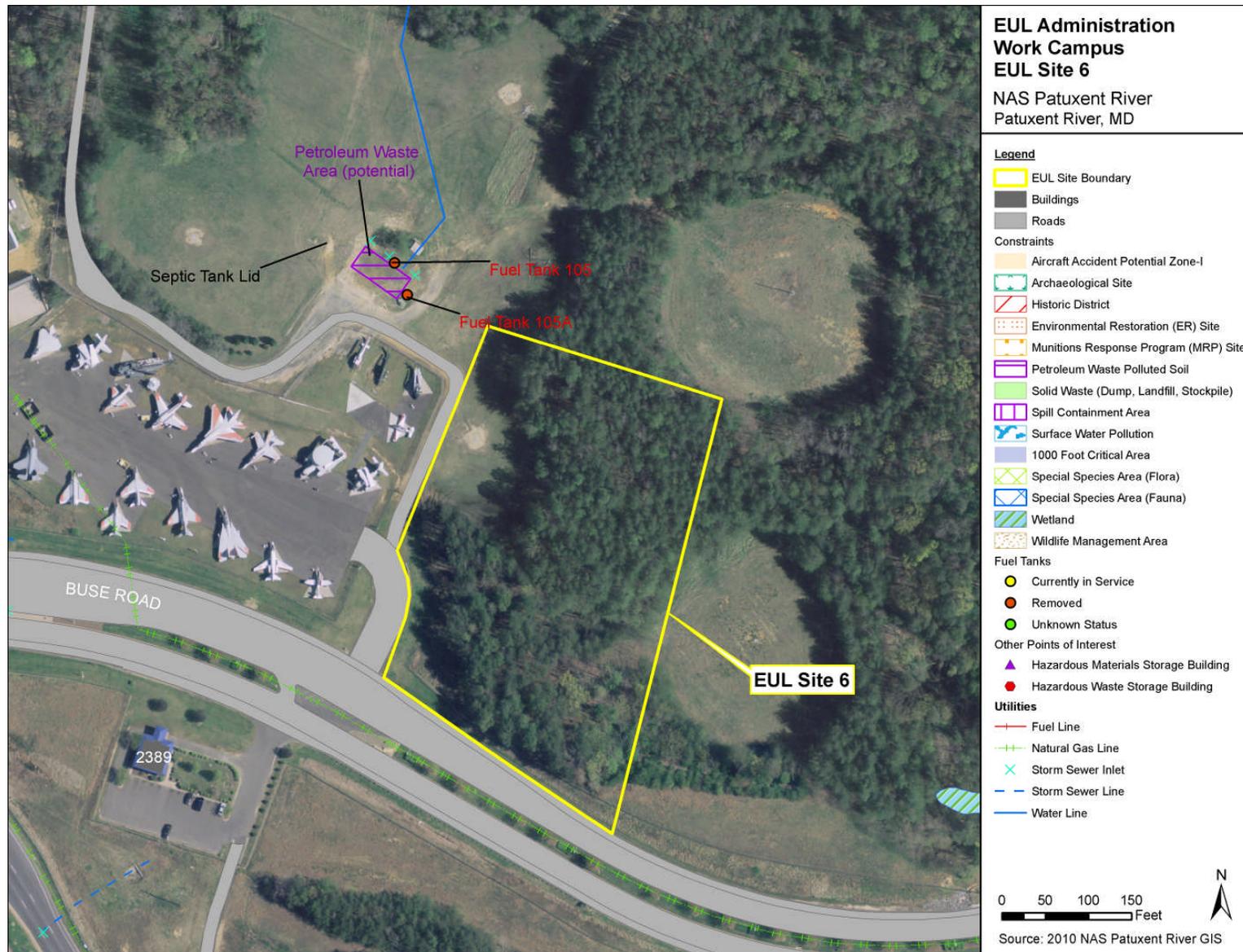


Figure 5-1. Site Conditions – EUL Site 6

6. ENVIRONMENTAL CONDITIONS OF ADJACENT PROPERTY

This ECP study evaluated the adjacent property with respect to all of the environmental considerations that are discussed in Section 5 (Environmental Conditions of Subject Property). This section presents only those adjacent property findings that could potentially affect development or use of EUL Site 6.

All adjoining properties of EUL Site 6 are within the boundaries of NAS Patuxent River. The site is bounded by Buse Road to the south, the museum to the west, EUL Site 7 to the north and forested areas to the east.

Tanks/Petroleum Contamination

Based on discussions with installation personnel, Tanks 105A (AST, 100 gallons, diesel) and 105 (AST 250 gallon, fuel) were removed prior to 2003 (Costanzo, 2010; Baker, 2010). GIS indicates an area of petroleum waste polluted soil in the area of demolished Building 105 on the adjacent EUL Site 7 property (Radio Transmitter Building) (NAVFACWASH, 2010). However, no other records document the petroleum polluted soil area at EUL Site 7 and a visual site inspection does not indicate any potential contamination of significance.

No tanks or other sources of potential petroleum contamination are located adjacent to EUL Site 6 (Naval Air Station Patuxent River, Maryland. 2008; NAVFACWASH, 2010). However, historical tank records may be incomplete, and there is some potential for subsurface or groundwater contamination as a result of spills or leaks associated with any such undocumented tanks (Costanzo, G. 2010).

7. CONCLUSIONS

Findings of this ECP report for EUL Site 6 and its adjacent properties are based on an extensive record search of available documents, a thorough review of the applicable and relevant documents, analysis of the Station's GIS, two visual surveys conducted on May 18, 2010 and June 1, 2010, and on-site interviews with personnel knowledgeable about the history of EUL Site 6. Findings related to the areas of environmental considerations that were evaluated during the ECP study include:

- Environmental Restoration – No documented ER sites are located within EUL Site 6 and no additional investigations are underway or anticipated within EUL Site 6.
- Munitions or Explosives of Concern – There are no documented MRP sites within EUL Site 6, and no explosives operations (e.g., munitions storage or handling) are known to have taken place within EUL Site 6. However, due to incomplete records and historical disposal practices at NAS Patuxent River, there is some potential to find MEC, including buried UXO, during earthwork at the Station. If MEC is discovered, earth disturbance in the vicinity of the discovery must cease and the location and description of the item(s) must be reported immediately to the Navy Project Manager.
- Tanks/Petroleum Contamination – No petroleum tanks are known to be present within EUL Site 6. Additionally, there are no historical records of tanks formerly within this site. However, historical tank records may be incomplete, and there is some potential that undocumented tanks could be encountered during earthwork at the Station. Accordingly, there is also some potential for subsurface or groundwater contamination as a result of spills or leaks associated with any such undocumented tanks.
- Hazardous Substances/Waste Management – There are no records of any hazardous waste storage or contamination at EUL Site 6.
- Solid/Bio-hazardous Waste – EUL Site 6 has not been associated with the generation, handling, or storage of bio-hazardous or solid waste.
- Polychlorinated Biphenyls – All transformers containing PCBs were retrofitted or replaced in the 1970s-1980s. No PCB program or reports have been developed due to the overall low risk of PCB equipment and exposure.
- Asbestos-Containing Material – There are no buildings or other types of infrastructure at EUL 6 that would have the potential for asbestos-containing materials, and none are known to have previously existed.
- Lead-Based Paint – There are no buildings or other types of infrastructure at EUL Site 6 that would have the potential for lead-based paint, and none are known to have previously existed.

- Pesticides and Herbicides – There are no documented invasive species requiring the use of pesticides or herbicides on EUL Site 6.
- Radon/Radiological Material – A base-wide survey of radon levels was completed in the 1970's and 1980's. The survey found no radon levels of concern.
- Surface Water - There are no surface waters at EUL Site 6.
- Stormwater – Stormwater currently infiltrates into vegetated areas within and adjacent to EUL Site 6. Any new development within EUL Site 6 must be designed and executed in accordance with applicable requirements of the following standards and regulations to ensure that stormwater impacts are minimized: Section 438 of EISA of 2007; Navy's LID policy; and Maryland's Stormwater Management Act of 2007.
- Groundwater – There are no known groundwater wells present within EUL Site 6; therefore, there is no site specific information on the groundwater. However, based on the historical use of EUL Site 6, there is no reason to suspect groundwater contamination.
- Forests – There are contiguous upland pine forest areas located within EUL Site 6. Any tree clearing is recommended to take place in the winter to avoid disrupting migratory birds.
- Wetlands – There are no wetlands within EUL Site 6.
- Floodplains – There are no floodplains within EUL Site 6.
- Coastal Zone – Development within EUL Site 6 will not impact the Maryland Coastal Zone or Critical Area.
- Essential Fish Habitat – There is no essential fish habitat within EUL Site 6.
- Threatened or Endangered Species – There are no federally- or state-listed threatened or endangered species at EUL Site 6.
- Historic Architectural Resources – No historic buildings or landscapes have been identified within EUL Site 6. However, once the lessee provides information about the development plans, the Navy will pursue consultation with SHPO to seek concurrence that there is no adverse effect to historic architectural resources.
- Archeological Resources – A Phase I survey has been performed, indicating that no potentially-significant archeological resources are known to be present at EUL Site 6. However, once the lessee provides information about the development plans, the Navy will pursue consultation with SHPO to seek concurrence that there is no adverse effect to archaeological resources.

- Air Quality – There are no sources of air emissions identified in the NAS Patuxent River Title V permit and no PTCs have been issued for construction of any emission units at EUL Site 6.
- Noise & Safety – There are no AICUZ noise zones or safety issues that would restrict land development at EUL Site 6.
- Notices of Violation – There are no documented NOV's other than those pertaining to administrative concerns at NAS Patuxent River.

