

Final

**Record of Decision
for
Sites 4 and 5, Operable Unit 6 (Groundwater)**

**Naval Air Station Patuxent River
St. Mary's County, Maryland**



**Naval Facilities Engineering Command
Washington**

September 2008

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Acronyms and Abbreviations

CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
COPCs	constituents of potential concern
FFA	Federal Facility Agreement
ft/sec	feet per second
HHRA	human health risk assessment
IR Program	Installation Restoration Program
MCL	maximum contaminant level
MDE	Maryland Department of the Environment
msl	mean sea level
NAS	Naval Air Station
Navy	United States Department of the Navy
NPL	National Priorities List
OU	Operable Unit
PCBs	polychlorinated biphenyls
PRAP	Proposed Remedial Action Plan
RI	remedial investigation
ROD	Record of Decision
SVOCs	semivolatile organic compounds
USEPA	United States Environmental Protection Agency
VOCs	volatile organic compounds

Declaration

1.1 Site Name and Location

This Record of Decision (ROD) was prepared for site-wide groundwater associated with Installation Restoration Program (IR Program) Site 4, Hermanville Disposal Site, and Site 5, Disposal Site near Pine Hill Run, designated as Operable Unit (OU)-6, at Naval Air Station (NAS) Patuxent River in St. Mary's County, Maryland. NAS Patuxent River was placed on the National Priorities List (NPL) on June 30, 1994 (USEPA ID: MD7170024536).

1.2 Statement of Basis and Purpose

This ROD presents the selected remedy (No Remedial Action) for Sites 4 and 5 OU-6 at NAS Patuxent River, which was chosen in accordance with the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986, and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan. In accordance with Section 113(k) of CERCLA, this decision is based on information contained in the Administrative Record for Sites 4 and 5 OU-6.

The United States Department of the Navy (Navy) and the United States Environmental Protection Agency (USEPA) Region III jointly issue this ROD, with the concurrence of the Maryland Department of the Environment (MDE) (Appendix A). The Navy provides funding for clean-up of IR Program sites at NAS Patuxent River. The Federal Facility Agreement (FFA) for NAS Patuxent River documents how the Navy intends to meet and implement CERCLA in partnership with the USEPA and in consultation with the MDE.

Sites 4 and 5 are two of the sites identified in the FFA. A list and description of all IR Program sites is presented in the 2007 update of the NAS Patuxent River Site Management Plan (CH2M HILL, 2007). During the past 12 years, a total of 12 RODs have been completed for IR Program sites at NAS Patuxent River, and additional investigations and remedial actions are ongoing. This ROD documents the final decision for Sites 4 and 5 OU-6, and does not include or affect any other sites or operable units at the NAS.

Public comments on the selected remedy for Sites 4 and 5 OU-6 are discussed in Section 3, "Responsiveness Summary."

1.3 Description of the Selected Remedy

The Navy has determined that no remedial action is necessary to protect public health, public welfare, or the environment because Sites 4 and 5 OU-6 does not pose any unacceptable risks to human health or the environment under current and potential future land use and associated exposure scenarios. Consequently, no remedial action is required

for Sites 4 and 5 OU-6 to allow unrestricted current and future use of the groundwater at these sites.

1.4 Statutory Determinations

The selected remedy will not result in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure. Therefore, a 5-year review is not required for the selected remedy.

1.5 Data Certification Checklist

The following are among the factors considered in selecting the remedy for Sites 4 and 5 OU-6:

- Constituents of potential concern (COPCs) (Section 2.5.4)
- Risk represented by the COPCs (Section 2.7)
- Current and reasonably anticipated future land use assumptions and potential future beneficial uses of groundwater used for the risk assessment and ROD (Sections 2.6 and 2.7)
- Potential land and groundwater use that will be available at the site as a result of the selected remedy (Section 2.9)
- Key factors that led to selecting the remedy (Section 2.7)

If contamination posing an unacceptable risk to human health or the environment is discovered after execution of this ROD, the Navy will undertake all necessary actions to ensure continued protection of human health and the environment.

1.6 Authorizing Signatures

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

Concur and recommend for immediate implementation:

Andrew T. Macyko

Captain Andrew Macyko, United States Navy
 Commanding Officer
 Naval Air Station Patuxent River

29 September 2008

Date

K. Hollenhorst for

James J. Burke, Director
 Hazardous Site Cleanup Division
 United States Environmental Protection Agency, Region III

10/3/08

Date

Decision Summary

2.1 Site Name, Location, and Description

NAS Patuxent River (USEPA ID: MD7170024536) is located at the confluence of the Patuxent River and the Chesapeake Bay in St. Mary's County, Maryland (Figure 1). The Navy serves as the lead agency for environmental restoration at the NAS, the USEPA is the lead regulatory agency, and the MDE is the support regulatory agency.

Site 4, the Hermanville Disposal Area, consists of approximately 85 acres near the southern boundary of the NAS, north of Gate 3 and southeast of Holton Pond (Figure 1). Site 4 was used as a waste disposal area (miscellaneous station wastes; construction debris; sewage sludge; petroleum, oil, and lubricant products; paints, thinners, and solvents; and lesser amounts of pesticides and photographic laboratory wastes) for NAS Patuxent River between 1943 and 1960 (Fred C. Hart and Associates, 1984). Site 5, the Disposal Site near Pine Hill Run, consists of approximately 10 acres along Pine Hill Run, northeast of Site 4 (Figure 1). Based on historical aerial photographs and site observations, Site 5 was used as a disposal area for rubble, demolition wastes, bulk metal parts, and empty drums from 1957 through 1965 (USEPA, 1994). Surface elevations at Site 4 range from 28 to 38 feet above mean sea level (msl). The land surface slopes gently to the north across most of the site, but slopes steeply to Pine Hill Run and Holton Pond in the north and northwest areas of Site 4. Site 5 slopes gradually to the northeast and east toward Pine Hill Run.

2.2 Site History and Enforcement Activities

To facilitate reporting and review of the investigation activities, nature and extent of constituents in environmental media, and the risk assessment for Sites 4 and 5, these sites were divided into six OUs (Figure 1). These OUs correspond to separate physical areas at Sites 4 and 5 where activities were conducted during previous use that may have contributed different constituents to the sites from various possible source areas. The OUs for Sites 4 and 5 are:

- OU-1 (Area 4A) - west of Shaw Road where debris was disposed on the ground surface and in piles along the southeastern edge of Holton Pond
- OU-2 (Area 4B) - the southern portion of Site 4 east of Shaw Road where a former fire-fighting burn area was located
- OU-3 (Area 4C) - the central portion of Site 4 east of Shaw Road encompassing the former waste disposal trenches
- OU-4 (Area 4D) - the northern portion of Site 4 east of Shaw Road where debris was disposed on the ground surface
- OU-5 - Site 5 in its entirety

- OU-6 – site-wide groundwater beneath OU-1 through OU-5

Between 1984 and 2007, several investigations were performed to evaluate the nature and extent of potential contamination at Sites 4 and 5. These investigations are described in the remedial investigation (RI) report (CH2M HILL, 2008a) and are summarized in Table 1. Results of investigations associated with other media (that is, soil, sediment, and surface water) will be presented in future ROD documents associated with OU-1 through OU-5 at Sites 4 and 5.

2.3 Community Participation

Community participation at NAS Patuxent River is facilitated by a Restoration Advisory Board, public meetings, public information repositories, and public notices. The Community Relations Plan for NAS Patuxent River (CH2M HILL, 2008b) provides detailed information on community participation for the IR Program.

The public information repositories for NAS Patuxent River documents, including those in the Administrative Record file used in the remedy selection process for Sites 4 and 5 OU-6, are maintained at the following locations:

St. Mary's County Public Library

Lexington Park Branch
21677 FDR Boulevard
Lexington Park, MD 20653

Naval Air Station Patuxent River Library

22269 Cedar Point Road
Building 407
Patuxent River, MD 20629

In accordance with Sections 113 and 117 of CERCLA, the Navy and NAS Patuxent River provided a public comment period from August 11 through September 9, 2008, for the Sites 4 and 5 OU-6 Proposed Remedial Action Plan (PRAP) (CH2M HILL, 2008c). A public meeting to present the PRAP to a broader community audience than those already involved at the site was held on August 13, 2008, at NAS Patuxent River in the Frank Knox Employee Development Building, Building 2189, Room 100. Public notice of the meeting and availability of documents was published in *The Enterprise* for St. Mary's County on August 6, 2008; *The Recorder* for Calvert County on August 6, 2008; and *The Tester*, which is the NAS Patuxent River newspaper, on August 7, 2008. A copy of the public notice and the transcript of the public meeting are provided in Appendix B.

