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Site 20903-5640 (White Oak)
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NSWC WHITE OAK
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Record of Decision

Naval Surface Warfare Center – White Oak
Site 28 – Building T-14 Scrapyard

Engineering Field Activity Chesapeake
Naval Facilities Engineering Command

United States Environmental Protection Agency
Region III

Maryland Department of the Environment

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RECORD OF DECISION

SITE NAME AND LOCATION

Naval Surface Warfare Center – White Oak

Site 28 – Building T-14 Scrapyard

Silver Spring, Maryland

EPA RCRA ID No. MD0170023444

1.0 DECLARATION

1.1 STATEMENT OF BASIS AND PURPOSE

This Record of Decision (ROD) presents the determination that no further action is necessary to protect human health and the environment at Navy Installation Restoration designated Site 28, Building T-14 Scrapyard at the Naval Surface Warfare Center - White Oak (NSWC White Oak) (the Site) in Silver Spring, Maryland. The determination has been made in accordance with the Resource Conservation and Recovery Act (RCRA), the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). In 1997, ownership of the property occupied by Site 28 was transferred from the Department of the Navy (Navy) to the General Services Administration (GSA).

This decision is based on information contained in the Administrative Record file for the Site. The Maryland Department of the Environment (MDE) concurs with the selected remedy.

The U.S. Environmental Protection Agency (EPA) and the Navy recognize that publication and successful implementation of this ROD shall constitute fulfillment of requirements related to soil at Navy Installation Restoration Site 28 as required by the RCRA Section 7003 Administrative Order for the Site (First Amended Administrative Order to the Department of the Navy, the Former Naval Surface Warfare Center - White Oak, June 2, 1998).

1.2 DESCRIPTION OF THE SELECTED REMEDY

No further action is necessary at Site 28 to protect human health, welfare, or the environment. A 2002 removal action eliminated potentially unacceptable risk associated with contaminated soil at the Site. Verification sampling supports the no-further-action remedial alternative.

1.3 STATUTORY DETERMINATIONS

It has been determined that the selected remedy (no further action) for Site 28 is protective of human health and the environment based upon verification sampling and the subsequent risk assessment results.

This remedy will not result in hazardous substances, pollutants, or contaminants remaining on site above levels that allow for unlimited use and unrestricted exposure; therefore, a 5-year review will not be required for this remedial action.

1.4 ROD DATA CERTIFICATION CHECKLIST

The following information is included in the Decision Summary section of this ROD. Additional information can be found in the Administrative Record file for the Site.

- Potential chemicals of concern (PCOCs) and their respective concentrations (page 9)
- Baseline risk presented by the PCOCs (page 11).
- Current and reasonably anticipated future land use assumptions (page 9).
- Potential land use that will be available at the Site because of the selected remedy (page 9).

Thomas. G. Calhoun
Captain Thomas G. Calhoun
U.S. Navy, Engineering Field Activity Chesapeake
Washington, District of Columbia

21 FEB 03
Date

Abraham Ferdas, Director
Hazardous Site Cleanup Division
U.S. EPA - Region III

5/16/03
Date

2.0 DECISION SUMMARY

2.1 SITE NAME, LOCATION, AND DESCRIPTION

The former NSWC White Oak was originally established in 1946 as the Naval Ordnance Laboratory, with a mission to carry out research on military mines and explosives. The former facility is located in Prince George's and Montgomery Counties, approximately 5 miles north of Washington, D.C., off New Hampshire Avenue in Silver Spring, Maryland (**Figure 2-1**). Through the years, its mission was expanded to include research involving torpedoes and projectiles. In September 1974, the facility combined with the Naval Weapons Laboratory, Dahlgren, Virginia, to become the Naval Surface Weapons Center, which was renamed the Naval Surface Warfare Center, Dahlgren Division in 1988. After that time, the facility functioned as the principal Navy research, development, test, and evaluation center for surface warfare weapon systems, ordnance technology, strategic systems, and underwater weapons systems.

In response to the Base Realignment and Closure (BRAC) Act, NSWC White Oak was closed in 1997. Approximately 662 acres of the approximately 712-acre property were subsequently transferred to the GSA in the fall of 1997, and the remaining area in the southeastern portion of the facility was transferred to the U.S. Army in February 1998. The GSA has plans to reuse and develop the subject property for nonresidential purposes; one of the major tenants will be the U.S. Food and Drug Administration (FDA). The property transferred to the U.S. Army will be used in conjunction with ongoing activities at the adjacent Adelphi Research Laboratory.