In accordance with DoD policy regarding the classification of properties that may exhibit hazardous substance or petroleum contamination (please reference Deputy Under Secretary of Defense Goodman Memorandum dated 21 October 1996), EUL Site 6 has been classified as Category 7. This category applies to properties that have not been evaluated or require additional evaluation. While no releases, disposals, or mitigation of hazardous substances have been documented within EUL Site 6, there is reason to suspect petroleum waste polluted soil contamination adjacent to EUL Site 6. Further evaluation of this contamination concern should be performed prior to execution of any property transfer involving EUL Site 6.

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9. CERTIFICATION

Based on records reviews, site inspections, and interviews, the environmental professional(s) certify that the environmental conditions of the property are as stated in this document and this property is suitable for outgrant.

Environmental Professional:

Signature _____ Title _____

Print Name _____ Date _____

The real estate professional(s) acknowledge these restrictions and/or LUCs identified above and will ensure they are made a part of the outgrant document.

Real Estate Professional:

Signature _____ Title _____

Print Name _____ Date _____

Property Owner (Activity or Region) acknowledges and accepts the foregoing statement of environmental conditions and the land use controls (if any) that will be required for this real estate outgrant:

Signature _____ Title _____

Print Name _____ Date _____

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Appendix A
LIST OF CONTACTS

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Final

Enhanced Use Lease Site 7
Environmental Condition of Property Report
Administration Work Campus

Naval Air Station Patuxent River
Patuxent River, Maryland

Prepared for:



Naval Facilities Engineering Command Washington

Public Works Department

NAS Patuxent River

22445 Peary Road, Bldg. 504

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July 2010

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ABBREVIATIONS, ACRONYMS, AND SYMBOLS

ACHP	Advisory Council on Historic Preservation
ACM	Asbestos-containing material
AHERA	Asbestos Hazard Emergency Response Act
AICUZ	Air Installations Compatibility Use Zone
APZ	Accident potential zone
AQCR	Air quality control region
ARPA	Archeological Resource Protection Act
AST	Aboveground storage tank
BMP	Best Management Practice
BRAC	Base Realignment and Closure
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CWA	Clean Water Act
CZM	Coastal Zone Management
DoD	Department of Defense
ECP	Environmental Condition of Property
EDR	Environmental Data Resources
EFH	Essential fish habitat
EISA	Energy Independence and Security Act
ENE	East-north-east
EO	Executive Order
ER	Environmental Restoration
ESA	Endangered Species Act of 1973
ESD	Environmental site design
EUL	Enhanced Use Lease
FFA	Federal Facility Agreement
FIDS	Forest Interior Dwelling Species
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FY	Fiscal Year
GIS	Geographic Information System
GMR	General management recommendations
IPMP	Integrated Pest Management Plan
LBP	Lead-based paint
LID	Low impact development
LQG	Large Quantity Generator
LUC	Land use control
MBTA	Migratory Bird Treaty Act
MDE	Maryland Department of the Environment
MEC	Munitions and explosives of concern
MEP	Maximum extent practicable
mph	Miles per hour
MRP	Munitions Response Program
msl	Mean sea level
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act of 1990

NAS	Naval Air Station
NAVFAC	Naval Facilities Engineering Command
NAVRAMP	Naval Radon Assessment and Mitigation Program
NDW	Naval District Washington
NHPA	National Historic Preservation Act of 1966
NOAA	National Oceanographic & Atmospheric Administration
NOV	Notices of Violation
NRC	Naval Recreation Center
OPNAVINST	Office of the Chief of Naval Operations Instruction
PCBs	Polychlorinated biphenyls
PTC	Permit to Construct
RCRA	Resource Conservation and Recovery Act
RVs	Recreational vehicles
SDWA	Safe Drinking Water Act
SHPO	State Historic Preservation Officer
The Register	National Register of Historic Places
TSCA	Toxic Substances Control Act
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geologic Survey
UST	Underground storage tank
UXO	Unexploded ordnance

Executive Summary

Under its Enhanced Use Leasing (EUL) program, the Department of the Navy (hereinafter referred to as the “Navy”) is making available for lease non-excess real property for the development of new administrative space at the Naval Air Station (NAS) Patuxent River, Patuxent River, MD (hereinafter referred to as NAS Patuxent River or the “Station”). This Environmental Condition of Property (ECP) report was prepared for NAS Patuxent River EUL Site 7 (hereafter referred to as “EUL Site 7”) and its adjacent properties. This report evaluates the current and former uses of the site; describes the environmental conditions of the land, facilities, and real property assets within the site; and summarizes any environmental restrictions, land use controls, and consultation requirements that may be necessary for development within EUL Site 7.

The ECP report findings for EUL Site 7 are based on a record search of readily available documents, a thorough review of the applicable and relevant documents, analysis of the NAS Patuxent River Geographic Information System (GIS), interviews with personnel knowledgeable about the site and its adjacent properties, and visual site investigations conducted on May 18, 2010 and June 1, 2010.

EUL Site 7 consists of approximately 4.52 acres (18,300 square meters) located near the NAS Patuxent River Gate 1 entrance. According to historical topographic maps, aerial photography, and property record cards, EUL Site 7 remained undeveloped until NAS Patuxent was established in 1943. After the Navy took ownership of the site, EUL Site 7 served as a radio antenna tower operations and maintenance area. The infrastructure supporting the operations was demolished (date unknown) and the site has remained undeveloped. Property outside of the fenceline on the western boundary of the site was developed as the Patuxent River Naval Air Station Museum.

Areas of potential environmental concern identified during the ECP study for EUL Site 7 and its adjacent properties are listed below by subject area:

- Tanks/Petroleum Contamination.

In accordance with DoD policy regarding the classification of properties that may exhibit hazardous substance or petroleum contamination (please reference Deputy Under Secretary of Defense Goodman Memorandum dated 21 October 1996), EUL Site 7 has been classified as Category 7. This category applies to properties that have not been evaluated or require additional evaluation. While no releases, disposals, or mitigation of hazardous substances have been documented within EUL Site 7, there is reason to suspect contamination. Possible contamination concerns at EUL Site 7 include the petroleum waste polluted soil area. Further evaluation of contamination concerns should be performed prior to execution of any property transfer involving EUL Site 7.

1. INTRODUCTION

1.1 Introduction and Background

The Navy is making available for lease non-excess real property at the NAS Patuxent River, Patuxent River, Maryland (hereinafter referred to as NAS Patuxent River or the “Station”) under its EUL program.

NAS Patuxent River is located in Saint Mary’s County in Southern Maryland at the confluence of the Chesapeake Bay and the Patuxent River. NAS Patuxent River covers approximately 6,400 acres (25.9 square kilometers) with an additional 850 acres (3.4 square kilometers) at the Webster Field Annex, located about 15 miles (24.1 kilometers) south of the Station. The Naval Recreation Center (NRC) Solomons located across the Patuxent River in Solomons, Maryland is also under the administrative control of NAS Patuxent River and Naval District Washington (NDW). NRC Solomons encompasses approximately 300 acres (1.2 square kilometers) and is the largest outdoor recreation facility in the Navy. Figure 1-1 presents the location of NAS Patuxent River, Webster Field Annex, and NRC Solomons in the Washington, D.C. metropolitan area.

The Station supports naval aviation operations by researching, developing, testing and evaluating aircraft components and related products. The facilities are also used by foreign governments, academic institutions and private industry for similar projects. The Naval Aviation Systems Team at Patuxent River includes the Naval Air Station, the Webster Field Annex and the Naval Air Warfare Center Aircraft Division. NAS Patuxent River also is home to approximately 50 other tenant activities.

In support of the development of new administrative space through an EUL action, Naval Facilities Engineering Command (NAVFAC) Washington has prepared this ECP report for EUL Site 7. The following report presents a summary of readily available information on the current and former uses, environmental conditions of, and concerns relative to, the land, facilities and real property assets at EUL Site 7.



Figure 1-1. Location of NAS Patuxent River in the Washington, D.C. Metropolitan Area

1.2 **Organization of ECP Report**

The ECP report is organized as follows:

- Section 2 (Survey Methodology) provides the methodology used to conduct the ECP study, including records review, site visit, and interviews.
- Section 3 (Past and Current Use) describes the current and former uses of the EUL site and the adjacent property.
- Section 4 (Environmental Setting) describes the environmental setting of the EUL site.
- Section 5 (Environmental Conditions of Subject Property) addresses the environmental conditions and related findings for the EUL site.
- Section 6 (Environmental Conditions of Adjacent Property) addresses the environmental conditions and related findings for property adjacent to the EUL site.
- Section 7 (Conclusions) presents the conclusions and recommendations of the ECP study.
- Section 8 (References) presents a list of references used in preparation of the ECP report.
- Section 9 (Certification) provides certification of the ECP report.

1.3 **Purpose of ECP Report**

The purpose of this ECP report is to establish the environmental condition of the real property to support the proposed EUL real estate action. This ECP study is primarily based on the review of readily available information, visual site inspections, and interviews with personnel familiar with the site history to determine any environmental risks associated with the proposed site.

Readily apparent operational and regulatory compliance deficiencies of environmental program areas such as underground storage tanks (USTs), air emissions, lead-based paint, asbestos, pesticides, polychlorinated biphenyls (PCBs), radon, medical waste, munitions or explosives of concern, lead based paint, stormwater, and natural resources are also provided in the ECP report. This ECP study does not re-investigate or otherwise review the adequacy of previously conducted investigations or remedial actions.

This ECP report will provide baseline environmental conditions for EUL Site 7 pursuant to the following goals:

- To document inquiry into environmental conditions to support real estate decisions;
- To protect the Navy from future liability;
- To determine risk of exposure to grantees/government employees; and
- To inform grantees of environmental conditions, restrictions, and land use controls (LUCs) associated with the real property (Department of the Navy, 2006).

1.4 Parcel Identification and Boundaries

EUL Site 7 consists of approximately 4.52 acres (18,300 square meters) located near the NAS Patuxent River Gate 1 entrance, north of the Patuxent River Naval Air Museum. The site is currently undeveloped. Figure 1-2 presents the location of EUL Site 7 at NAS Patuxent River.