2.4 Scope and Role of Response Action for Sites 4 and 5

NAS Patuxent River was listed on the NPL on June 30, 1994. As a result, 46 sites were identified at the NAS for inclusion in the IR Program.

Sites 4 and 5 are two of the sites identified in the FFA for NAS Patuxent River. A list and description of all IR Program sites is presented in the 2007 update to the NAS Patuxent River Site Management Plan (CH2M HILL, 2007). During the past 12 years, a total of 12 RODs have been signed for sites at NAS Patuxent River in accordance with the priorities established in the Site Management Plan.

As of the date of this ROD, remedy decisions and associated remedies have been implemented for 12 IR Program sites at NAS Patuxent River. The designation, media, and remedial action for each site are listed below.

- Sites 1/ 12 Groundwater and Soil (OU-1): soil cover, shoreline stabilization, land use restrictions, long-term monitoring and maintenance, vegetation cover, wetland mitigation, and erosion control structures (February 2000 ROD)
- Sites 1/12 Surface Water and Sediment (OU-2): removal of lead contaminated soil and sediment (September 2005 ROD)
- Sites 6/6a Soil (OU-1): asphalt and concrete cap and land use restrictions (September 1999 ROD)
- Site 11 Soil (OU-1): RCRA Subtitle D landfill cap, landfill gas collection and flare system, groundwater and landfill gas monitoring, and land use restrictions (July 1996 ROD)
- Site 17 Soil (OU-1): excavation and off-site treatment and disposal of soil and land use restrictions (December 1998 ROD and June 2001 ROD Amendment)
- Site 17 Groundwater, Surface Water, and Sediment (OU-2): sediment removal action for Holton Pond (September 2006 ROD)
- Site 24 Soil, Groundwater, Sediment, and Surface Water: No Further Remedial Action (October 2007 ROD)
- Site 27 Groundwater and Soil: No Remedial Action (September 2003 ROD)
- Site 29 Groundwater and Soil: No Remedial Action (October 2007 ROD)
- Site 39 Groundwater: in-situ bioremediation, monitoring, and institutional controls (October 2007 ROD)
- Site 41 Groundwater and Soil: No Further Remedial Action (September 2005 ROD)
- Site 46 Groundwater and Soil: No Remedial Action (September 2004 ROD)

This ROD addresses Sites 4 and 5 OU-6 (groundwater) only. Separate ROD documents will be prepared in the future for the other media (that is, soil, sediment, and surface water) associated with OU-1 through OU-5 at Sites 4 and 5.

Based on the results of the Sites 4 and 5 OU-6 investigation, the Navy, the USEPA, and the MDE concur that groundwater at Sites 4 and 5 OU-6 does not pose any unacceptable risks to human health or the environment under current and potential future land use and associated exposure scenarios, including residential use. None of the COPCs identified for groundwater were detected at concentrations exceeding the federal Maximum Contaminant Levels (MCLs). Shallow groundwater in the surficial aquifer at Sites 4 and 5 is not currently used for residential purposes (also referred to as potable water uses), and is not expected to be used for such purposes in the future. Furthermore, use of the surficial aquifer for potable water purposes is not permitted by the St. Mary's County Health Department (1998).

2.5 Site Characteristics

2.5.1 Site Overview

NAS Patuxent River contains buildings and runway areas supporting the NAS military mission. Office space and housing are also provided for Navy and civilian personnel. Several areas are used for recreational activities. Streams, ponds, forests, wetlands, and beaches provide fishing, swimming, camping, and hunting opportunities. Although construction and other activities have disturbed approximately 3,000 acres since establishment of the NAS in 1943, many such areas have since been left fallow and are now covered with trees, shrubs, or tall grasses.

Site 4, the Hermanville Disposal Area, is located near the southern boundary of the NAS, north of Gate 3 and southeast of Holton Pond (Figure 1). Site 5, the Disposal Site near Pine Hill Run, is located along Pine Hill Run, northeast of Site 4 (Figure 1).

2.5.2 Physical Characteristics

Surface elevations at Site 4 range from 28 to 38 feet above mean sea level (msl). The land surface slopes gently to the north across most of the site, but slopes steeply to Pine Hill Run and Holton Pond in the north and northwest areas of Site 4. Site 5 slopes gradually to the northeast and east toward Pine Hill Run.

Information on site-specific geology is based on boring logs for monitoring wells installed from 1985 through 2006. The shallow sediments underlying Sites 4 and 5 are primarily sand, silty sand, and clay. These sediments occur in alternating fine and coarse units that correlate across the site area. Five distinct units were encountered during drilling at Site 4. The upper four units correlate with Lowland deposits, and the deepest unit correlates with the St. Mary's Formation.

The surficial water table aquifer at Sites 4 and 5 consists of the upper sand, upper clay, and lower sand. The upper clay acts as a low-permeability layer on which an unconfined perched zone is present within the surficial aquifer. Hydraulic potential in the lower sand indicates that the lower portion of the surficial aquifer is semi-confined where the upper clay is present. Data collected for monitoring wells in the northwestern corner of Site 5 show that the upper clay is not present in this area. The surficial aquifer is underlain by low-permeability confining units, specifically the lower clay of the Lowland deposits, which in turn is underlain by the St. Mary's Formation.

Groundwater elevations typically range from approximately 2 to 35 feet above msl. Groundwater flow in the perched zone is primarily toward the north and north-northwest, discharging into Pine Hill Run and Holton Pond. Groundwater elevations in the semi-confined lower sand range from 7 to 11 feet above msl. Groundwater data for the lower sand indicate groundwater flows generally northeast and discharges into Pine Hill Run. Vertical hydraulic gradients between the perched zone and the lower portion of the surficial aquifer (that is, the lower sand) are generally downward. Based on in situ hydraulic conductivity tests performed in 1991 (CH2M HILL, 1994), hydraulic conductivity is typical of sands and silty sands. Laboratory results showed that the vertical conductivity of the deep clay lens within the lower sand unit are typical of marine clays and are approximately five orders of magnitude lower than the average conductivity in the overlying sand units.

The average vertical velocity of groundwater flow from the upper sand to the lower sand was estimated to be 0.2 feet per year.

2.5.3 Ecology

In general, Sites 4 and 5 consist primarily of terrestrial habitats that include open grass fields, shrub/scrub and fragmented forest. Site 4 also contains some wetlands, and a wetlands area was constructed at Site 5 for mitigation of wetlands filled during implementation of the remedy for another IR site. Additional aquatic habitats are adjacent to Sites 4 and 5. Holton Pond, a freshwater habitat, is located along the northwest border of Site 4 (Figure 1), and discharges to a stream channel that leads to Pine Hill Run. Pine Hill Run, a brackish tidal creek, is adjacent to the eastern border of OU-5 (Site 5). Pine Hill Run discharges to the Chesapeake Bay several thousand feet to the southeast of Site 5.

A variety of semi-aquatic upper trophic level receptors (such as marsh wren, barn swallow, great blue heron, muskrat, wood duck, and mink) and terrestrial upper trophic level receptors (including gray fox, meadow vole, short-tailed shrew, American robin, and screech owl) are present at Sites 4 and 5. In addition, the Sites 4 and 5 wetland areas provide habitat for a wide variety of biota such as benthic macroinvertebrates (for example, insects, worms, and snails), amphibians, reptiles, mammals, and birds. Based on NAS documentation, no rare, threatened, or endangered species are known to occur on site.

2.5.4 Description of Contamination

The nature and extent of chemicals and metals detected in the groundwater at Sites 4 and 5 were characterized by samples collected during the RI over several years and completed in May 2007. A conceptual site model is presented in Figure 2. Monitoring well locations are presented in Figure 3.

Twenty three monitoring wells have been installed throughout Sites 4 and 5. Volatile organic compounds (VOCs) were detected in 9 of 23 monitoring wells at Sites 4 and 5, with most of the detections in the northern half of Site 4. Most VOCs were detected at estimated concentrations less than the analytical quantization limit, and the occurrence of VOCs was localized.

Semi-volatile organic compounds (SVOCs) and polychlorinated biphenyls (PCBs) were not detected in any groundwater samples. A few pesticides were sporadically detected in groundwater samples at concentrations near detection limits. The low-level concentrations of pesticides detected in groundwater at the site are likely due to historic use to control pests throughout the base and are not indicative of a source of pesticides impacting or degrading groundwater beneath the site.

Metals were detected in all groundwater samples. Although the greatest concentrations of metals were generally detected at locations within or downgradient of the known disposal areas, the detected concentrations of metals do not exceed MCLs and are representative of concentrations observed in groundwater throughout the base.

The VOCs, pesticides, and metals detected in groundwater samples were evaluated by the baseline human health risk assessment (HHRA) (Section 2.7).