The EPA RCRA identification number for NSWC White Oak is MD0170023444.

For purposes of CERCLA and the NCP, the Navy is the lead agency for the facility, pursuant to Executive Order 12580 and a Memorandum of Understanding signed by the Navy and the GSA in July 1997; MDE and EPA are the "support" agencies as that term is used in the NCP. Additionally, EPA is exercising its authorities under Section 7003 of RCRA under which it issued an administrative order to the Navy. In accordance with these authorities, the Navy and EPA are jointly selecting the response actions at the former NSWC White Oak facility. The Department of Defense is providing clean-up monies.

Site 28 is known as the Building T-14 Scrapyard. The Site is a fenced area, measuring 150 feet by 200 feet that was used to temporarily store materials prior to disposal or reuse. The Site is located in the central portion of the former NSWC-White Oak, south of Bowditch Road (**Figures 2-2**).

Site 28 is located entirely within property currently owned by the GSA.

2.2 SITE HISTORY, ENFORCEMENT ACTIVITIES, AND INVESTIGATIONS

2.2.1 Site History

The Site was identified as an Installation Restoration (IR) site by the Navy and as a solid waste management unit (SWMU) by EPA during the RCRA facility assessment (RFA) in 1990 (Kearney/Centaur, 1990). The Site was used between 1967 and 1975 to store transformers directly on the hard-packed gravel surface. The transformers were stored in a 20-foot by 40-foot area, the exact location of which is unknown. Some areas of the Site are currently covered with concrete (**Figure 2-3**).

2.2.2 Enforcement Activities

On June 2, 1998, EPA issued an Administrative Order to the Navy, pursuant to Section 7003 of RCRA, 42 U.S.C.§ 6973, that required the Navy to

> (1) undertake "'Interim Measures' (IM) at the facility to prevent or mitigate threats to human health and/or the environment;

(2) perform a [RCRA Facility Investigation (RFI)] to determine fully the nature and any release of hazardous wastes, solid wastes and/or hazardous constituents at and/or from the Facility; and

(3) perform a [RCRA Corrective Measures Study (CMS)] to identify and evaluate alternatives for corrective action necessary to prevent or mitigate migration or releases of hazardous wastes, solid wastes and/or hazardous constituents at and/or from the Facility."

EPA's RCRA 7003 Order provides the framework for completing the investigation and remediation of the former NSWC White Oak facility under RCRA. The Order also recognizes that "EPA and the Navy intend to integrate the Navy's CERCLA response obligations and RCRA corrective action obligations" at the facility.

This ROD addresses one SWMU identified in the Order, SWMU 88 (Site 28).

2.2.3 Site Investigations

Several investigations have been conducted since 1990 that focused on characterizing soil at Site 28. A description of these investigations is provided below. Additional investigations conducted at NSWC White Oak that generally might be pertinent to Site 28 are also discussed.

The RFA performed in 1990 found no physical evidence of releases at the Site and no documentation of releases in the files (Kearney/Centaur Division, 1990).

The Base Realignment and Closure Act of 1990 (BRAC II) directed the Secretary of Defense to close or realign those installations recommended by the BRAC commission. The Community Environmental Response Facilitation Act (CERFA) of 1992 directed federal agencies with jurisdiction over certain real property to terminate federal government operations and to identify "uncontaminated" parcels of the real property. In 1995, NSWC White Oak was selected for closure on the BRAC IV list. A Phase I Environmental Baseline Survey (EBS) was conducted by EA Engineering Science and Technology (EA) to assess the existing environmental information related to storage, release, treatment, or disposal of hazardous substances or petroleum products and to document the environmental condition of the property. The EBS also addressed actions required prior to property transfer to ensure compliance with requirements of CERCLA 120(h), applicable state and real estate laws, compliance programs, and the Department of Defense (DOD) policy *Environmental Requirements for Federal Agency-to-Agency Property Transfer at BRAC Installations* (DOD, 1995). The EBS was finalized and submitted to the BRAC Cleanup Team (BCT) and approved in April 1996 (EA, 1996).

After plans were made to consolidate the headquarters of the U.S. Food and Drug Administration (FDA) at NSWC White Oak, GSA developed an Environmental Impact Statement (EIS) to evaluate the potential impact of the project on the human environment (GSA, 1997). The EIS provides background information on site geology, soil, topography, water resources, etc. at the former NSWC White Oak property (now in the possession of GSA).