Figure 1-2. EUL Site 7 – NAS Patuxent River

1.5 **Legal Description**

Facility Name and Address: Naval Air Station Patuxent River, 22268 Cedar Point Road, Patuxent River, MD 20670

Property Owner: United States Government

Date of Ownership: 1 April 1943

Current Occupant: US Navy

Zoning: Military

County, State: St. Mary's, Maryland

USGS Quadrangle: Solomons Island, MD. 38076-C4-TF-024

Latitude, Longitude: 38°17'02.53"N, 76°26'55.76"W

Parcel Number: Not Available

2. SURVEY METHODOLOGY

2.1 Approach and Rationale

This ECP report was prepared to document the environmental conditions of, and concerns relative to, the land, facilities, and real property assets of EUL Site 7. The environmental conditions of properties adjacent to EUL Site 7 were also considered in this report.

This report serves as a summary of readily available information based on an extensive record search of available documents, a thorough review of the applicable and relevant documents, analysis of the Station's Geographic Information System (GIS), two visual surveys conducted on May 18, 2010 and June 1, 2010, and on-site interviews with personnel knowledgeable about the history of EUL Site.

Extensive environmental investigations and reports and pertinent historical documents were reviewed in support of this ECP report. However, no sampling or analysis of any media was conducted during this survey. Information obtained is reflected within this report by reference. A complete list of references is provided as Section 8 (References).

The information obtained from the Navy and other environmental reports were considered to be accurate unless reasonable inquiries indicated otherwise. New information or changes in site use could require a review and possible modification of the findings and conclusions contained in this report.

2.2 Property Classification Guidelines

Based on analysis of the available data, the EUL Site was classified into one of seven Department of Defense (DoD) Environmental ECP categories as defined by the S.W. Goodman Memorandum dated October 21, 1996. The property classification categories are as follows:

- Category 1: Areas where no release or disposal of hazardous substances or petroleum products has occurred (including no migration of these substances from adjacent areas).
- Category 2: Areas where only release or disposal of petroleum products has occurred.
- Category 3: Areas where release, disposal, and/or migration of hazardous substances has occurred, but at concentrations that do not require a removal or remedial response.
- Category 4: Areas where release, disposal, and/or migration of hazardous substances has occurred, and all removal or remedial actions to protect human health and the environment have been taken.
- Category 5: Areas where release, disposal, and/or migration of hazardous substances has occurred, and removal or remedial actions are underway, but all required remedial actions have not yet been taken.
- Category 6: Areas where release, disposal, and/or migration of hazardous substances has occurred, but required actions have not yet been implemented.
- Category 7: Areas that are not evaluated or require additional evaluation.

2.3 **Related Reports**

Related environmental reports used in the preparation of this ECP report include, but are not limited to the following:

- Final Environmental Impact Statement for Increased Flight and Related Operations in the Patuxent River Complex, Patuxent River, Maryland;
- Environmental Assessment for the Privatization of Navy Housing at Naval Station;
- Draft Final Environmental Assessment for Disposition of Excess Buildings;
- Integrated Natural Resources Management Plan;
- Tank Management Plan, Volume 1;
- (Environmental Restoration) Site Management Plan, 2009 Update;
- Cold War Historic Context (1945-1989) and Architectural Survey and Evaluation;
- Draft Integrated Pest Management Plan, Naval Air Station Patuxent River, Maryland;
- Environmental Baseline Survey Update - Electric Utility Privatization: Naval Air Station Patuxent River Main Base, Lexington Park, Maryland; Webster Field Annex, St. Inigoes, Maryland; & Naval Recreation Center Solomons, Solomons Island;
- Historic Landscape Survey, Naval Air Station Patuxent River, Webster Field, and Solomons Complex;
- Naval Air Station Patuxent River Spill Records Database;
- Building Asbestos Reports; and
- Draft Part 70 Operating Permit No. 24-037-0017.

A complete list of references is provided in Section 8 (References).

2.4 **Real Estate Document Review**

A comprehensive property history of EUL Site 7 was created by reviewing Property Record Cards maintained by NAS Patuxent River for all former and current buildings and infrastructure located within the site. Historical land use records and personal interviews were used to understand property use and condition prior to the Navy taking ownership of the property. In addition, an environmental data and historical records package including a radius report, relevant historical aerial photographs, and topographic maps of the site was obtained from Environmental Data Resources (EDR) on May 20, 2010. Section 3 (Past and Current Use) presents the past and current use of EUL Site 7.

3. PAST AND CURRENT USE

3.1 Installation History

Prior to the early 20th century, NAS Patuxent remained undeveloped and was used primarily for farming. Several plantations existed in the area, including Eltonhead Manor (1648), Susquehanna (1649), and Mattapany-Sewell (1663). A topographic maps dated 1905, indicates that a small community called Pearson was located near the current northwest boundary of the Station, which consisted of a few residences, post office, a store, automobile dealer, and a church. The community was no longer represented on any historical maps more recently dated than 1943 (NAVFAC, Atlantic Division, 2009b; EDR, 2010a; EDR, 2010b).

NAS Patuxent River was commissioned on April 1, 1943, in an effort to centralize widely dispersed air testing facilities that had been established prior to World War II. This consolidation effort was swift, and the farming operations on the property were replaced by flight test operations within a year after the 1943 ground breaking for construction. The U.S. Naval Test Pilot School was established in 1958. In 1975, the Naval Air Test Center began to assume its role as the Naval Air Systems Command's principal site for development testing. Test facilities were upgraded in the late 1970s, with some of the largest construction appropriations in the history of the base (NAVFAC, Atlantic Division, 2009b; EDR, 2010a; EDR, 2010b).

Within the last decade, several new facilities were established at NAS Patuxent River due to Base Realignment and Closure (BRAC) actions. More than \$155 million has been budgeted for new engineering complexes and renovation of existing facilities. These include the Aircraft Technologies Lab; North Engineering Center; South Engineering Center; Frank Knox School improvement; Integrated Project Team Building; and the Propulsion System Evaluation Facility. The Aircraft Technologies Lab and the North and South Engineering Centers combined are occupied by 1,300 people recently relocated to NAS Patuxent River (Department of the Navy, 2002).

NAS Patuxent River is largely developed with aircraft runways, taxiways, hangars, and supporting structures and equipment. Residential communities, commercial properties, schools, churches, and recreational areas are also present. The Station is improved with water, wastewater, electric, and natural gas service.

3.2 Subject Property

According to historical topographic maps and property record cards, EUL Site 7 remained undeveloped until NAS Patuxent was established in 1943. The area was cleared and several radio antenna towers were constructed by 1964 for use at NAS Patuxent River and later removed (date unknown). Building 105 was constructed in 1943 to support radio antenna towers operations and maintenance. A quonset hut was also constructed to support radio antenna towers operations and maintenance, and was demolished (date unknown). A small shed houses a lift station that services nearby buildings (EDR, 2010a; EDR, 2010b; Baker, 2010a; Baker, 2010b).

The terrain of EUL Site 7 is generally flat, with a very slight downward slope eastward across the site. The highest elevation on site is approximately 115 feet (35 meters) above mean sea level (msl) and the lowest elevation is approximately 110 feet (33.5 meters) above msl.

3.3 Adjacent Property

According to historical topographic maps, aerial photography, and property record cards, the property adjacent to EUL Site 7 remained undeveloped. Property outside of the fenceline on the western boundary of the site was developed as the Patuxent River Naval Air Station Museum. Table 3-1 summarizes existing adjacent area facilities and functions. Figure 5-1 illustrates the location of EUL Site 7 and the adjacent area facilities.

Table 3-1. Existing Adjacent Area Facilities

Facility Number/Name	Built Date	Function(s)
Building 1400	2006	Patuxent River Naval Air Station Museum

Property adjacent to the site provides a range of outdoor recreation activities including hunting, hiking, and bird-watching. The Outdoor Recreation Program at NAS Patuxent River relieves pressure from recreational areas in the community and generates a positive impact on the Station's staff productivity and retention (Department of the Navy, 2002).

4. ENVIRONMENTAL SETTING

4.1 Location

NAS Patuxent River is located in the southern portion of St. Mary's County, Maryland, at latitude 38°17'N and longitude 76°25'W, approximately 54 miles (87 kilometers) southeast of Washington, DC. St. Mary's County is the southernmost part of Maryland's western shore and consists of a peninsula surrounded by tidal water on all but the northwestern boundary. NAS Patuxent River occupies a small peninsula and broad headland (known as Cedar Point) at the confluence of the Patuxent River and Chesapeake Bay in the eastern portion of the county. The Station, which comprises approximately 6,400 acres (25.9 square kilometers), is bounded by the Patuxent River to the north, the Chesapeake Bay to the east, and the town of Lexington Park, Maryland to the south and west (NAVFAC, Atlantic Division, 2009b). Figure 1-1 presents the location of NAS Patuxent River, Webster Field Annex and NRC Solomons in the Washington, D.C. metropolitan area.

4.2 Climatology

NAS Patuxent River lies within the Humid Temperate, Semi-Continental Climate Zone. The Station's proximity to the Patuxent and Potomac Rivers, the Chesapeake Bay, and their tributaries affects the local climate. The atmospheric flow in this region is from west to east across North America, and there are four distinct seasons. Prevailing winds are from the northwest, except during the warm months, when they are more southerly. Average wind speeds are approximately nine miles per hour (mph), although winds may reach in excess of 60 mph on rare occasions. Windiest periods in this region include late winter and early spring. Additionally, other extreme weather events, such as tornadoes, hurricanes, and blizzards occur during other seasons, but are very rare.

Normal temperatures for the region range from an average low of 29°F and an average high of 44°F in January (the coldest month) to an average low of 70°F and an average high of 86°F in July (the warmest month).