2.6 Current and Potential Future Site and Resource Uses

There are no complete exposure pathways for groundwater under current land use conditions. Because future use of portions of Sites 4 and 5 is anticipated to support the Base mission, the Navy evaluated risks associated with groundwater assuming unrestricted use in the future. For future use, it was conservatively assumed that groundwater from the surficial aquifer might be used as a potable water supply, although this is highly unlikely due to characteristics of the surficial aquifer. Use of the surficial aquifer is not permitted by the St. Mary's County Health Department (1998). For future land use conditions, it was also conservatively assumed that future residential and industrial buildings could be constructed on the site. The Navy's objective is to achieve unrestricted future land use for soil and groundwater associated with Sites 4 and 5.

2.7 Summary of Risks and Recommendations

A baseline HHRA was conducted as part of the RI in accordance with current USEPA guidance to assess the potential risks to human health from exposure to the chemicals and metals detected in groundwater at Sites 4 and 5 under current and future land use scenarios. The findings of the HHRA were used to determine whether any actions are needed at Sites 4 and 5 to protect human health. Exposure to groundwater by ecological receptors is not considered a complete pathway; therefore, ecological risks were not evaluated. Potential risks to human and ecological receptors exposed to other media (soil, sediment, and surface water) will be addressed in future ROD documents associated with OU-1 through OU-5 at Sites 4 and 5.

Three VOCs (chloroform, trichloroethylene, and vinyl chloride), one pesticide (beta-BHC), and five metals (arsenic, chromium, iron, manganese, and vanadium) were identified as COPCs in groundwater. There are no complete exposure pathways to groundwater for current land use conditions. For potential future land use, the HHRA evaluated potential exposure to groundwater by construction workers, industrial workers, and hypothetical future residents (adult and child). To evaluate potential exposure to groundwater at Sites 4 and 5 by hypothetical future residents (adult and child), it was assumed in the HHRA that groundwater would be used as a source of potable water supply (such as drinking and washing).

The current and future land use scenarios, including residential use, for Sites 4 and 5 groundwater do not pose unacceptable risks to human health. Therefore, no remedial action is necessary to address potential risks associated with exposure to groundwater at Sites 4 and 5. A summary of the HHRA findings, including the calculated carcinogenic risks and noncarcinogenic hazards for each receptor, is presented in Table 2.

2.8 Selected Remedy

The selected remedy for Sites 4 and 5 OU-6 is "No Remedial Action". After evaluating the information presented in the RI report (CH2M HILL, 2008a), including the results of the human health risk assessment, "No Remedial Action" is selected for Sites 4 and 5 OU-6 because there are no factors indicating a risk to human health or ecological receptors that would warrant remedial action under current and future land use scenarios, including

residential use. Based on this “No Remedial Action” determination, the Navy recommends that Sites 4 and 5 OU-6 be permanently removed from the IR Program.

2.9 Statutory Determinations

The selected remedy will not result in hazardous substances, pollutants, or contaminants remaining at Sites 4 and 5 OU-6 above levels that allow for unlimited use and unrestricted exposure. Therefore, a 5-year review will not be required for the selected remedy.

2.10 Documentation of Significant Changes

The Sites 4 and 5 OU-6 PRAP was released for public comment on August 11, 2008, and presented to the public at a public meeting on August 13, 2008. The PRAP identified “No Remedial Action” as the preferred alternative for the site. The Navy reviewed all written and oral comments submitted during the public comment period (see Section 3, Responsiveness Summary) and determined that no significant changes to the original remedy identified in the PRAP were necessary or appropriate.

Responsiveness Summary

The Responsiveness Summary presents stakeholder concerns about the site and selected remedy, and explains how those concerns were addressed and factored into the remedy selection process. This Responsiveness Summary was prepared after the 30-day public comment period (August 11 to September 9, 2008) and public meeting (August 13, 2008), in accordance with USEPA guidance (USEPA, 2002).

3.1 Stakeholder Comments and Lead Agency Responses

The PRAP for Sites 4 and 5 OU-6 was presented at a public meeting held on August 13, 2008, as described in Section 2.3. A transcript of the public meeting is provided in Appendix B.

Community members have not expressed any dissatisfaction with the Navy's selection of "No Remedial Action" for Sites 4 and 5 OU-6, and no significant comments were received during the August 13, 2008 public meeting. Questions and concerns received during the meeting were addressed at the meeting and are documented in the meeting transcript (Appendix B).

During the public meeting, the Navy and the USEPA described the interim removal action conducted at OU-5 (Site 5) in response to a question about the excavation area within the constructed wetland area of OU-5 (Site 5). In response to a question about the risk drivers for OU-6 groundwater, the Navy and the USEPA explained that specific risk drivers were not identified for all exposure scenarios because the potential risks to receptors were very close to, or within, the acceptable risk range and no one chemical or metal was driving the risk. In response to a question about waste disposal in the unlined ditches of OU-4 (Area 4C), the Navy and the USEPA indicated that trash disposed in the unlined ditches consisted mostly of household and construction debris, and most of the waste material was burned in place. Wastes in the disposal trenches were removed and disposed off-site during the interim removal action. Samples collected beneath the bottom elevation of the disposal trenches did not indicate any evidence of residual contamination.

No additional written comments, concerns, or questions were received by the Navy, the USEPA, or the MDE during the public comment period.

3.2 Technical and Legal Issues

No technical or legal issues have been identified for Sites 4 and 5 OU-6 with respect to this ROD.

References

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Tables

TABLE 1
 Summary of Previous Investigations at Sites 4 and 5
 Sites 4 and 5 OU-6 (Groundwater)
 NAS Patuxent River, Maryland

Activity	Key Findings	Recommendations
Initial Assessment Study (Fred C. Hart and Associates, 1984)	Concluded there was potential for contaminant migration from groundwater to surface water in Pine Hill Run and adjacent wetlands at Site 4. The material disposed at Site 5 was determined to be inert.	Conduct a confirmation study
1985-1987 Confirmation Studies (CH2M HILL, 1985; CH2M HILL, 1987)	Four monitoring wells were installed at Site 4, sampled, and analyzed for metals, total organic halides (TOX), and total organic carbons. TOX and several metals, including cadmium, lead, mercury, and silver were detected in the groundwater samples.	Conduct additional sampling
1991 Interim Remedial Investigation (CH2M HILL, 1994)	Volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides, and polychlorinated biphenyls (PCBs) were not detected at concentrations exceeding quantitation limits in groundwater. However, trichloroethylene (TCE) was detected at an estimated concentration of 5 micrograms per liter (ug/L). Trace metals were not detected at concentrations exceeding either the quantitation limits or the concentrations observed in the background monitoring well. The low hydraulic conductivity and thickness of the clay confining layer were reported to be effective barriers to downward groundwater flow and any associated vertical migration of contaminants into deeper aquifers.	
1995 Parcels A and B Investigation (Halliburton, 1995)	Five in-situ groundwater samples were collected from the parcel of land adjacent to St. Mary's County Wastewater Treatment Plant. Groundwater samples were analyzed for Target Compound List (TCL) organics and Target Analyte List (TAL) inorganics. VOCs, SVOCs, pesticides, and PCBs were not detected in groundwater samples at concentrations exceeding laboratory reporting limits. Metals were detected in the groundwater samples.	
1996-1997 Remedial Investigation field activities	Groundwater was encountered at approximately 5 to 7 feet below ground surface during test pit excavations. Groundwater samples identified the presence of a limited number of constituents associated with site activities. Fuel-related compounds were detected in groundwater samples from a limited area west of Shaw Road. Low concentrations of VOCs and several metals were detected in groundwater, but pesticides and PCBs were not detected in any groundwater samples.	
2002 Site 27 Remedial Investigation (CH2M HILL, 2003)	Groundwater samples were collected from 11 monitoring wells and analyzed for TCL VOCs, SVOCs, pesticides, PCBs, TAL total and dissolved metals, and cyanide. Chloroform and TCE were detected in two of the wells at a concentration of 0.2 ug/L.	
2006-2007 Remedial Investigation field activities (CH2M HILL, 2008c)	The subsurface consists of sand and silt to form the shallow groundwater aquifer from approximately 2 to 26 feet below ground surface. The occurrence of VOCs was localized, with most of detections less than the analytical quantitation limit. SVOCs and PCBs were not detected. Pesticides were sporadically detected at concentrations near detection limits. Generally, the greatest concentrations of metals were within or downgradient of the known disposal areas. The HHRA concluded there are no risks exceeding acceptable levels.	No remedial action and removal of site from IR Program

TABLE 2
 Human Health Risk Assessment Summary
 Sites 4 and 5 OU-6 (Groundwater)
 NAS Patuxent River, Maryland

Risk Scenario	Exposure Pathways				Pathway Totals	
	Groundwater		Indoor Air		Risk	HI
	Risk	HI	Risk	HI		
Future Resident (Adult)	(a)	RME = 0.80	(a)	RME = 0.0038	(a)	RME = 0.81
Future Resident (Child)	(a)	RME = 1.9 CTE = 0.54	(a)	RME = 0.011	(a)	RME = 1.9 CTE = 0.54
Future Resident (Child/Adult)	RME = 5.8×10^{-5}	(b)	RME = 3.3×10^{-8}	(b)	RME = 5.8×10^{-5}	(b)
Future Construction Worker	RME = 2.6×10^{-8}	RME = 0.034	NA	NA	RME = 2.6×10^{-8}	RME = 0.034
Future Industrial Worker	NA	NA	RME = 1.2×10^{-7}	RME = 0.00028	RME = 1.2×10^{-7}	RME = 0.00028

Risk - carcinogenic risk. The range of acceptable carcinogenic risk is 1×10^{-6} to 1×10^{-4} .