The Navy performed site screening (SS) in October 1997 at Site 28. The objectives of the investigation at Site 28 were to characterize subsurface conditions within the gravel portion of the scrapyard and in areas downgradient of the concrete portions of the scrapyard (TtNUS, 1998a). The investigation included surface and subsurface soil sampling. Sample locations are shown on **Figure 2-4.** Polychlorinated biphenyls (PCBs) and semivolatile organic compounds (SVOCs) were detected in the surface and subsurface soils at Site 28.

An investigation to characterize background soil, sediment, groundwater, and surface water quality was performed in the fall of 1997. A final background report was published in 1998 (TtNUS, 1998).

In April 1999, TtNUS performed fieldwork in support of an engineering evaluation/cost analysis (EE/CA). Sample locations are shown on **Figure 2-5**. Surface and subsurface soil samples were collected to characterize and delineate PCB and SVOC contamination previously identified at the Site.

In May 2000, TtNUS collected additional surface soil samples at Site 28 to further define the extent of PCB

contamination. These nine samples and one duplicate sample were collected from a depth of 0 to 6 inches and were analyzed for PCBs and TOC from the locations shown on **Figure 2-5**.

In August 2000, TtNUS collected additional surface soil samples at Site 28 in support of the basewide ecological risk assessment (ERA) (TtNUS, April 2001). Base-wide risk-based levels were developed for the ecological COPCs and incorporated into risk assessments developed for NSWC White Oak. In addition to the parameters analyzed for the basewide ERA, PCBs were analyzed in the surface soil samples to aid in further delineation of the extent of PCB contamination at Site 28.

Contaminated soils were removed from Site 28 in 2002 by Shaw Environmental and Infrastructure in accordance with the scope of work identified in the EE/CA (Tetra Tech NUS, Inc., 2001). Surface soil was sampled following the completion of the removal activities to verify the removal of contaminated soil. The results of confirmation sampling performed during the removal action are compiled in the Post-Removal Action Report (Tetra Tech NUS, Inc., 2002). Sampling locations are identified on **Figure 2-6**.

2.3 COMMUNITY PARTICIPATION

In accordance with Sections 113 and 117 of CERCLA, 42 U.S.C. Sections 9613 and 9617, the Navy, in conjunction with EPA, issued a Proposed Plan on September 23, 2002 that presented the preferred alternative for Site 28. The Proposed Plan for Site 28 became available for review by the public at that time and is among the documents that comprise the Administrative Record file for NSWC White Oak, which is maintained at EFACHES at the Washington Navy Yard, Washington D.C. In addition, the Proposed Plan for Site 28 and all other documents relevant to the remedy selection for Site 28 were made available to the public in September 2002 in an information repository for NSWC White Oak that is maintained at the Montgomery County Public Library, White Oak Branch, in Silver Spring, Maryland. The notice of the availability of these documents, the public comment period, and a public meeting was published in the *PG Journal, Montgomery Journal, Silver Spring Gazette, College Park Gazette,* and *Burtonsville Gazette* in September 2002. The public comment period was held from September 23, 2002 to October 23, 2002, and the public meeting was held on October 8, 2002. Additional community involvement is detailed in Section 3.0.

2.4 SCOPE AND ROLE OF RESPONSE ACTION

Although the NSWC White Oak facility is not on CERCLA's National Priorities List (NPL), in its response actions at the Site, the Navy has been guided by the NCP provisions pertaining to remedial actions. 40 C.F.R. Section 300.430(a)(1)(ii)(A) of the NCP provides that CERCLA NPL sites "should generally be remediated in operable units when early actions are necessary or appropriate to achieve significant risk reduction quickly, when phase analysis or response is necessary or appropriate given the size or complexity of the site, or to expedite the completion of the total cleanup." Site 28 is the fourth site at NSWC White Oak for which a ROD has been prepared.

Site 28, the subject of this ROD, consists of soil at the Site. The findings of past investigations led to the removal of contaminated soil materials and, based upon verification sampling and risk assessment results completed after the removal, the Site does not pose an unacceptable risk to human and ecological receptors.