The annual mean precipitation for the area is approximately 41.7 inches (1.1 meters), with approximately 15 inches (0.381 meters) of this amount occurring as snowfall. Precipitation occurs evenly throughout the year, with slight increases occurring in July and August. In summer, precipitation occurs mostly through thunderstorms, which occur on an average of 33 days per year. Drought may occur in any season but is most likely to occur in the summer (Department of the Navy, 2002).

4.3 Geology

The geological deposits underlying NAS Patuxent River are thick, unconsolidated beds of sand, silt, clay, and gravel resulting from marine deposits. Because these formations are entirely sedimentary in nature, they are extremely vulnerable to erosion. NAS Patuxent River is primarily underlain with a Matapeake-Mattapex-Sassafras soil association with smaller areas of a Sassafras- Beltsville association and Othello-Mattapex association (Department of the Navy, 2002).

The dominant surface sediments at the Station were deposited during the Quaternary Period, primarily Sunderland, Wicomico, and Talbot deposits. Layers that outcrop in St. Mary's County were deposited during the Tertiary and Quaternary Periods. The Station is underlain by a Cretaceous layer, which consists of Arundel, Patapsco, Raritan, Magothy, Matawan, and Monmouth formations (Department of the Navy, 2002).

4.4 Hydrogeology

There are three principal groundwater aquifers beneath NAS Patuxent River: Piney Point-Nanjemoy Aquifer, Aquia Aquifer, and Patapsco Aquifer. The Piney Point- Nanjemoy Aquifer is a major source of potable water for residential users in southern Maryland. The Aquia Aquifer is the principal source of potable and industrial water for both the Station and local public water suppliers. The Station also has two water supply wells tapping into the Patapsco Aquifer.

The elevation of the water table beneath the Station ranges from sea level along the coastal areas to approximately 80 feet (24 meters) below msl in the southwestern portion of the facility (Department of the Navy, 2009).

Several major drainage areas collect precipitation runoff from the Station. This runoff goes directly to one of four hydraulic sinks: (1) Patuxent River, (2) Chesapeake Bay, (3) estuary areas, or (4) freshwater creeks and ponds and associated wetland areas. All of the runoff from the Station eventually flows to the Chesapeake Bay.

There are six constructed ponds located on the Station. Except for Richneck Pond, all are located in the southern and western portions of the Station and serve to control runoff and provide fish and wildlife habitats, recreation, and a source of water for firefighting. In addition to these water bodies, there are low-lying areas throughout the Station that tend to act as temporary stormwater storage areas, helping to control runoff rates and downstream flooding (Department of the Navy, 2002).

4.5 Topography

The terrain at NAS Patuxent River rises gradually from the Chesapeake Bay shoreline westward. A majority of the Station (70 percent) is level and fairly well-drained. Some low areas are somewhat-poorly-drained to poorly-drained, and become intermittently flooded and/or saturated. The southwestern portion of the Station is hilly, with the highest elevations on the Station.

The United States Geologic Survey (USGS) Solomons Island, Maryland quadrangle indicates a general topographic gradient of east-north-east (ENE) for the Station. Elevation averages 35 feet (10 meters) above msl at the center of the Station, with higher elevations on the western portion of the property and lower elevations on the north and east boundaries with the Patuxent River and the Chesapeake Bay, respectively (EDR, 2010a; EDR, 2010b).

5. ENVIRONMENTAL CONDITIONS OF SUBJECT PROPERTY

This section discusses various aspects of the affected environment within EUL Site 7 and provides regulatory background, discussion of resources or features present, and an overview of restrictions, land use controls, and consultation requirements that may be necessary for development within this site.

A site map (Figure 5-1) was developed using GIS data retrieved from the Navy. The map displays the pertinent environmental constraints identified in the site. The map is not comprehensive and is intended only to support the information provided in this report.

5.1 Environmental Restoration

The Environmental Restoration (ER) program at NAS Patuxent River was established to comply with the Federal Facility Agreement (FFA) signed in December 2000 between the Navy and the EPA Region III. The ER program identifies, investigates, and environmentally restores sites containing hazardous substances to reduce the risk to human health and the environment. The ER program also incorporates the Munitions Response Program (MRP), which manages the environmental, health, and safety issues presented by unexploded ordnance (UXO), discards munitions, munitions constituents, and other munitions and explosives of concern (MEC) found on-base (Department of the Navy, 2009b).

Due to the historical use of NAS Patuxent River and procedures once used to treat and dispose of waste and munitions, the installation as a whole is at risk for environmental contamination. A variety of facility-wide, multi-site and single site environmental investigations have been conducted at NAS Patuxent River to identify and assess the presence of contaminants in areas of potential concern. The Station's Site Management Plan identifies 56 specific environmental restoration sites at NAS Patuxent River (Department of the Navy, 2009). Numerous additional investigations are underway or are anticipated to begin during Fiscal Year (FY) 2010 and FY 2011.

EUL Site 7

Upon review of the Site Management Plan, it has been determined that no documented ER sites are located within EUL Site 7 and no additional investigations are underway or anticipated within EUL Site 7 (Department of the Navy, 2009). Therefore, no environmental conditions, restrictions, or land use controls associated with the ER program would apply to EUL Site 7.

5.2 Munitions or Explosives of Concern

EUL Site 7

There are no documented MRP sites within EUL Site 7, and no explosives operations (e.g., munitions storage or handling) are known to have taken place within EUL Site 7. However, due to incomplete records and historical disposal practices at NAS Patuxent River, there is some potential to find MEC, including buried UXO, during earthwork at the Station (Simpson, 2010; NAVFACWASH, 2010). If MEC is discovered, earth disturbance in the vicinity of the discovery must cease and the location and description of the item(s) must be reported immediately to the Navy Project Manager.

5.3 Tanks/Petroleum Contamination

Storage tanks are classified based on their location and referred to as aboveground storage tanks (AST) and underground storage tanks (UST). Through the Resource Conservation and Recovery Act's (RCRA) Hazardous and Solid Waste Amendments, EPA established a federal program to regulate USTs containing petroleum and hazardous chemicals to limit corrosion and structural defects and thus minimize future tank leaks. In addition, the amendments directed EPA to set operating requirements and technical standards for tank design and installation, leak detection, spill and overfill control, corrective action, and tank closure. The UST program is implemented in Maryland by the Maryland Department of the Environment (MDE) (USEPA, 2010b).

Storage tanks at NAS Patuxent River are used to store a variety of petroleum products to support mission-related activities. NAS Patuxent River has an active Tank Management Plan that lists both ASTs and USTs currently in use, regulatory requirements for each storage tank, and ensures proper inspection and maintenance is performed (Naval Air Station Patuxent River, Maryland, 2008). Spills and resulting soil contamination from ASTs, USTs, or other sources of petroleum are documented and stored in a spill database specific to NAS Patuxent River and separate to the Tank Management Plan. The spill database contains a complete record of spills dating back to 1994.

EUL Site 7

Based on discussions with installation personnel, Tanks 105A (AST, 100 gallons, diesel) and 105 (AST 250 gallon, fuel) were removed from EUL Site 7 prior to 2003 (Costanzo, 2010; Baker, 2010). GIS indicates an area of petroleum waste polluted soil in the area of demolished Building 105 (Radio Transmitter Building) (NAVFACWASH, 2010) (see Figure 5-1). However, no other records document the petroleum polluted soil area at EUL Site 7 and a visual site inspection does not indicate any potential contamination of significance.

No tanks or other sources of potential petroleum contamination are located within EUL Site 7 (Naval Air Station Patuxent River, Maryland, 2008; NAVFACWASH, 2010). Additionally, there are no historical records of tanks formerly within this site. However, historical tank records may be incomplete, and there is some potential that undocumented tanks could be encountered during earthwork at the Station. Accordingly, there is also some potential for subsurface or groundwater contamination as a result of spills or leaks associated with any such undocumented tanks (Costanzo, 2010).

5.4 Hazardous Substances/Hazardous Waste

Hazardous substances and hazardous waste are defined by EPA as a material that exhibits a characteristic of ignitability, corrosivity, reactivity, or toxicity, or is specifically listed as a hazardous material. Several federal environmental policies list and require special handling procedures for certain hazardous substances, including the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), Toxic Substances Control Act (TSCA), and RCRA. CERCLA, better known as the Superfund, ensures liability and clean-up of abandoned hazardous material by responsible parties provides (USEPA, 2010d). EPA controls hazardous substances through the TSCA, which addresses chemical substances and mixtures whose manufacture, processing, distribution, use, or disposal may present an unreasonable risk of injury to health or the environment (Department of the Navy, 2009b). RCRA is broad in its

regulatory management of solid and hazardous waste, including cleanup, through corrective action, of releases of hazardous waste at RCRA-regulated facilities, such as NAS Patuxent River. RCRA requires cradle-to-grave management of hazardous waste through a recordkeeping system that tracks shipments of hazardous waste. Hazardous waste treatment, storage, and disposal facilities are regulated through the issuance of operating permits. EPA has delegated the enforcement of RCRA in Maryland to MDE.

On-site accumulation times for hazardous waste at NAS Patuxent River are restricted to the applicable time frames referenced in 40 CFR 262.34 and other applicable Maryland laws or regulations. Non-explosive hazardous waste is transported to an approved, off-site hazardous waste treatment, storage, or disposal facility in accordance with Department of Transportation regulations. The hauling and disposal of demolition debris, including hazardous wastes containing lead, asbestos, and air conditioner refrigerant, is performed in compliance with local, state, and federal codes and requirements.

NAS Patuxent River is listed in the EDR as a Large Quantity Generator (LQG) of hazardous wastes (EDR, 2010c). There are 50 buildings designated as satellite accumulation areas for hazardous waste. Pursuant to 40 CFR 262.34(c)(1), these points may accumulate as much as 55 gallons (208 liters) of hazardous waste or one quart of acutely hazardous waste. Once they become full, containers at these satellite accumulation points must be transferred to one of the 38 active less-than-90-day central accumulation sites at NAS Patuxent River.