HI - hazard index. A hazard index of less than 1.0 indicates acceptable noncarcinogenic risk.

NA - Not analyzed

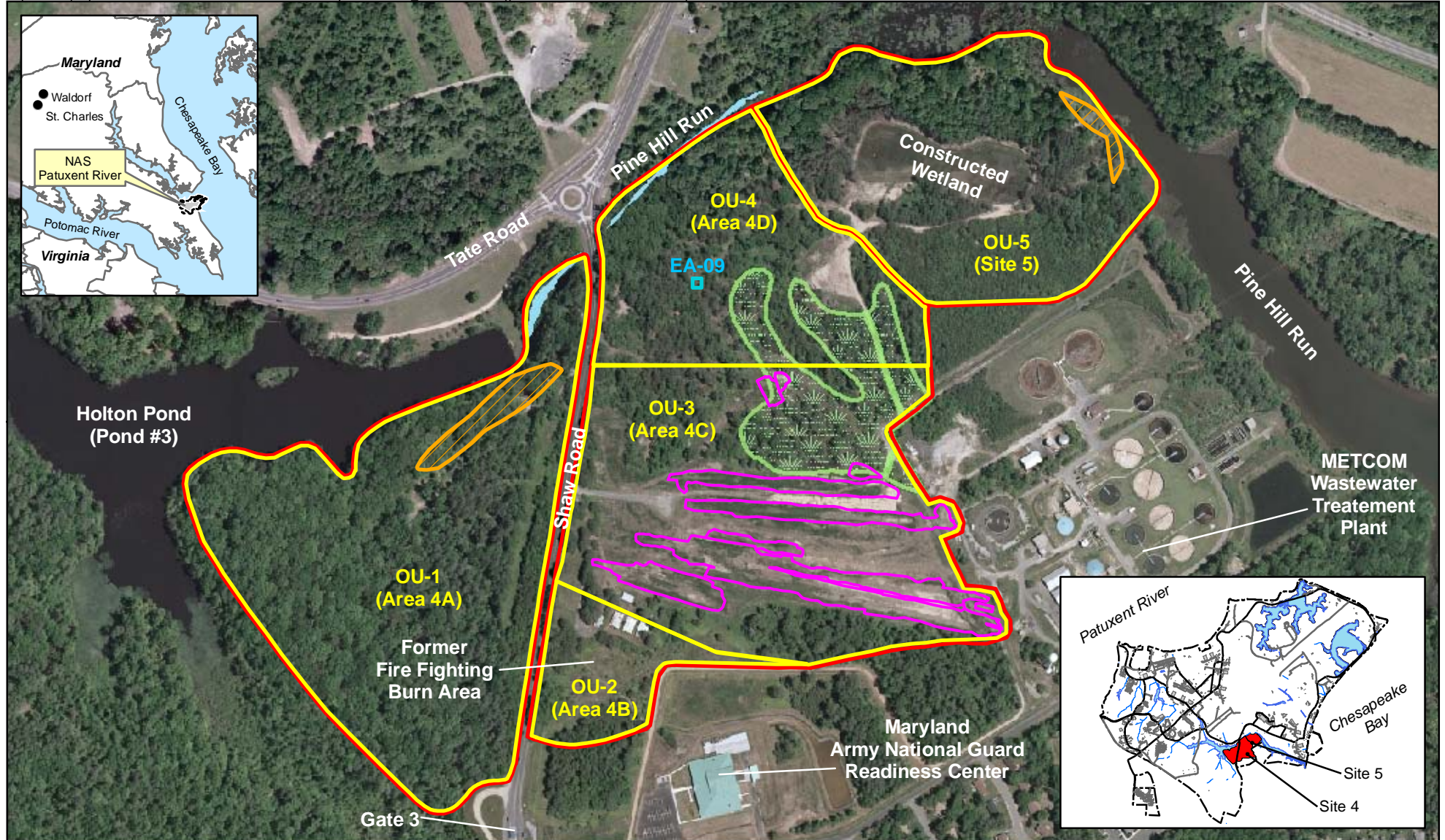
RME - Reasonable Maximum Exposure. This represents the maximum level of exposure to contaminants present at a site that is reasonably expected to occur.

CTE - Central Tendency Exposure. This represents the average, rather than upper limit, exposure that could reasonably be expected to occur at a site. The CTE scenario is probably more representative of the actual risk to a majority of potential receptors.

(a) Carcinogenic risks were not calculated for an adult or child resident, but were calculated for a lifetime child/adult resident, following USEPA guidance.

(b) Hazard Indices were not calculated for a lifetime adult/child resident, but were calculated individually for an adult and child resident, following USEPA guidance.

Figures



Legend

- Former Trench Disposal Areas (excavated during 2003-2004 non-time-critical removal action)
- EA-09 Emergency Removal Area
- IR Site Boundary
- Operable Units (OUs)
- Push-out Disposal Areas
- Wetland Area

Notes:
 1. OU-6 is comprised of groundwater beneath OU-1 through OU-5
 2. 2006 Aerial Photography

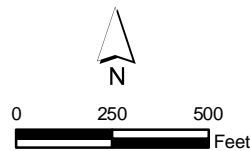
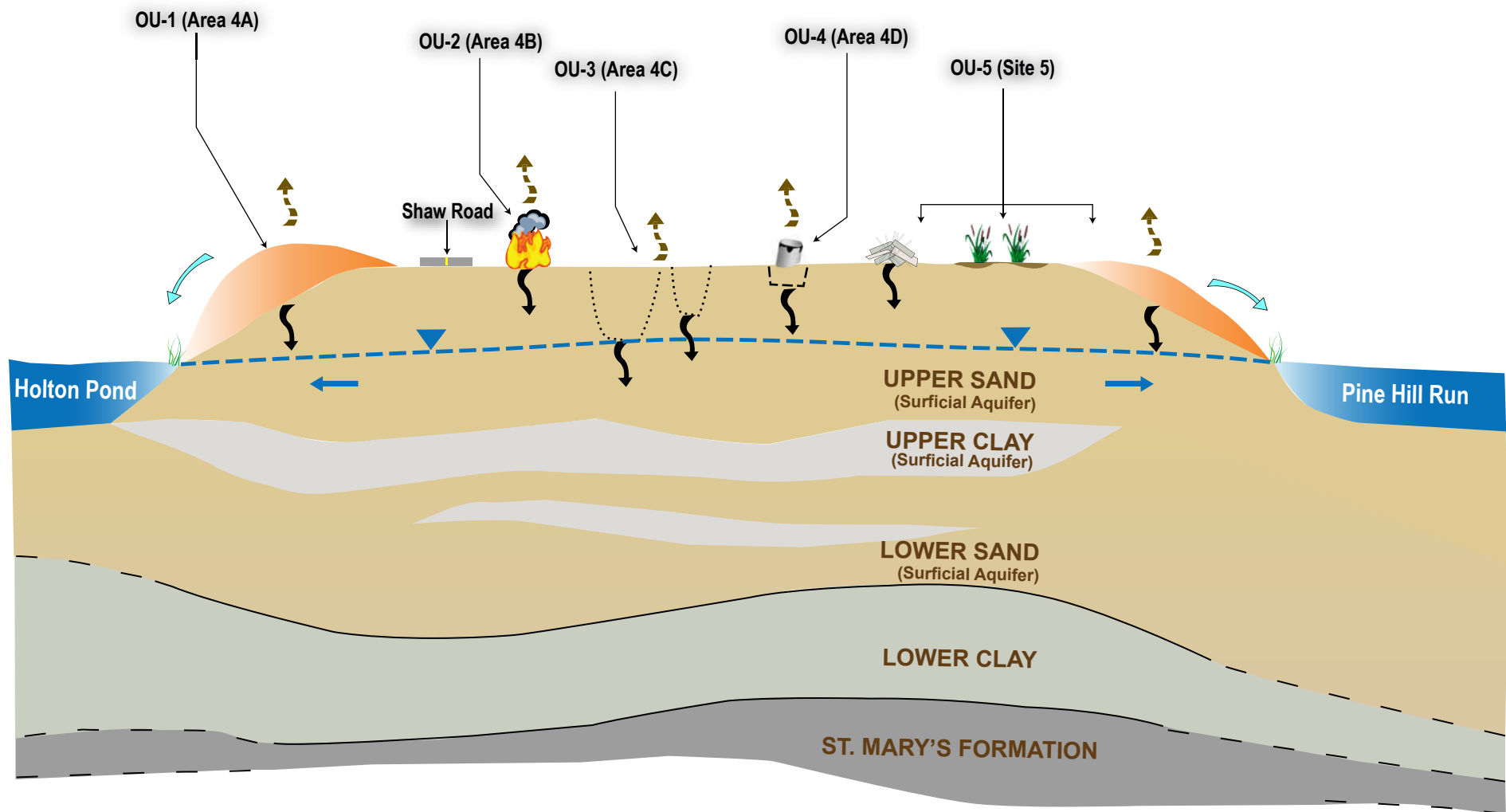