2.5 SITE CHARACTERISTICS

2.5.1 Physical Setting

Site 28 is generally flat, with no distinct topographical features. It slopes gently southward at the southeastern corner. The maximum relief of the Site is approximately 5 feet, with a maximum elevation of 350 feet and a low elevation of 345 feet. Subsurface investigations (soil borings) inside the fenced yard at Site 28 indicated a gravel layer to a depth of approximately 2 feet. Inside the fenced area and in the area surrounding the fenced scrapyard, underlying the gravel layer, the soil is a mixture of clay, silt, and sand. Although none of the Site 28 borings extended beyond 4 feet deep, it is expected that Site 28 subsurface conditions include the same Coastal Plain deposits overlying a saprolite bedrock layer, as observed in deeper borings at NSWC White

Oak. Moist to wet conditions were encountered in the subsurface at depths between 1 and 3 feet during field investigations.

There are no surface water bodies at Site 28. The nearest surface water body is a small southward-flowing tributary of Paint Branch, located approximately 500 feet south of the Site. The stream flows toward the southeast and empties into Paint Branch.

There are no known areas of archeological or historical importance at Site 28.

2.5.2 Conceptual Site Model

Figure 2-7 provides a conceptual site model (CSM) for human receptors. The CSM illustrates contaminant sources, release mechanisms, exposure pathways, migration routes, and potential receptors. The CSM provides a basis for the risk assessments summarized later in this ROD and, as a result, the basis for necessary response actions. In this case, the surface soil at Site 28 would be the source of contamination.

Human receptors under the current land use scenario (vacant industrial complex) and reasonably anticipated future land use scenarios include a full-time worker and construction workers. Although residential use is not reasonably anticipated, future residential use was still evaluated to determine whether land use controls would be needed. Current and potential future land and resource uses are discussed further in Section 2.6. Potential risks to human health are identified in Section 2.7.1. It is anticipated that the property will be used for nonresidential purposes in the future.

Ecological receptors that inhabit the wooded area on and near the former storage area could be directly exposed to chemicals present in surface soils (i.e., plants and soil invertebrates); therefore, potential risks to these receptors were evaluated in the basewide ERA (TtNUS, 2001).

2.5.3 Scoping of Prior Investigations

Six surface soil samples, 28-SS-01 through 28-SS-03 and 28-SS-07 through 28-SS-09, were collected from Site 28 at depths between 0 and 2 feet during the site screening conducted in 1997. The surface soil samples were collected from the same locations as six of the subsurface soil samples. Samples 28-SS-07, 28-SS-08, and 28-SS-09 were collected beyond the fence line to investigate the potential for contaminant migration from the concrete pad in the eastern end of the scrapyard. In particular, sample 28-SS-09 was collected within a drainageway along the scrapyard perimeter. The surface soil samples were analyzed for Target Compound List (TCL) volatile organic compounds (VOCs), TCL SVOCs, Target Analyte List (TAL) metals plus cyanide, and TCL pesticides/PCBs. The analytical data are presented in **Table 2-1**.

Twelve subsurface soil samples were collected from nine soil borings, 28-SB-01 through 28-SB-09, at Site 28 to evaluate the vertical extent of contamination. Due to the coarse, gravelly nature of the soil at Site 28, a 3-inch split spoon was used in place of a hand auger to collect the subsurface soil samples. At locations 28-SB-04, 28-SB-05, and 28-SB-06, samples were collected at 2-foot and 4-foot depths by boring through the existing concrete. One sample was collected from each of the remaining boring locations. Subsurface soil samples were analyzed for TCL VOCs, TCL SVOCs, TAL metals plus cyanide, and TCL pesticides/PCBs. The analytical data are provided in **Table 2-2**.

In April 1999, fieldwork in support of an EE/CA was conducted. Nineteen surface soil samples were collected to characterize and delineate PCB and SVOC contamination previously identified at the Site. Fourteen surface soil samples, 28-PCB-01 through 28-PCB-14, were analyzed for TCL PCBs. Five surface soil samples, 28-SB-04A/B and 28-SB-07A/B/C, were analyzed for TCL SVOCs. Fourteen near-surface soil samples were collected between 2 and 4 feet below ground surface (bgs) and analyzed for TCL PCBs. These samples were collected in the same locations as the surface soil samples that were collected for PCB analysis. The analytical data are provided in **Tables 2-1 and 2-2**.

In May 2000, additional surface soil samples (samples 28SS100 through 28SS108) were collected at Site 28 to further define the extent of PCB contamination. These nine samples and one duplicate sample were

collected from a depth of 0 to 6 inches and analyzed for PCBs and TOC. The analytical data are provided in **Table 2-1**.