EUL Site 7

There are no records of any hazardous waste storage or contamination at EUL Site 7 (Olson, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with hazardous substances or waste would apply to EUL Site 7.

5.5 Solid/Bio-hazardous Waste

Solid waste is any garbage, refuse, sludge, or other discarded material including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, agricultural, or community activities (Department of the Navy, 2009b). Bio-hazardous waste, or medical waste, is defined as all waste generated at health care facilities, such as hospitals, clinics, physician's offices, dental practices, blood banks, and veterinary hospitals/clinics, as well as medical research facilities and laboratories. Solid and bio-hazardous waste generators, transporters, destruction facilities, and disposal facilities are subject to RCRA, and applicable state and local regulations and regulatory requirements that prohibit disposing of solid waste in open dumps and require bio-hazardous waste be treated and disposed of safely (USEPA, 2010c).

EUL Site 7

EUL Site 7 has not been associated with the generation, handling, or storage of bio-hazardous or solid waste (Olson, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with solid and bio-hazardous waste would apply to EUL Site 7.

5.6 Polychlorinated Biphenyls

The TSCA authorizes EPA to secure information on all new and existing chemical substances and to control any of these substances that could cause an unreasonable risk to public health or the environment. PCBs are regulated under Title I, Control of Toxic Substances, which includes provisions for testing chemical substances and mixtures, manufacturing and processing notices, regulating hazardous chemicals substances and mixtures, managing imminent hazards, and reporting and retaining information.

EUL Site 7

PCBs were originally used at NAS Patuxent River in transformers located throughout the installation. However, all transformers containing PCBs were retrofitted or replaced in the 1970s and 1980s. No PCB program or reports have been developed due to the overall low risk of PCB equipment and exposure (Ichniowski, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with PCBs would apply to EUL Site 7.

5.7 Asbestos-Containing Material

Asbestos abatement is regulated under the TSCA Title II, Asbestos Hazard Emergency Response, which was added by the Asbestos Hazard Emergency Response Act (AHERA). AHERA provides for the promulgation of federal regulations requiring inspection for asbestos and appropriate response actions in schools and mandates periodic reinspection. In addition, it requires EPA Administrators to determine "the extent of the danger to human health posed by asbestos in public and commercial buildings and the means to respond to any such danger" (Department of the Navy, 2009c).

Several of the buildings at NAS Patuxent River were built prior to health concerns related to asbestos-containing material (ACM) arose and regulations were implemented. An asbestos survey was completed for buildings suspected of having ACM during the early 1990s. A report was completed for each building and mitigation and clean-up efforts were completed thereafter (Apex Environmental, Inc., 1993). However, due to the likelihood that ACM remains present in many buildings, it should be assumed that all buildings subject to renovation or demolition contain ACM unless a report demonstrates otherwise.

EUL Site 7

There are no buildings or other types of infrastructure at EUL 7 that would have the potential for asbestos-containing materials, and none are known to have previously existed at EUL Site 7 (EDR, 2010a; EDR, 2010b; NAVFACWASH, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with ACM would apply to EUL Site 7.

5.8 Lead-based Paint

The use of toxic lead-based paint (LBP) was banned in 1977 by the Consumer Product Safety Commission. The MDE has established the Lead Poisoning Prevent Program to enhance citizen safety and prevent exposure to LBP (MDE, 2010b).

Before it was removed from the market, LBP was commonly used on the exterior and interior walls during the renovation or construction of buildings at NAS Patuxent River. Many of these buildings remain today. No comprehensive survey of LBP containing-buildings has been completed for NAS Patuxent River. Due to the age of many buildings at NAS Patuxent River and lack of LBP mitigation or clean-up efforts, it is suspected that buildings built before 1978 contain LBP unless documentation demonstrates otherwise.

EUL Site 7

There are no buildings or other types of infrastructure at EUL Site 7 that would have the potential for lead-based paint, and none are known to have previously existed at EUL Site 7 (EDR, 2010a; EDR, 2010b; NAVFACWASH, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with LBP would apply to EUL Site 7.

5.9 Pesticides and Herbicides

NAS Patuxent maintains an Integrated Pest Management Plan (IPMP), which is a long-range planning and operational tool that establishes the strategy and methods for conducting a safe, effective, and environmentally sound integrated pest management program. The IPMP covers all pest management and pesticide-related activities conducted within all areas of the installation. The IPMP was developed in accordance with Navy guidance (e.g., OPNAVINST 6250.4) and applicable laws and regulations, such as the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). FIFRA provides the basis for regulation, sale, distribution and use of pesticides in the US, and addresses applicator certification requirements, record keeping, and penalties for pesticide misuse (NAVFAC, Atlantic Division, 2009a).

EUL Site 7

There are no documented invasive species requiring the use of pesticides or herbicides on EUL Site 7 (Naval Facilities Engineering Command, Atlantic Division, 2009a; NAVFACWASH, 2010; Smith, 2010a; Rambo, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with pesticide and herbicide contamination would apply to EUL Site 7.

5.10 Radon/Radiological Material

Indoor radon concentrations are regulated under TSCA Title III (Indoor Radon Abatement). In response, the Navy established the Radon Assessment and Mitigation Program (NAVRAMP) which identifies, assesses, and mitigates the infiltration of radon into existing Navy-occupied buildings and incorporates preventive practices in the design and construction of new buildings.

EUL Site 7

St. Mary's County is classified as Zone 2 by the EPA, indicating a moderate potential for elevated indoor radon levels. However, a base-wide survey of radon levels was completed in the

1970s and 1980s. The survey found no radon levels of concern; therefore, no radon program is established at the Station (Ichniowski, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with elevated radon levels would apply to EUL Site 7.

5.11 Water Quality

5.11.1 *Surface Water*

Important aquatic resources at NAS Patuxent include the Patuxent River, Chesapeake Bay, Pine Hill Run, Goose Creek, Pearson Creek, Harper’s Creek, and six freshwater ponds. These open water areas range from brackish to freshwater systems and support a variety of fish and wildlife resources. NAS Patuxent is situated on a peninsula at the mouth of the Patuxent River. Of NAS Patuxent’s approximately 6,400 acres (25.9 square kilometers), 1,041 acres (4.2 square kilometers) are open water or wetland (discussed in Section 5.12.2(Wetlands)). This acreage is comprised of six freshwater ponds; several perennial and intermittent streams; four estuaries; two seaplane basins; a partially enclosed sea-wall; and numerous saline, freshwater tidal, and nontidal marshes, in addition to forested and scrub/shrub wetlands (Department of the Navy, 2002).

NAS Patuxent shares boundaries with two significant resources – the Chesapeake Bay and the Patuxent River. The Chesapeake Bay, with its associated salt marshes, is the largest estuary in North America and one of the most productive in the world. Its bounty of finfish, shellfish, crabs, and waterfowl is world-renowned. The Patuxent River is one of the rivers initially designated as part of the Maryland State Wild and Scenic Rivers Program. In addition, while no Maryland river is on the National Wild and Scenic Rivers System, Patuxent River is listed in the Nationwide Rivers Inventory as having the significant resource values required for potential inclusion (Department of the Navy, 2002).

NAS Patuxent contains many miles of intermittent and perennial headwater streams. Streams usually occupy well-defined channels where topographic gradients are steeper or where they have been channeled. In the level, low-lying areas, streams often occupy split or braided channels. Those streams occurring in densely forested areas have not all been detected by photo interpretation or mapped.

EUL Site 7

There are no surface waters at EUL Site 7 (Department of the Navy, 2002). Therefore, no environmental conditions, restrictions, or land use controls associated with the presence of surface water would apply to EUL Site 7.

5.11.2 *Stormwater*

Stormwater is generated when precipitation runs off from land and impervious areas such as paved streets, parking lots, and building rooftops. Stormwater runoff can collect pollutants such as oil and grease, chemicals, nutrients, metals, and bacteria as it travels across land, and it also causes soil erosion when traveling at velocities sufficient to carry sediment particles. The Clean Water Act (CWA) regulates both direct and indirect discharges of “priority” pollutants that are often conveyed by stormwater, such as total suspended solids, fecal coliform, and oil and grease.

Stormwater is typically managed using structural or nonstructural Best Management Practices (BMPs). Structural BMPs include control systems such as infiltration devices, ponds, filters and constructed wetlands, while nonstructural BMPs include low impact development (LID) practices and management measures (USEPA, 2004).

EUL Site 7

Stormwater currently infiltrates into vegetated areas within and adjacent to EUL Site 7. Any new development within EUL Site 7 must be designed and executed in accordance with applicable requirements of the following standards and regulations to ensure that stormwater impacts are minimized. Pursuant to Section 438 of the Energy Independence and Security Act (EISA) of 2007, development with a footprint greater than 5,000 SF (465 square meters) must maintain or restore to the maximum extent practicable pre-development hydrology with respect to temperature, rate, volume, and duration of flow (U.S. Congress, 2007). Pursuant to the Navy's LID policy, the Navy sets a goal of no net increase in stormwater volume and sediment or nutrient loading from construction projects (Department of the Navy, 2007). Pursuant to Maryland's Stormwater Management Act of 2007, development with a footprint greater than 5,000 SF must implement environmental site design (ESD), to the maximum extent practicable (MEP) in accordance with Section 4.0 Stormwater Management Criteria of the 2000 Maryland Stormwater Design Manual. Additionally, re-development with a footprint greater than 5,000 SF must implement ESD to the MEP to provide water quality treatment for a minimum of 50 percent of the existing impervious area within the limits of disturbance. For additional information, please reference the 2000 Maryland Stormwater Design Manual (MDE, 2009; MDE, 2010).