Figure 1
 Location and Vicinity
 Sites 4 and 5 OU-6 (Groundwater)
 NAS Patuxent River
 St. Mary's County, Maryland



LEGEND

Key Site Features

- Push-Out Disposal Area
- Shaw Road
- Former Fire-Fighting Burn Area
- Former Disposal Trenches
- EA-09 Emergency Removal Area
- Construction and Miscellaneous Debris

- Water Table
- Constructed Wetland
- Wetland Plant

Potential Migration Pathways

- Surface Runoff
- Volatilization
- Infiltration/Leaching From Former Disposal Areas
- Direction of Groundwater Flow

Note: This conceptual site model presents potential sources and migration pathways present at the site before the removal of surface debris and waste from former disposal trenches in OU-3 (Area 4C) and surface debris from OU-1, OU-4, and OU-5 during the 2003-2004 non-time-critical removal action.

NOT TO SCALE

Figure 2
 Conceptual Site Model for Groundwater
 Sites 4 and 5 OU-6 Groundwater
 NAS Patuxent River
 St. Mary's County, Maryland



Legend

- Monitoring Wells
- Former Trench Disposal Areas (excavated during 2003-2004 non-time-critical removal action)
- EA-09 Emergency Removal Area
- IR Site Boundary
- Operable Units (OUs)
- Push-out Disposal Areas

Notes:
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 2. 2006 Aerial Photography

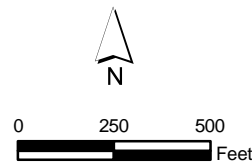


Figure 3
 Monitoring Well Locations
 Sites 4 and 5 OU-6 (Groundwater)
 NAS Patuxent River
 St. Mary's County, Maryland

Appendix A
State Letter of Concurrence



MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Boulevard • Baltimore MD 21230

410-537-3000 • 1-800-633-6101

Martin O'Malley
Governor

Shari T. Wilson
Secretary

Anthony G. Brown
Lieutenant Governor

Robert M. Summers, Ph.D.
Deputy Secretary

September 23, 2008

Mr. Stephen Hurff
NAVFAC Washington
Washington Navy Yard, Building 212
1314 Harwood Street SE
Washington, DC 20374-5018

RE: Record of Decision for Sites 4 and 5 Operable Unit 6 (Groundwater) – Final – September 2008, Naval Air Station Patuxent River, St. Mary's County, Maryland

Dear Mr. Hurff:

The Federal Facilities Division (FFD) of the Maryland Department of the Environment's Hazardous Waste Program has completed its review of the referenced document. This Record of Decision (ROD) documents the Navy's decision for a no action alternative for both Site 4 (Hermanville Disposal Site) and Site 5 (Disposal Site near Pine Hill Run) Operable Unit 6 (groundwater). The "No Remedial Action" determination is based upon a Remedial Investigation, which indicates that there are no unacceptable risks to human health or ecological receptors from exposure to groundwater at either site. The remedy selected by the Navy is in compliance with the Comprehensive Environmental Response, Compensation and Liability Act.

A public meeting was held on August 13, 2008, to present the findings in the Proposed Plan. The FFD reviewed the response to comments within the ROD and found the Navy's responses satisfactory. Based upon the acceptable level of protection to human health and the environment provided by the remedy, the FFD concurs with the Navy's selected remedy, "No Remedial Action", for Sites 4 and 5 Operable Unit 6.

If you have any questions, please contact me at (410) 537-4238.

Sincerely,

Heather Njo
Remedial Project Manager
Federal Facilities Division

HN:hn

cc: Mr. S. Andrew Sochanski
Mr. Horacio Tablada
Mr. Harold L. Dye, Jr.

Appendix B
Public Notice and Public Meeting Transcript

Change

Continued from Page B-1

ent since a lot of people aren't aware of the date. It's been [Aug.] 15th forever," said Huntington head volleyball coach Shari Turner, whose program has been the Class 3A state runner-up the last three years. "We lose a whole day [of practice this year under the new bylaw versus the former schedule], and I don't like that too much. You start and you have to stop, because you're not allowed to practice on Sunday."

She added: "I'm sure the reason was pure [in passing the new bylaw], because the 15th can fall on whatever day of the week. But it just made sense to me to keep the same date [of Aug. 15]. I guess I'm just not a fan to start on a Saturday, then have nothing on Sunday, then restart on Monday. You lose some connectivity with starting practice. It seems like you have two starting dates to pre-season practices."

Other modifications to the Southern Maryland athletic landscape this fall are the brand new varsity life of St. Mary's Ryken football and Waldorf's Potomac Ridge Golf Course getting selected as the site for this year's state golf

"We don't know what to expect since we've never played varsity football before. Our whole community is very excited about this."

Michael Vosburgh,
St. Mary's Ryken athletic director

tournament on Oct. 21-23. University of Maryland's greens in College Park, the usual location for the state gathering, is closed for a year beginning July 1 for course upgrades.

Ryken's first-year program, which began two seasons ago as a freshman unit, hits the practice fields beginning today to prepare for its inaugural gridiron varsity season.

"There is a lot of buildup, our kids are really excited," Ryken athletic director Mike Vosburgh said. "We don't know what to expect since we've never played varsity football before. Our whole community is very excited about this."

Last year, Ryken's junior varsity team went 6-3.

The varsity schedule includes four Washington Catholic Athletic Conference opponents and six outside Ryken's league.

The selection of Potomac Ridge for the state gathering could have positive ramifications locally, because it is the home course of Westlake. And many other SMAC teams — which perennially feature state contender La Plata — are also familiar with the course.

"I think any time a state championship is held at a home course, there are benefits [for the home team]," Zaccarelli said. "Just like the cross country [state meet at Hereford High School] is an advantage for Hereford, its works the same way for golf. But there are only two sports that have a home course for a state championship."

Westlake is not projected as a state contender this year.

Zaccarelli noted that football — especially at the junior varsity and freshman levels — will be impacted from the

change in the preseason start-up date to the fall. The first available regular season play date is 20 days from the first day of practice, falling on Sept. 5 this year.

Usually junior varsity and freshman games are played on Thursdays during the season, but the first Thursday in September will not be 20 days from the Aug. 16 first practice date. So the junior varsity and freshman games will be moved to Saturday in Week 1 and then resume their Thursday-heavy schedule from there.

Football teams are only allowed to play one game per week, unless approved for exceptional circumstances, but Zaccarelli said five days between games is satisfactory. There is another Saturday game for junior varsity and freshman teams scheduled during the season for schools within the SMAC.

"Teachers report on Aug. 18 this year, and usually they don't report until after two or three days of two-a-days [practices]," Zaccarelli said. "The [new preseason startup] could bump everything back — that's kind of the weakness of the whole thing. Other than that, it makes sense."

dcogle@somdnews.com

Hut-1, hut-2 Hike!

Ryken snaps ball on new varsity football program

By DALLAS COGLE
Staff writer

The entrance into a new arena of athletic competition for St. Mary's Ryken is now here.

The Leonardtown Catholic school launches its brand new varsity football program today with preseason practices unfolding, as the Knights build toward their groundbreaking opening game on Aug. 29 at Annapolis Area Christian School.

All 10 of Ryken's varsity games will be played on the road during this inaugural football season. The school does not break ground on a stadium until next spring and has plans for the structure to be completed by the beginning of next season.