In August 2000, surface soil samples 28SS201 through 28SS209 were collected at Site 28 in support of the basewide ERA. In addition to the parameters analyzed for the basewide ERA, PCBs were analyzed in the surface soil samples to aid in further delineation of the extent of PCB contamination at Site 28. The analytical data are provided in **Table 2-1**.

2.5.4 Nature and Extent of Contamination

2.5.4.1 Pre-Removal Action Investigations

Analytical data from site investigations indicated elevated polycyclic aromatic hydrocarbon (PAH) concentrations northeast and south of the scrapyard, specifically benzo(a)pyrene [810 micrograms per kilogram (µg/kg) maximum detection], benzo(b)fluoranthene (1,200 µg/kg), dibenzo(a,h)anthracene (130 µg/kg), and hexachlorobenzene (4,600 µg/kg). In addition, Aroclors 1248, 1254, and 1260 (PCBs) were detected in surface soil samples collected from a drainage swale in the southeastern corner of the Site and along the southern and eastern fence lines. PCB concentrations in excess of screening criteria were found at depth in two isolated subsurface samples, 28-PCB-11 and 28-SB-09. Benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene were also detected above screening criteria in sample 28-SB-07.

Aluminum, arsenic, chromium, and iron were detected at concentrations in excess of screening criteria in surface and subsurface soil samples. Additionally, vanadium was detected above screening criteria in surface soil and manganese was detected above screening criteria in subsurface soil. However, the inorganic concentrations in surface soil and subsurface soil were below background concentrations.

Based on the analytical results, approximately 1,700 cubic yards of contaminated soil requiring remediation were identified at Site 28. Elevated PCB concentrations were found in and downgradient of the swale that drains the southeastern portion of the scrapyard. The maximum total PCB concentration identified at Site 28 was 2,300,000 µg/kg at location 28SS103.

An area measuring approximately 2,800 square feet in the northeast corner of the Site, outside the fence line, in the vicinity of samples 28-SB-07, 28-SB-07A, 28-SB-07B, and 28-SB-07C was found to be contaminated with PCBs and PAHs.

In the southeastern corner of the Site, an area measuring approximately 13,250 square feet, beginning at sample location 28SS100 and extending southward past sample locations 28-PCB-11 and 28-PCB-12 and west to sample location 28SS203, was contaminated with PCBs. Total PCB concentrations in this area ranged from 45 to 16,800 µg/kg. An area of deeper contamination was identified in the vicinity of 28-PCB-11 (1,190 µg/kg total PCBs).

Also along the southern fence line, an area measuring 170 feet by 20 feet was identified with PCB concentrations in excess of risk-based standards. This area encompasses sample locations 28-PCB-01, 28-PCB-02, 28-SB-04, 28-SB-04A, 28-SB-04B, 28SS103, 28SS102, and 28SS201. The maximum concentration of total PCBs detected in this area was 230,000 µg/kg. An area of deeper contamination in the vicinity of 28-SB-04 also was identified.

On the western side of the fenced area, an area measuring approximately 3,100 square feet was identified as contaminated with PCBs. This area encompasses sample locations 28-SB-01, 28-SB-02, and 28-SB-03. An area of deeper contamination in the vicinity of sample location 28-SB-03 was identified as well.

2.5.4.2 Post-Removal Action Sampling

At Site 28, 27 samples were collected from 26 sampling locations during the course of the removal action. All samples were analyzed for PCBs, while selected samples were also analyzed for SVOCs. Nine of these

samples were bias samples collected prior to the initiation of the removal action to further define the limits of contaminated soil. These samples were collected on February 15, 2002 and were identified as 28-SS-001 through 28-SS-009. Refer to **Figure 2-6** for their approximate location.

During the removal action, 18 post-removal action soil samples were collected from 17 locations to verify the removal of contaminated soil. The samples were identified as 28-SS-010 through 28-SS-026. Post-excavation sampling was performed on two occasions (April 4, 2002 and April 25, 2002). Analytical data for the soil samples collected at Site 28 are summarized in **Table 2-3**.