5.11.3 Groundwater

The Safe Drinking Water Act (SDWA) was originally passed by Congress in 1974 to protect public health by regulating the nation's public drinking water supply. The law was amended in 1986 and 1996 and requires the protection of drinking water and its sources – rivers, lakes, reservoirs, springs, and groundwater wells. SDWA authorizes the US EPA to set national health-based standards for drinking water to protect against both naturally-occurring and man-made contaminants that may be found in drinking water (USEPA, 2010f).

The drinking water at NAS Patuxent is pumped from the Piney Point/Nanjemoy, Aquia, and Patapso aquifers – groundwater sources below St. Mary's County. The Compliance Division of the NAVFACWASH Public Works Environmental Division at NAS Patuxent River is responsible for both groundwater monitoring and protection of groundwater well locations on the Station. However, to date, no formal Source Water or Wellhead Protection Plan has been written (NAVFAC, Atlantic Division, 2009b).

EUL Site 7

There are no known groundwater wells present within EUL Site 7; therefore, there is no site specific information on the groundwater. GIS indicates an area of petroleum waste polluted soil in the area of demolished Building 105 (Radio Transmitter Building). It is unknown whether contaminated subsurface soil or groundwater may be present as a result of the petroleum waste area. Due to incomplete records, a more detailed site inspection including multi-media sampling is recommended prior to development to assess the potential for groundwater contamination.

5.12 Natural Resources

5.12.1 *Forests*

Forested areas account for approximately 42 percent (2,817 acres, 11.6 square kilometers) of the land cover at NAS Patuxent. The forests on NAS Patuxent are presented in four broad classifications of forest types: bottomland pine; upland pine; bottomland hardwood; and upland hardwood (Department of the Navy, 2002).

Pine forests are defined as areas dominated mainly by trees of the genus *Pinus*, consisting of needle-leaved evergreen species. Upland pine forest accounts for 7 percent (207 acres, 837,700 square meters) of the forests encountered on NAS Patuxent. Bottomland pine forest consists of needle-leaved evergreen species in areas where the water table is at a depth sufficient to influence the development of oxygen-reducing conditions and create hydric soil and hydrophytic vegetation characteristics. This forest type accounts for 1 percent (24 acres, 97,100 square meters) of the forests encountered on NAS Patuxent. Upland hardwood forests consist of hardwood tree species in areas where the water table is below a depth where hydric characteristics develop in the soils and plant community. This forest type accounts for 21 percent (581 acres, 2,351,000 square meters) of the forests encountered on NAS Patuxent. Pine species also occur in combination with hardwood tree species to form mixed forest types. This mixed forest type accounts for 21% (580 acres, 2,350,200 square meters) of the forests encountered on NAS Patuxent.

NAS Patuxent is an important migratory bird area as a result extensive forest stands throughout the base. The Migratory Bird Treaty Act (MBTA) protects migratory birds and their habitats, and establishes a permitting process for legal taking. Except as permitted, actions of the Navy may not result in pursuit, hunting, taking, capture, killing, possession, or transportation of any migratory bird, bird part, nest, or egg thereof.

The potential for commercial forest products such as poletimber, sawtimber, pulpwood, and firewood is an added economic benefit afforded by the forested areas on NAS Patuxent. All merchantable timber that is cut on NAS Patuxent is considered Navy Real Property and must be disposed of properly, with appropriate disbursement to the Navy Forestry Account.

The most important management prescription proposed for wildlife habitat concerns is the designation of a large, contiguous forest block on the south side of the Station. This forested area will benefit many rare, threatened, and endangered species that are known to and/or have the potential to inhabit the region. The most important indicator of the success of the forest management prescription for the maintenance and restoration of critical ecosystem functions is the monitoring of Forest Interior Dwelling Species (FIDS). These species are considered "area sensitive" species and require some critical mass of contiguous forest type in order to survive. The monitoring of populations of these species is crucial in determining the success of the forest block (Department of the Navy, 2002).

EUL Site 7

There are contiguous upland pine forest areas located within EUL Site 7. This stand of pine forests are not considered to be potential forest interior dwellers (FID) species habitat (Rambo, 2012). Any tree clearing is recommended to take place in the winter to avoid disrupting

migratory birds. Additionally, all merchantable timber that is cut on NAS Patuxent is considered Navy Real Property and must be disposed of properly, with appropriate disbursement to the Navy Forestry Account (Department of the Navy, 2002).

5.12.2 Wetlands

The United States Army Corps of Engineers (USACE) and EPA define jurisdictional wetlands as areas that are inundated or saturated by surface water or groundwater frequently and long enough to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands provide important plant and wildlife habitat and serve as buffers and filters essential for maintaining the water quality of nearby surface waters.

The wetlands at NAS Patuxent River are protected by Section 404 of the CWA, Executive Order (EO) 11990 (Wetland Protection), and applicable state regulations, including the Maryland Nontidal Wetlands Protection Act, Maryland Tidal Wetlands Act, and the Waterway and 100-Year Floodplain Construction Regulations. Section 404 of the CWA prohibits the discharge of dredged or fill material into wetlands or other waters of the United States if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's water would be significantly degraded. Regulated activities are controlled by a permit review process administered by the USACE (USEPA, 2010e).

EO 11990 was implemented in 1977 to protect wetlands and their associated ecosystem services. This EO directs each federal agency to avoid undertaking or providing assistance for new construction located in wetlands unless the head of the agency finds that 1) there is no practicable alternative to such construction, and 2) all practicable measures will be taken to minimize impacts to the wetlands. In addition, the Navy has a “no net loss” policy requiring the replacement of any wetlands destroyed or eliminated through a project.

To protect jurisdictional wetlands, MDE requires maintaining an area surrounding a wetland called a buffer. Activities that may disturb or occur within a non-tidal or tidal wetland or surrounding buffer are regulated under COMAR 26.23 and COMAR 26.24, respectively. According to COMAR 26.23.01, a buffer is a regulated area, 25 feet in width, surrounding a nontidal wetland, and measured from the outer edge of the non-tidal wetland. MDE requires the action proponent to obtain a Non-tidal Wetlands and Waterways Permit for any activity that alters a non-tidal wetland or its 25-foot buffer.

The Chesapeake Bay Critical Area Commission requires maintaining a 100-foot buffer around tidal wetlands and streams to improve runoff water quality and reduce the amounts of toxic substances entering tidal waters (Critical Area Commission, 2008). The Navy maintains these areas at NAS Patuxent by avoiding removal of trees within 100-foot riparian buffers wherever possible (U.S. Department of the Navy, 2008).

Wetland delineations for NAS Patuxent were performed with data collection between June and October 1995. This technique produced a wetland delineation that was conservative and probably included some upland areas. These delineations were not flagged or surveyed in the field; therefore they should be considered rough estimates (Rambo, 2010; Smith, 2010a; Department of the Navy, 2002).

EUL Site 7

According to the NAS Patuxent River GIS, there are no wetlands present within EUL Site 7. Therefore, no environmental conditions, restrictions, or land use controls associated with wetlands would apply to EUL Site 7.

5.12.3 Floodplains

A floodplain is the area along or adjacent to a stream or a body of water that is capable of storing or conveying floodwaters. Floodplains perform important natural functions, including moderating peak flows, maintaining water quality, recharging groundwater, and preventing erosion. In addition, floodplains provide wildlife habitat, recreational opportunities, and aesthetic benefits. To protect floodplains and minimize future flood damage, EO 11988 Floodplain Management restricts development within the 100-year floodplain. A 100-year floodplain is defined as an area that is subject to a one-percent or greater chance of flooding in any given year. Under EO 11988, all federal agencies must 1) determine if any of their actions would occur within a floodplain, 2) evaluate the potential effects of these actions, and 3) analyze alternatives to these actions.

EUL Site 7

There are no floodplains within EUL Site 7 (Department of the Navy, 2002). Therefore, no environmental conditions, restrictions, or land use controls associated with the presence of floodplains would apply to EUL Site 7.

5.12.4 Coastal Zone

Maryland's Coastal Zone Management (CZM) Program was created in response to the passage of the Federal Coastal Zone Management Act of 1972. The goal of this program is to "preserve, protect, develop and, where possible, restore our coastal resources." Maryland's CZM Program was created in 1978 and is a network of state laws and policies designed to protect coastal and marine resources. Maryland's coastal zone includes 3,190 miles of coast in 16 counties and Baltimore City (MDNR, 2002). This area includes the Chesapeake Bay, coastal bays, and the Atlantic Ocean, as well as the towns, cities, and counties that have jurisdiction over the coastline. Maryland's coastal zone encompasses two thirds of the state's land area and is home to greater than 65 percent of the state's residents (MDNR, 2002). Federally controlled lands are excluded from the coastal zone per 16 U.S.C. 1453, Section 304, Paragraph (1). However, the Coastal Zone Management Act requires all federal activities that could affect land, water, or natural resources on the coastal zone to be consistent to the maximum extent practicable with the enforceable policies of the approved state CZM program. That is, even if the action occurs on federal land (excluded from the coastal zone), the action must be consistent to the maximum extent practicable with the state CZM program if it affects coastal resources.

The Chesapeake Bay Critical Area Law regulates all lands under the tidal influence of the Chesapeake Bay and its tributaries up to the head of the tide, as well as wetlands connected to these waters. It also regulates land within a 1,000-foot boundary inland from that line. The Critical Area Law is included within Maryland's Coastal Zone Management Program. Any disturbance within the Critical Area would require consultation with the Chesapeake Bay Critical Area Commission.

EUL Site 7

EUL Site 7 development will not impact the Maryland Coastal Zone or Critical Area. Therefore, no environmental conditions, restrictions, or land use controls associated with the Maryland Coastal Zone or Critical Area would apply to EUL Site 7.