Four of Ryken's opponents hail from the Washington Catholic Athletic Conference, while the six others are Christian and private schools at a similar level of competitiveness. Last year at the junior varsity level, Ryken went 6-3 to provide plenty of momentum heading into its first foray in the varsity ranks.

"Our JV team was very good, and the kids realized they can play football," Ryken athletic director Mike Vosburgh said. "We've scheduled four WCAC teams and six outside the conference, so we're hoping to be very competitive."

Vosburgh added that he believed Annapolis Area Christian was only in its second year as a varsity outfit.

Just two years ago when Ryken began its football existence at the freshman level, it captured just one win. So there was great improvement last year given the junior varsity's success.

"There were a lot of I had never played football years ago until this year," Vosburgh said. "I'm hungry to play football."

Ryken also fielded a man team last year, but have one this season with varsity and junior varsity teams.

Vosburgh did state that very good possibility of the freshman level back mix down the road.

About 110 players are ed at today's preseason and Vosburgh expects to equally share the turn about 55 at each level.

"This is going to be a tion year — it's Year 3 of year plan for us to be o tive," Vosburgh said about the varsity program is groomed along. "Anytime start a program, it's g take some time. That's have a five-year pro building, of being p itive in WCAC."

"This is our first year real football at a hi Realistically, we know t happen overnight. It's a p

Bob Harmon, who i the freshman team tw ago and was at the l junior varsity last se Ryken's head coach in t ty world. Ray Terrell, a tant to Harmon, the l years, is the junior vasi man at Ryken.

Ryken's junior vasi will have six home c among its nine-game s hosting visitors at La Park.

dcogle@somdnews.com

THE DEPARTMENT OF THE NAVY INVITES PUBLIC COMMENT ON PROPOSED REMEDIAL ACTION PLANS FOR THREE SITES UNDER THE INSTALLATION RESTORATION PROGRAM NAVAL AIR STATION PATUXENT RIVER, MARYLAND

In accordance with the requirements of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), Naval Air Station (NAS) Patuxent River invites public comment on the Proposed Remedial Action Plans (PRAPs) for the following three Installation Restoration (IR) Program sites:

Site 6/6A Operable Unit (OU) 2

The findings of the Remedial Investigation (RI) and the results of the removal action for Site 6/6A OU-2, which consists of the groundwater and surface water at Site 6/6A (Bohneyard adjacent to the Fuel Farm) and the surface soil and sediment in the drainage area downgradient of Site 6/6A, indicate that there are no unacceptable risks to human health or the environment from site media. Therefore, 'no further remedial action' is proposed for Site 6/6A OU-2.

Site 11 OU-2

The findings of the RI for Site 11 OU-2, which consists of the groundwater, surface water, and sediment associated with the Former and Current Sanitary Landfill, indicate that there are no unacceptable risks to human health or the environment from the site. However, three contaminants were detected in Site 11 OU-2 groundwater samples at concentrations exceeding federal standards. Therefore, the proposed remedy to address the groundwater is land use controls and long-term monitoring of the groundwater.

Sites 4 and 5 OU-6

The findings of the RI for Sites 4 and 5 OU-6, which consists of the site-wide groundwater associated with Site 4, Hermanville Disposal Site, and Site 5, Disposal Site near Pine Hill Run, indicate that there are no unacceptable risks to human health or the environment from groundwater. Therefore, 'no action' is proposed for Sites 4 and 5 OU-6.

Public comment begins on **August 11, 2008, and closes on September 9, 2008. A public meeting is scheduled for 6:00 p.m. on August 13, 2008, at the Frank Knox Employee Development Building, Building 2189, Room 100**, to present the PRAP for each site and answer questions.

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Patuxent River, MD 20670-1154

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Attn: Mr. S. Andrew Sochanski
Hazardous Site Cleanup Division 3HS11
1650 Arch Street
Philadelphia, PA 19103-2029

Maryland Department of the Environment
Attn: Ms. Heather Njo
Federal Facilities Division
Hazardous Waste Program
1800 Washington Boulevard, Suite 645
Baltimore, MD 21230-1719

For further information, contact Mr. John Romer at (301) 757-6748 between the hours of 8:00 a.m. and 4:30 p.m., Monday through Friday, excluding federal holidays.

Outdoors

Continued from Page B-1

helper on board) to cut up the fish you caught (they'll be now in your cooler where the sandwiches and drinks used to be) into boneless and skinless filets.

Those empty-zipped plastic bags you brought along are for these fish filets.

Tip the mate generously for this service ... it's well worth it.

Also, if you're a true novice at fishing, when you do go aboard, it will only take the mate about five seconds to realize this little fact. You likely won't even know the evaluation has happened, and you probably won't have to say a word to get this perception across.

Just smile nicely and maybe say, "I'll take any help you're willing to give me," and you'll probably make a quick friend for the honesty plus get some real assistance throughout the day on your trip.

For example, I'll bet when you catch that first fish, the mate will likely be at your side before you even get your little trophy out of the water, and will help you take it off the hook and throw it into the cooler. It really is going to be that easy.

Before you drop your line overboard, spend that first minute after the captain yells, "Lines in" watching everyone else. You'll quickly see how easy it is. Imitate, exactly, what everyone else is doing.

Then, when you finally get those fresh fish filets back home, get out a couple of bowls like you'd put cereal in. Crack a few eggs into one (no shells), seasoned flour goes in another and some crushed up bread crumbs are put in the third. Dunk the filets individually in the flour (get both sides good and white), then give

them an egg wash and the bread crumbs all over next.

Into the pan they the (spray in some Pam first them nicely, flip just on don't overdo the cooking you'll quickly have a me for a king of the creek li self.

You'll also, very likely to go out and do this all again real soon.

And, the big bonus, 1 time out you'll be a seas headboat pro.

I'm serious. That's all to it, and a headboat ex ence is absolutely and ly the very best way to s fishing and find out how you're going to like it.

I'm guessing, you're j relish this experience a

Another headboat I recommend is the "Bay over in Ocean City. If yo there for a family holi da time soon, this is a grea spend a few hours.

This particular vesse two trips every day (mo and afternoon) and the only \$28 for adults for a day out on the water. It's moored at the O.C. Fish Center, and that place is ed right along the ocean southern end of Maryla vacation capital.

Trust me. Taking a h the first time fishing is g and sound advice. Next Wednesday, I'll pass along some other pointers an you want to take this up notch as Emeril would the next level.

Good luck.

If you do try it, don't e-mail me afterward me know how it went. I would love to read your about it. If I get any real ones, I might even pass along to everyone. Of c I'll be sure to get your p sion to do that first.

zbasser@aol.com

Soper

Continued from Page B-1

Taylor, a rising senior. "I'm definitely excited."

"He's really good," said teammate Kelly Kady, also a rising senior. "I'm excited to play for him."

Former Calvert varsity girls coach Doug Jones, who had Soper as an assistant for a year, agreed.

"They're getting a fabulous coach," he said. "This is one very skilled person. He's very knowledgeable coach. Not only is he a very fine player but he has a lot of soccer smarts. He knows the game and he can teach the game. He's going to have a very formidable program."

Soper graduated from Thomas Stone High School in 1982 where he was a three-year starter on the varsity team. During his tenure, the Cougars won the SMAC championship twice and were crowned Class 3A South regional champions three times. After a year at Charles County Community College, now called College of Southern Maryland today, Soper transferred to Salisbury University where he played back/sweep for three years.

He graduated in 1987 with a

Looking for a few good leaders

New Huntingtown girls soccer coach Rob Soper said the key to the 2008 season will be getting much-needed leadership from his senior-laden team

"There was a lot of talk last year, but I never really felt we walked the walk. When you go back and look at the four games we lost last year, once we got down by a goal we never came back and won a game. And to me, that's a sign of leadership and gutting it out and someone putting the team on their back and carrying them. We have a lot of strong players; they just don't necessarily fit the leadership role and that's OK because you need good followers as well. But we need some good leaders on the field. We need to do it with our actions versus just talking about how we're going to do it. That's the big theme I'm going to carry this year."

MICHAEL REID

degree in liberal studies and entered the Army. He stayed there for his four-year stint and saw action during Operation Desert Storm.

He currently works at the Census Bureau and has two children; Mitchell and Lauren, a rising sophomore at Huntingtown.

He was an assistant coach with the Thomas Stone boys soccer team for a year and was Jones' assistant at Calvert for another season. He's been an assistant at Huntingtown the previous two years.

"It was huge, because I had the opportunity to be very much involved but at the same time, I could sit back and do

some assessing," Soper said of his two-year stint with the Hurricanes. "I could determine where I think we can improve, where our weaknesses are and what areas we need to improve in and what things we can do different on the pitch tactically this year. I feel like I established a real good rapport."