Aroclor 1248 (at a maximum concentration of 375 µg/kg in sample 28-014) and Aroclor 1260 (at a maximum concentration of 860 µg/kg in sample 28-013) were the only chemicals detected in post-removal verification samples at concentrations that exceeded the EPA Region 3 residential risk-based concentration (RBC) of 320 µg/kg. Aroclor 1260 was not detected at a concentration in excess of the preliminary remediation goal (PRG) for soils at Site 28 (1,000 µg/kg). The PRG was selected during the removal action planning and is a PCB concentration protective to human health and the environment. The exposure concentrations for Aroclor 1248 and Aroclor 1260, represented by the 95% upper confidence level of the mean (UCL) of the verification samples, were 38 µg/kg and 234 µg/kg, respectively, both less than the residential RBC.

2.6 CURRENT AND POTENTIAL FUTURE LAND AND RESOURCE USES

Currently, Site 28 is a fenced area measuring 150 feet by 200 feet in a developed portion of the former NSWC White Oak property. The GSA, which owns the property, has plans to use the property adjacent to Site 28 for nonresidential purposes. In addition, it is not reasonably anticipated that the Site will be used for residential purposes. Nonetheless, for the purposes of the site risk assessment, the Site was evaluated assuming the possibility of future residential use.

2.7 SUMMARY OF SITE RISKS

2.7.1 Summary of Human Health Risk Assessment

The baseline risk assessment estimates the risks the Site would pose if no action were taken beyond the source removal already done. It can provide the basis for taking action and identifies the contaminants and exposure pathways that need to be addressed by a remedial action. It can also be used to support the determination that no additional remedial action is necessary to protect human health, which is the case at Site 28. This section of the ROD summarizes the results of the baseline risk assessment for Site 28. The risk assessment contains an evaluation of all potential contaminants of concern (PCOCs) and exposure pathways. PCOCs are those chemicals found at the site that are identified as a potential threat to human health and are evaluated further in the baseline risk assessment. Chemicals of concern (COCs) are a subset of the PCOCs; they are those chemicals that are identified as needing to be addressed by a response action. No COCs were identified for Site 28. The following subsections summarize the risk assessment for soil at Site 28.

2.7.1.1 Potential Contaminants of Concern

The selection of PCOCs is a qualitative screening process that identifies those site-related chemicals in the risk assessment that comprise the predominant contributor(s) of potential risk at the site. In this evaluation, a chemical was selected as a PCOC and retained for further risk evaluation if the maximum detected concentration exceeded the PCOC screening level and, for inorganics, if the chemical was also determined to be present at concentrations above background. The PCOC screening levels are based on EPA Region 3 RBCs (EPA, 2002) for residential land use and correspond to a systemic Hazard Quotient of 0.1 (for noncarcinogens) or a lifetime cancer risk of $1x10^{-6}$ (for carcinogens). The Region 3 RBCs were developed using protective default exposure assumptions suggested by EPA (EPA, 1991) and the most currently available reference doses and cancer slope factors (EPA, 2001). PCOCs for soil are also identified using site-specific screening levels for transfers from soil to air and migration from soil to groundwater, which have been developed using the EPA Soil Screening Guidance (EPA, 1996). The soil screening levels (SSLs) for transfer from soil to air developed by EPA Region 3 (EPA, Region 3, April 2002) were not exceeded during the initial screening, suggesting that there is no significant transfer from soil to air. Also, SSLs for migration from soil to

groundwater developed by EPA Region 3 (EPA, Region 3, April 2002) were not exceeded during the initial screening, suggesting that there is no significant migration from soil to groundwater.

Frequency of detection is used to exclude chemicals when data sets of 20 samples or greater are available. Generally, a detection rate of five percent or less justifies elimination of the chemical from further consideration if the concentrations detected are not representative of a "hot spot" area. Chemicals eliminated from further evaluation at this step are assumed to present minimal risks to potential human receptors.

The essential nutrients calcium, magnesium, potassium, and sodium are not identified as PCOCs. These inorganic chemicals are naturally abundant in environmental matrices and are only toxic at high doses.

Inorganic constituents found at concentrations indicative of background levels are not considered to be site-related contaminants and are not retained as PCOCs. Facility-specific background data are used to determine whether detected chemicals are present at naturally occurring levels. The chemical concentrations in soil were compared to basewide background concentrations. The inorganic chemicals in soil samples at Site 28 were determined to be within naturally occurring levels in soil.

Chemicals eliminated from further evaluation at this step are assumed to present minimal risks to potential human receptors and are not considered further in the risk assessment.