5.12.5 Essential Fish Habitat

Fish and invertebrate species and their habitat are regulated and protected by several federal laws. The most notable of the federal laws is the Fishery Conservation and Management Act of 1976, which was reauthorized and amended by the Sustainable Fisheries Act in 1996 and is now popularly designated as the Magnuson-Stevens Fishery Conservation and Management Act. These acts mandated habitat conservation for federally managed fish species via the conservation tool known as essential fish habitat (EFH). The EFH mandate required that regional fishery management councils, through Federal Fishery Management Plans, describe and identify EFH for each federally managed species, minimize to the extent practicable any adverse effect on such habitat caused by fishing, and identify other actions to encourage the conservation and enhancement of such habitats. EFH is defined by Congress for managed species as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (16 U.S.C. 1802[10]). Within the vicinity of the NAS Patuxent River (upper Chesapeake Bay), EFH has been designated for 11 of the 23 EFH fish species found in the Chesapeake Bay.

EUL Site 7

There is no essential fish habitat within EUL Site 7 (Department of the Navy, 2002). Therefore, no environmental conditions, restrictions, or land use controls associated with essential fish habitat would apply to EUL Site 7.

5.12.6 Threatened or Endangered Species

The Endangered Species Act of 1973 (ESA) protects federally-listed threatened, endangered, and candidate species of fish, wildlife, and plants and their designated critical habitats. Under this law, no federal action is allowed to jeopardize the continued existence of an endangered or threatened species. ESA also requires consultation with the United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (now called National Oceanographic & Atmospheric Administration (NOAA) Fisheries Service) and the preparation of a biological assessment when such species are present in an area that is affected by government activities (USFWS, 2010).

EUL Site 7

Based on previous surveys and discussions with NAS Patuxent River Environmental Division personnel, there are no federally- or state-listed threatened or endangered species at EUL Site 7 (Smith, 2010a; Smith, 2010b; Department of the Navy, 2002). Therefore, no environmental conditions, restrictions, or land use controls associated with threatened or endangered species would apply to EUL Site 7.

5.13 Cultural Resources

The National Historic Preservation Act of 1966 (NHPA), enacted under 16 United States Code (U.S.C.) 470, provides for the National Register of Historic Places (the Register), defines National Historic Landmarks, provides for the designation of a State Historic Preservation Officer (SHPO), and establishes the Advisory Council on Historic Preservation (ACHP). The Register lists sites, districts, buildings, structures, and objects of significance in American history, architecture, archeology, engineering, and culture. These resources may be of local, State, or national significance. Section 106 of the NHPA requires federal agencies to consider the effects of undertakings (i.e., actions) on any resource that is included or eligible for inclusion in the Register, and to afford the ACHP a reasonable opportunity to comment on such undertakings. In Maryland, the Maryland Historical Trust (a division of the Maryland Department of Planning) serves as the SHPO and also participates in Section 106 consultations. Pursuant to OPNAVINST 5090.1C, Chapter 5-5, an Environmental Assessment must be prepared for any proposed action that would have an adverse effect on resources listed or determined to be eligible for listing in the Register.

Section 110 of the NHPA requires federal agencies to establish a preservation program for the identification, evaluation, nomination (for the Register), and protection of historic properties. To this end, the Navy performs surveys and investigations to identify any historic properties under its jurisdiction.

5.13.1 Historic Architectural Resources

The most recent architectural and historic landscape evaluation of NAS Patuxent was performed in October 2009 (NAVFACWASH, 2009; NAVFACWASH, 2010). The surveys identified architectural resources and determined if resources were eligible for listing on the Register.

EUL Site 7

No historic buildings or landscapes have been identified within EUL Site 7 (Smolek, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with the presence of known historic architectural resources would apply to EUL Site 7. However, once the lessee provides information about the development plans, the Navy will pursue consultation with SHPO to seek concurrence that there is no adverse effect to historic architectural resources.

5.13.2 Archeological Resources

Archeological resources are material remains of past life or activities (Reinke & Swartz, 1999). Some examples of archeological resources include pottery, basketry, bottles, weapons, tools, rock paintings, rock carvings, and gravesites.

The Native American Graves Protection and Repatriation Act of 1990 (NAGPRA), enacted under 25 U.S.C. 3001, prohibits the intentional removal of certain types of Native American cultural items from Federal or tribal lands. Removal of cultural items may be permitted under an Archeological Resource Protection Act (ARPA) permit, which includes authorization and a written agreement between the federal agency and an appropriate repository that will house and curate the collection recovered from the project, and in consultation with the appropriate Native American groups (USDI, 2010). NAGPRA provides for the return of burial remains, associated

funerary objects, sacred objects, and objects of cultural patrimony to the appropriate tribes. It established Native American ownership of human remains and associated artifacts discovered on Federal lands after the date of enactment (USDI, 2010).

EUL Site 7

A Phase I archeological survey, which locates archeological resources, has been performed at NAS Patuxent to make generalizations about the type and distribution of archeological properties that may be present. This survey indicated that no potentially-significant resources are known to be present at EUL Site 7 (Smolek, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with the presence of known archeological resources would apply to EUL Site 7. However, once the lessee provides information about the development plans, the Navy will pursue consultation with SHPO to seek concurrence that there is no adverse effect to archaeological resources.

5.14 Air Quality

Air quality is regulated under the authority of Title I, Part A, Section 109 of the Clean Air Act (CAA). EPA has established health-based National Ambient Air Quality Standards (NAAQS) for the criteria pollutants carbon monoxide, nitrogen dioxide, ozone, particulate matter, lead, and sulfur dioxide. To monitor and meet the NAAQS, the CAA divides the United States into geographic areas called “air quality control regions” (AQCRs). St. Mary’s County, where NAS Patuxent River is located, is a designated AQCR. An AQCR in which levels of a criteria air pollutant meet the health-based NAAQS is defined as an *attainment* area for the pollutant, while an area that does not meet the NAAQS is designated a *nonattainment* area for the pollutant. An area that was once designated a nonattainment area but was later reclassified as an attainment area is known as a *maintenance* area. An area may have an acceptable level for one criteria air pollutant but may have unacceptable levels for other criteria air pollutants. Thus, an area could be attainment, maintenance, and nonattainment at the same time for different pollutants.

In addition to NAAQS requirements, federal agencies must obtain permits to operate equipment that generates air emissions. Title V of the CAA establishes an operating permit program that requires all air quality requirements for a source to be combined into one comprehensive permit document. All major sources of air pollutants are required to apply for a Title V permit, which is valid for five (5) years. In addition to complying with the Title V operating permit, the CAA requires that federal agencies comply with state and local air quality requirements in the same manner as any non-governmental entity. NAS Patuxent River has received a Title V operating permit that includes 126 sources of air emissions, in addition to various insignificant emission units (Naval Air Station Patuxent River, Maryland, 2010).

Pursuant to COMAR 26.11.02.09, any new source of emissions must be issued a Permit to Construct (PTC) by MDE prior to installation. A PTC allows the installation of the unit and provides operating requirements that apply until the unit is incorporated into the next renewal of the Title V operating permit.

EUL Site 7

The AQCR of St. Mary’s County is an attainment area for all criteria pollutants of the CAA. The most recent Title V operating permit for NAS Patuxent River is effective on July 1, 2010 and

expires June 30, 2015. At EUL Site 7 there are no sources of air emissions identified in the Title V permit and no PTCs have been issued for construction of any emission units (Ichniowski, 2010). Therefore, no environmental conditions, restrictions, or land use controls associated with air emissions would apply to EUL Site 7.

5.15 Flight Operation Noise & Safety

In the early 1970s, the DoD established the Air Installations Compatibility Use Zone (AICUZ) Program to balance the need for aircraft operations and community concerns over aircraft noise and accident potential. The objectives of the AICUZ program, according to the Chief of Naval Operations Instruction (OPNAVINST 11010.36C), are the following: 1) to protect the health, safety, and welfare of civilians and military personnel by encouraging land use which is compatible with aircraft operations; 2) to protect the US Department of Navy and Marine Corps installation investments by safeguarding the installation's operational capabilities; 3) to reduce noise impacts caused by aircraft operations while meeting operational, training, and flight safety requirements, both on and in the vicinity of air installations; and 4) to inform the public about the AICUZ program and seek cooperative efforts to minimize noise and aircraft accident potential impacts by promoting compatible development in the vicinity of military air installations (Department of the Navy, 2008). Accident potential zones (APZ) and Noise Zones are present at and adjacent to air operation areas (e.g., airfields, runways). APZs describe the probably impact area if an accident were to occur. Noise Zones are defined by noise contours that are developed by a computerized simulation of aircraft activity at the installation and reflect site-specific operational data (e.g., flight tracks, type and mix of aircraft, frequency and times of operations) (Department of the Navy, 2008).

EUL Site 7

There are no AICUZ issues (e.g., APZ, Noise Zones) present at EUL Site 7 (NAVFACWASH, 2010; Department of the Navy, 2008). Therefore, no environmental conditions, restrictions, or land use controls associated with AICUZ issues would apply to EUL Site 7.

5.16 Notices of Violation

EUL Site 7

There are no documented Notice of Violations (NOVs) other than those pertaining to administrative concerns at NAS Patuxent (Smith, 2010a; Gray, 2010b). As a result, no environmental conditions, restrictions, or land use controls associated with NOVs would apply to EUL Site 7.