Soper said he learned plenty from Hobson.

"Obviously Gina has a great track record and one of the great things about working with her is that I learned a lot," he said. "I feel comfortable going in and doing X's and O's and running [practice] sessions but [now I also] know how to deal with 18 or 20 high school

"They're getting a fabulous coach."

"This is one very skilled person. He's very knowledgeable coach. Not only is he a very fine player but he has a lot of soccer smarts. He knows the game and he can teach the game. He's going to have a very formidable program."

Doug Jones, former Calvert girls soccer coach, on new Huntingtown girls soccer coach Rob Soper

teenagers. She taught me tolerance and patience. Just that one season I learned a lot from her."

Kady and Taylor agree that adjusting to a new coach for their senior campaigns would have been more difficult had Soper not been with the team.

"I think it would have been more frustrating if it was somebody that didn't know the program as well," Kady said. "But the fact he was on the staff before makes it an easier transition."

"It is tough, but since he was there last year, we all got to know him pretty well," Taylor said. "We know what he expects of us so it won't be too much of a difference."

you need to be efficient what you have."

"Oh my gosh, ye said when asked if Sopers will work hard. "to have one very tight They will work, that's statement. They def work."

But Kady and Taylor with that.

"Yeah, I know [th work hard], but I think we need to w Taylor said. "If we wa states and hopefully what we're going to I so I'm ready."

"Our fitness level v ter and our team bo be a lot better than year," Kady said. "Th thing, we lacked a need. It's all about the

Soper said his ex on the eve of the sea slate full of marquee f as high as his practice

"My approach is to game," he said. "It so gant and I don't m sound arrogant, bu game-by-game situ play every game to game. My goal is to games in November, v it all, because if you games in November won states."

mreid@somdnews.com

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Baltimore, MD 21230-1719

For further information, contact Mr. John Romer at (301) 757-6748 between the hours of 8:00 a.m. and 4:30 p.m., Monday through Friday, excluding federal holidays.



Submit

Riptide too strong for diamond 1

The Northern Calvert Riptide, a girls' 12-U fastpitch softball team, concluded the 2008 Calvert County Little League softball season with a win at the five-team Northern Calvert Shootout league championship tournament.

The Riptide, which finished 11-5 on the season, was also co-champions of the "Super Six" Calvert County Championship tournament, which was sponsored by 5 Star Athletics.

Northern Calvert, which was sponsored by J&R Business C, also placed second in the season-ending Maryland District 1 peak Conference's "Battle by the Bay" championship game at Dunkirk District Park.

In the front row, from left, are Kaitlyn Hynes, Katie Kampson Peters, Erika Jaensch, Karly Klem and Diamond Rodger; back row are Madison Marinaccio, left, Gillian Krautman, Juli Kayley Powell, Megan Howell and Coach Steve Marinaccio. Seated are assistant coaches Chris Kampson and Mike Klem.

Tim O'Brien Senior Men's Golf League

The following are the second half standings for the Tim O'Brien Senior Men's Golf League, which plays Tuesday through Thursdays at the Chesapeake Hills Golf Club in Lusby.

Standings are as of Aug. 1

Tuesday

Flight 1: Rick Varley 44, Charles Knapper 40, Jack Van Wie 35, Tony Luvara 34, John Benish 33, Len Addiss 32, Rob Benson 27, Cary Gradle 25

Flight 2: Barney Hathaway 46, Kermit Dyke 42, Roland Smith 40, Bill Foley 37, Dave Underwood 36, Brian Stevens 36, William King 27, John Manessa 23, Larry Glaubitz 19, Charles Craft 18

Flight 3: Don Kirby 41, Allen Brown 40, Harold Aurand 36, Jesse Blake 35, Tom Schwartz 35, Dick Patterson 29, George Wilson 29, Steve Sadler 25

Flight 4: Willie Ouellette 26, Tim Hale 14, Jim D'Amico 13

Flight 5: Nick Vagianos 42, Ted Kolowski 41, Bob Rimmel 33, Emmett Early 26, Don Plastow 24, Jim Moore 9

Wednesday

Flight 1: Larry Smialek 41, nagle 40; Bob Litz 37, Gary 36, Jim Hutchison 35.5, John 31, Dave Laigle 23.5

Flight 2: Ron Swinger 40, Lawyer 37, Frank McCabe 3, Rodgers 32, Ron Fields 28, I 26.5

Flight 3: Bill Lambert 44, Jerry 44, Bob Bombard 37, Don Roger Snead 34, Herbert Sa Ben Bowie 23, Zane Mason Polak 16

Flight 4: Clark Bennett 46, ston 36, Ian Sommerville 36, ton 22, Riley Harrison 6

Thursday

Flight 1: Charles Knapper son 44, Tony Luvara 43, John Barney Hathaway 31

Flight 2: Bill Foley 43, Fran Larry Glaubitz 38, George W Dodson 33, Harold Aurand .

Flight 3: Jim D'Amico 46, I 42, Tim Hale 38, Jim Rank 3 Early 32

Correction

The following athletes should have been added to the Patuxent all-a team, which appeared in the Aug. 1 edition of The Calvert Recorder:

First team

Nicholas Mosquera, freshman - tennis; Lauren Nicole Trollinger, freshman - tennis

Second team

Andrew Ragusa, junior - soccer, lacrosse; Chris Ly, senior - tennis

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NAVAL AIR STATION PATUXENT RIVER

PROPOSED REMEDIAL ACTION PLAN

SITES 4 AND 5, OPERABLE UNIT 6 (GROUNDWATER)

WEDNESDAY, AUGUST 13, 2008

FRANK KNOX BUILDING

21866 CEDAR POINT ROAD

ROOM 100

PATUXENT RIVER, MARYLAND

P R O C E E D I N G S

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3 MR. HURFF: Okay, this is going to be

4 the public meeting for Sites 4 and 5, Operable

5 Unit 6, Hermanville landfill, dealing with

6 groundwater. Sites 4 and 5 are down at Gate 3,

7 they stand both sides of the road, same area as

8 the treatment plant, down near this corner.

9 This was the first landfill at the Base. It's

10 anywhere 80 acres or so. They buried waste in

11 trenches, waste is on the surface, waste is in

12 push-outs. It was the last wastes were

13 allegedly placed around 1965. And pretty much

14 anything that was disposed of at the Base would

15 have ended up here, in that time period.

16 This is a map of the site. This is at

17 Shaw Road, it comes through here, traffic

18 circle, Gate 3. This is the Army National

19 Guard. This used to be Site 27 down here. It

20 was a site to be closed down and transferred.

21 This is METCOM. Site 5 is up here, and this is

22 collectively Site 4. The areas shown in the

1 pink here were the waste disposal trenches that
2 were in this operable unit that we've excavated
3 and cleaned up under an interim action.

4 I might as well tell you now, the areas
5 were inside of these operable units because
6 there was such a wide variety of uses for these
7 two sites. Disposal trenches, push-out areas
8 that were done here. There were surface
9 disposal through several areas. There was a
10 former firefighting training area here where
11 they had planes that were lit to practice
12 firefighting.

13 MR. COLLINS: Steve, you might explain
14 what you mean by push-out areas.

15 MR. HURFF: Oh, I'm sorry, the push-out
16 area here, this is basically an area where you
17 would back a truck up to a sharp drop, dump, and
18 just keep on pushing it out and over until you
19 build up a fill.

20 MR. CALVANO: What's in the little
21 wetland area there?

22 MR. HURFF: This here is a constructed

1 wetland.

2 MR. CALVANO: No, the purple or
3 whatever color that is.

4 MR. HURFF: That one here?

5 MR. CALVANO: The purple inside there.

6 MR. HURFF: That was an excavation,
7 there was a small area of waste that was up
8 there. This is actually a wetland here as well,
9 this map has a delineation of a wetland at that
10 site. This constructed wetland here was a part
11 of a remedy for Sites 1 and 12, Operable Unit 1.
12 We built a wetland to compensate for wetlands
13 that were filled in during that remedy.

14 Going through the aerial photographs
15 again. 1938, all farm fields. Most people are
16 pretty amazed when they looked at the old ag
17 maps, old ag photos from the thirties, forties,
18 and they see how much land was actually just
19 bare, there wasn't a tree on it.

20 1943, Base is built, we can see the
21 trenches here, that light area with the dark in
22 it, that's where they were disposing of waste.

1 And this was the accepted practice at the time.
2 You didn't have landfills this era. You've got
3 a few more trenches here (1952). And you can
4 see a couple of more there now. You can see the
5 planes down here, they were parked for the fire
6 training exercises.

7 MR. SOCHANSKI: Oh, point out the
8 garden plots, I was going to say.

9 MR. HURFF: Down here, gardens.

10 MR. COLLINS: We found that out from a
11 previous CO who saw the photo and he goes, wait
12 a minute, he had been -- his father had been
13 stationed at Pax and he remembered going to the
14 garden plots with his mother for their garden.
15 We always saw this patchwork and we were never
16 sure what it was and he actually was able to
17 tell us what it was.

18 MR. HURFF: One thing you also notice,
19 you're going to hear about Site 17 at the next
20 meeting, more on that. At the time this pond
21 wasn't here, because this dam was just being
22 built. This was 1952. Then when you step up

1 one more, 1957, they've created the dam creating
2 this pond. That we're going to be treating as a
3 part of another remedy. '64, the fire area is
4 still there. You can see some activity with
5 roads heading out to the area where you have the
6 materials being pushed over the edge.

7 '65. '69. The sewage plant is now in
8 there. '77, there are now horse stables here.
9 This area was used for riding for a number of
10 years. '81. Over time, you see a lot of the
11 roads appear, disappear, different areas
12 cleared.

13 '84. Cover of '84. '85. '96, 2002,
14 and 2006. You can see where we've cleared the
15 area for the removal of the trenched waste
16 there. And the constructed wetland up here.

17 The remedial investigation. We were
18 going to look at the groundwater beneath all of
19 sites 4 and 5. We grouped it this way, we kind
20 of sort of knew what we were facing. We had
21 placed a lot of the wells out at the site before
22 we decided to go with the distinction by

1 operable unit. We weren't finding anything in
2 groundwater at the wells at Site 4 and 5. We
3 weren't finding contaminants out there. So we
4 decided to group the operable units to try to
5 make the report a lot simpler.

6 A remedial investigation for an area of
7 this size, with the number of different uses
8 that occurred out here, could easily be a stack
9 of documents this wide. This keeps it in a
10 report volume that's manageable.

11 We had 23 different wells out there,
12 seven different in situ samples from direct
13 push. This gives you a conceptual site model of
14 the different operable units. Operable Unit 1
15 for this -- for Sites 4 and 5 being the push-out
16 area at Site 4, as well as the push-out from
17 OU-5 for Site 5.

18 You have the area 4, Operable Unit 4,
19 some drums, OU-3 was the trenched wastes, OU-2
20 was the burn area, and these are the two water
21 bodies, Holton Pond and Pine Hill Run, where
22 surface water bodies were -- surface water could

1 add to, as well as groundwater could hit.

2 This is not a scale model, this just
3 shows you conceptually everything that could
4 happen at the site.

5 And there are the groundwater sampling
6 locations for the remedial investigation. They
7 are a little difficult to see, but they are
8 scattered all throughout the sites. And there
9 are the groundwater contours. Groundwater is
10 headed towards Holton Pond, and towards Pine
11 Hill Run. Holton Pond connects to Pine Hill
12 Run. There is a culvert here, and a stream that
13 runs around until you get to Pine Hill Run, and
14 then out into the bay. With the well network we
15 have here, pretty much anything that would have
16 happened anywhere on the site, we've got a well
17 that intercepts it with the network that we have
18 here.

19 This is a list of COPCs. This one
20 looks a little bit different from the other
21 assessments. You've got tap water and
22 excavation trench. What this looks at is if you

1 were drinking the water, or if you had a
2 construction worker that was in a trench, and
3 was exposed to the water. For indoor area, for
4 residential and industrial, this looks at the
5 scenario where if you were using the water just
6 straight out of the ground, you were showering
7 with it, indoor air volatilization, if you have
8 things that are in the water that are easily
9 volatilized, that you can inhale, it's another
10 exposure pathway.

11 This is a summary of the risks for the
12 site. For the future resident adult, resident
13 child, the HIs were slightly above one, under
14 the RME scenario. The carcinogenic risks for
15 all the scenarios we looked at, the resident
16 child, adult, construction or industrial, were
17 all within the acceptable risk ranges.

18 Under the central tendency exposure
19 scenario, for the HI that was above one for the
20 resident child, it dropped to 0.54.

21 MR. CALVANO: Two questions: This
22 doesn't have the constituents that you've had on

1 your other slides, I mean on the other ones,
2 you've had exactly what you were trying to
3 detect. I mean, I know you had it on the
4 earlier one. What elements were you concerned
5 about here?

6 MR. HURFF: Here --

7 MR. COLLINS: The previous slide had
8 those.

9 MR. HURFF: Yeah, that's the list.

10 MR. COLLINS: So, the constituents of
11 concern were chloroform, trichloroethane, but
12 this is a little bit different, indoor air of
13 volatiles is the big issue now, that's why it's
14 broken out this way, but these are the
15 constituents that on first pass were a potential
16 concern for risk. And then the risk assessment
17 did a quantitative evaluation of each of those
18 for those various types of exposure, drinking
19 versus inhalation, to calculate the risks that
20 are on the next table.

21 MR. HURFF: Did you mean here, which
22 were the risk drivers?

1 MR. CALVANO: Yeah.

2 MR. HURFF: Oh, I thought that's where
3 you were headed.

4 MR. COLLINS: Oh, okay.

5 MR. HURFF: Because these numbers were
6 fairly close to one already, there weren't
7 really any major risk drivers.

8 MR. CALVANO: And that was my second
9 question, is why do you think that these, you
10 know, in an unlined trench system, are less
11 problematic than, you know, your other
12 landfills?

13 MR. COLLINS: Oh. The -- there was
14 anecdotal evidence that when they put the trash
15 in the trenches, they burned it, and in doing
16 work at another site, we actually found an
17 oblique aerial photo, we were looking for
18 another site, we could see this plume of smoke
19 off in the distance that was at Site 4.

20 MR. CALVANO: Okay.

21 MR. COLLINS: So we kind of have a
22 little bit of data to substantiate the anecdotal

1 indication that they used to burn the waste.

2 MR. CALVANO: Because these are
3 substantially less.

4 MR. COLLINS: Plus volatiles in that
5 would have been destroyed.

6 MR. SOCHANSKI: Plus the removal action
7 that was done for the trenches verify that,
8 because removing that material that was in those
9 trenches, you could see the material was burned,
10 we actually collected samples beneath the
11 trenches to look at residual contaminant
12 concentrations, they are clean.

13 So, we have evidence that those type of
14 activities occurred, and fortunately for us,
15 they did occur, because we have virtually no
16 problem with groundwater out here that we
17 normally would if they did not do that activity.

18 MR. HURFF: We're also fortunate with
19 the era where waste was disposed, 1940s, 1950s,
20 1960s, you didn't have a lot of the synthetic
21 chemicals that are available now that would be a
22 lot more problematic. They already had the area

1 at Site 6 where they were storing drums of
2 material. So, they didn't necessarily need to
3 bring it over to this end of the Base for
4 disposal.

5 So, when we did the removal, we were
6 finding asphalt, concrete, brick, burned
7 materials, metal, car parts, airplane parts,
8 ceramics. More like household waste, rather
9 than drums of solvents. I don't actually
10 believe we -- I think we pulled out just a
11 couple of drums, and that had an asphalt or oil
12 material in it, and that wasn't even in the
13 trenches, that was in an isolated spot to the
14 north of the site. So, sometimes you get lucky
15 with these sites.

16 MR. CALVANO: It sounds like it.

17 MR. HURFF: The summary for the
18 remedial investigation, this does not have an
19 ecological component to it, because
20 ecological -- it's groundwater, so you don't
21 have an exposure to ecological receptors for
22 groundwater. Ecological risk is being addressed

1 under another volume of the report. But for
2 human health, there was under unrestricted use,
3 any use of it whatsoever, no nothing was
4 identified. No MCL exceedences, no feasibility
5 study, no action.

6 And that leads you to the slide you
7 wanted to see.

8 MR. CALVANO: That was very
9 interesting. You know, I could tell a lot of
10 work goes into even the sites that, you know,
11 you have less problems with and some of that can
12 be attributed to the good luck and how they
13 handled the site five or six decades ago.

14 MR. HURFF: Yeah, we still have to do
15 the full-level assessment, because we don't know
16 when we go in what the site is going to be. And
17 that would conclude the Sites 4 and 5 of
18 Operable Unit 6. Thank you.

19 MR. CALVANO: Thank you.

20 (Whereupon, at 7:27 p.m., the meeting
21 was concluded.)

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1 CERTIFICATE OF REPORTER

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I, Sally Jo Bowling, do hereby certify

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that the foregoing proceedings were recorded by

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me via stenotype and reduced to typewriting

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under my supervision; that I am neither counsel

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for, related to, nor employed by any of the

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parties to the action in which these proceedings

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were transcribed; and further, that I am not a

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relative or employee of any attorney or counsel

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