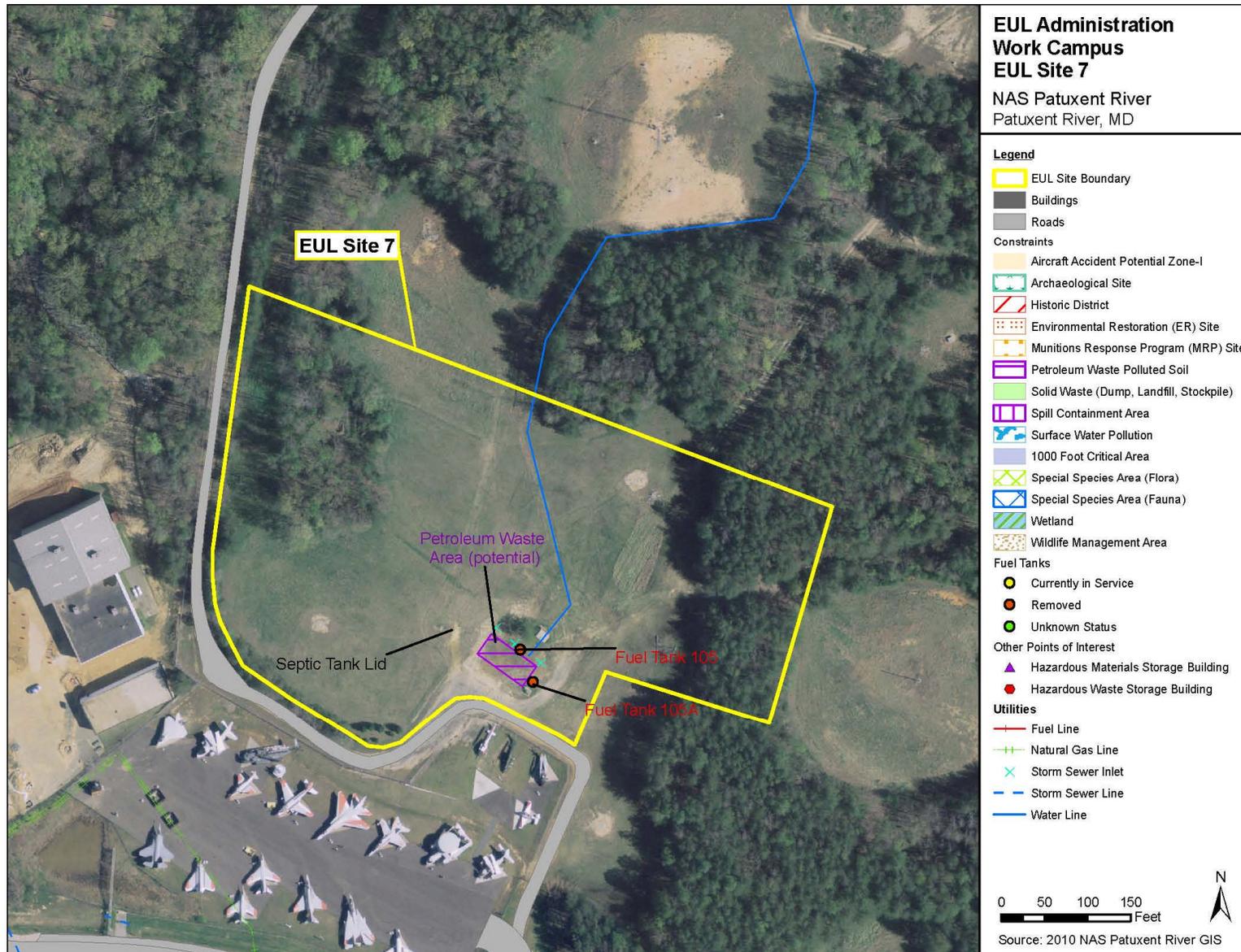


Figure 5-1. Site Conditions – EUL Site 7

6. ENVIRONMENTAL CONDITIONS OF ADJACENT PROPERTY

This ECP study evaluated the adjacent property with respect to all of the environmental considerations that are discussed in Section 5 (Environmental Conditions of Subject Property). This section presents only those adjacent property findings that could potentially affect development or use of EUL Site 7.

All adjoining properties of EUL Site 7 are within the boundaries of NAS Patuxent River. The site is bounded by forested and cleared areas to the north, south, west, and east.

There are no environmental conditions of adjacent property to report.

7. CONCLUSIONS

Findings of this ECP report for EUL Site 7 and its adjacent properties are based on an extensive record search of available documents, a thorough review of the applicable and relevant documents, analysis of the Station's GIS, two visual surveys conducted on May 18, 2010 and June 1, 2010, and on-site interviews with personnel knowledgeable about the history of EUL Site 7. Findings related to the areas of environmental considerations that were evaluated during the ECP study include:

- Environmental Restoration – No documented ER sites are located within EUL Site 7 and no additional investigations are underway or anticipated within EUL Site 7.
- Munitions or Explosives of Concern – There are no documented MRP sites within EUL Site 7, and no explosives operations (e.g., munitions storage or handling) are known to have taken place within EUL Site 7. However, due to incomplete records and historical disposal practices at NAS Patuxent River, there is some potential to find MEC, including buried UXO, during earthwork at the Station. If MEC is discovered, earth disturbance in the vicinity of the discovery must cease and the location and description of the item(s) must be reported immediately to the Navy Project Manager.
- Tanks/Petroleum Contamination – Tanks 105A (AST, 100 gallons, diesel) and 105 (AST 250 gallon, fuel) were removed from EUL Site 7 prior to 2003. GIS indicates an area of petroleum waste polluted soil in the area of demolished Building 105. However, no other records document the petroleum polluted soil. Additionally, historical tank records may be incomplete and there is some potential that undocumented tanks could be encountered during earthwork at the Station. As a result, there is also some potential for subsurface or groundwater contamination as a result of spills or leaks associated with any such undocumented tanks..
- Hazardous Substances/Waste Management – There are no records of any hazardous waste storage or contamination at EUL Site 7.
- Solid/Bio-hazardous Waste – EUL Site 7 has not been associated with the generation, handling, or storage of bio-hazardous or solid waste.
- Polychlorinated Biphenyls – All transformers containing PCBs were retrofitted or replaced in the 1970s-1980s. No PCB program or reports have been developed due to the overall low risk of PCB equipment and exposure.
- Asbestos-Containing Material – There are no buildings or other types of infrastructure at EUL 7 that would have the potential for asbestos-containing materials, and none are known to have previously existed.

- Lead-Based Paint – There are no buildings or other types of infrastructure at EUL Site 7 that would have the potential for lead-based paint, and none are known to have previously existed.
- Pesticides and Herbicides – There are no documented invasive species requiring the use of pesticides or herbicides on EUL Site 7.
- Radon/Radiological Material – A base-wide survey of radon levels was completed in the 1970's and 1980's. The survey found no radon levels of concern.
- Surface Water – There are no surface waters at EUL Site 7.
- Stormwater – Stormwater currently infiltrates into vegetated areas within and adjacent to EUL Site 7. Any new development within EUL Site 7 must be designed and executed in accordance with applicable requirements of the following standards and regulations to ensure that stormwater impacts are minimized: Section 438 of EISA of 2007; Navy's LID policy; and Maryland's Stormwater Management Act of 2007.
- Groundwater – There are no known groundwater wells present within EUL Site 7; therefore, there is no site specific information on the groundwater. GIS indicates an area of petroleum waste polluted soil in the area of demolished Building 105 (Radio Transmitter Building). It is unknown whether contaminated subsurface soil or groundwater may be present as a result of the petroleum waste area.
- Forests – There are contiguous upland pine forest areas located within EUL Site 7. Any tree clearing is recommended to take place in the winter to avoid disrupting migratory birds.
- Wetlands – There are no wetlands present within EUL Site 7.
- Floodplains – There are no floodplains within EUL Site 7.
- Coastal Zone – Development within EUL Site 7 will not impact the Maryland Coastal Zone or Critical Area.
- Essential Fish Habitat – There is no essential fish habitat within EUL Site 7.
- Threatened or Endangered Species – There are no federally- or state-listed threatened or endangered species at EUL Site 7.
- Historic Architectural Resources – No historic buildings or landscapes have been identified within EUL Site 7. However, once the lessee provides information about the development plans, the Navy will pursue consultation with SHPO to seek concurrence that there is no adverse effect to historic architectural resources.
- Archeological Resources – A Phase I survey has been performed, indicating that no potentially-significant archeological resources are known to be present at EUL

Site 7. However, once the lessee provides information about the development plans, the Navy will pursue consultation with SHPO to seek concurrence that there is no adverse effect to archaeological resources.

- Air Quality – There are no sources of air emissions identified in the NAS Patuxent River Title V permit and no PTCs have been issued for construction of any emission units at EUL Site 7.
- Noise & Safety – There are no AICUZ noise zones or safety issues that would restrict land development at EUL Site 7.
- Notices of Violation – There are no documented NOVs other than those pertaining to administrative concerns at NAS Patuxent River.

In accordance with DoD policy regarding the classification of properties that may exhibit hazardous substance or petroleum contamination (please reference Deputy Under Secretary of Defense Goodman Memorandum dated 21 October 1996), EUL Site 7 has been classified as Category 7. This category applies to properties that have not been evaluated or require additional evaluation. While no releases, disposals, or mitigation of hazardous substances have been documented within EUL Site 7, there is reason to suspect contamination. Possible contamination concerns at EUL Site 7 include the petroleum waste polluted soil area. Further evaluation of these contamination concerns should be performed prior to execution of any property transfer involving EUL Site 7.

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9. CERTIFICATION

Based on records reviews, site inspections, and interviews, the environmental professional(s) certify that the environmental conditions of the property are as stated in this document and this property is suitable for outgrant.

Environmental Professional:

Signature _____ Title _____

Print Name _____ Date _____

The real estate professional(s) acknowledge these restrictions and/or LUCs identified above and will ensure they are made a part of the outgrant document.

Real Estate Professional:

Signature _____ Title _____

Print Name _____ Date _____

Property Owner (Activity or Region) acknowledges and accepts the foregoing statement of environmental conditions and the land use controls (if any) that will be required for this real estate outgrant:

Signature _____ Title _____

Print Name _____ Date _____

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Appendix A
LIST OF CONTACTS

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List of Contacts

Contact Name	Title/Position	Email Address	Telephone Number
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