The following chemical was retained as a PCOC in surface/subsurface soil:

- The PCB Aroclor 1260

2.7.1.2 Exposure Assessment

This section presents a summary of the exposure assessment. The exposure assessment defines and evaluates the type and magnitude of human exposure to the chemicals present at or migrating from a site. The exposure assessment is designed to depict the physical setting of the site, identify potentially exposed populations, and estimate chemical intakes under the identified exposure scenarios. Actual or potential exposures are based on the most likely pathways of contaminant release and transport, as well as human activity patterns. A complete exposure pathway has three components: a source of chemicals that can be released into the environment, a route of contaminant transport through an environmental medium, and an exposure or contact point for a human receptor. The potential human receptors evaluated for exposure to contaminated media at Site 28 include full-time workers, construction workers, and child and adult residents.

The construction workers would be exposed to surface and subsurface soil. The resident would be exposed to surface soil through incidental ingestion and dermal contact.

Pathway-specific information for these receptors, such as the values of exposure parameters used to quantify exposure, are presented in the human health risk assessment (HHRA). The values reflect EPA guidance provided in the *Exposure Factors Handbook* (EPA 1997) and the *Risk Assessment Guidance for Superfund, Volume 1: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment)* (EPA 2001).

The exposure point concentration (EPC), which is calculated for PCOCs only, is a reasonable maximum estimate of the chemical concentration that is likely to be contacted over time and is used to calculate estimated exposure intakes. The 95 percent upper confidence limit (UCL), which is based on the distribution of a data set, is considered to be the best estimate of the exposure concentration for data sets with 10 or more samples. The 95 percent UCL is used as the EPC for soil. The EPCs for the chemicals identified as PCOCs in soil at Site 28 are presented in **Table 2-4**.

2.7.1.3 Toxicity Assessment

This section provides the methodologies and results for the characterization of the potential human health risks associated with the potential exposure to soil at Site 28. The toxicity assessment identifies the potential

adverse health effects in exposed populations. Toxicity values approved by EPA are used to characterize the potential risk.

The toxicity value used to evaluate carcinogenic effects is the cancer slope factor. The cancer slope factor is an upper-bound estimate of the probability of development of cancer over a lifetime based on a given dose. It is based on dose-response data from human and/or animal studies. At this time, slope factors are not available for the dermal route of exposure. Thus, the dermal slope factors used in the assessment have been extrapolated from oral values. An adjustment factor is sometimes applied and is dependent upon how well the chemical is absorbed via the oral route. Adjustments are particularly important for chemicals with less than 50 percent absorption via the ingestion route. However, adjustment is not necessary for the chemicals evaluated at this site as their percent absorption is greater than 50 percent. Therefore, the same values presented above were used as the dermal carcinogenic slope factors for these contaminants.

2.7.1.4 Risk Characterization

This section presents the results of the HHRA for post-removal surface conditions at Site 28. In this evaluation, post-removal analytical data for Site 28 are compared to screening levels [based on EPA Region 3 RBCs for residential and industrial soil ingestion (EPA, 2002)] in order to select a list of PCOCs for the Site. The post-removal data used in this evaluation completely replace the soil data used in prior investigations for Site 28 at NSWC White Oak because the post-removal data represent soil left in place after the removal action at the Site.

Quantitative estimates of risk are calculated using intake and toxicity values according to risk assessment methods outlined in current EPA guidance (EPA, 1989). Lifetime cancer risks are expressed in the form of dimensionless probabilities, referred to as ICRs, which are derived using published cancer slope factors (CSFs). Noncarcinogenic risk estimates are presented in the form of HQs that are derived using published reference doses (RfDs).

ICR estimates are generated for each PCOC using estimated exposure intakes and published CSFs, as follows:

$$ICR = (CDI)/(SF)$$

where:

ICR = a unitless probability (e.g., 2×10^{-5}) of an individual's developing cancer

CDI = chronic daily intake averaged over 70 years (mg/kg-day)

SF = slope factor, expressed as $(mg/kg\text{-}day)^{-1}$

These risks are probabilities that usually are expressed in scientific notation (e.g., 1×10^{-6}). An excess lifetime cancer risk of 1×10^{-6} indicates that an individual experiencing the reasonable maximum exposure estimate has a 1 in 1,000,000 chance of developing cancer as a result of site-related exposure. This is referred to as an "excess lifetime cancer risk" because it would be in addition to the risks of cancer individuals face from other causes such as smoking or overexposure to the sun. The chance of an individual's developing cancer from all other causes has been estimated to be as high as one in three.

In order to interpret the quantitative risks and to aid risk managers in determining the need for remediation at a site, quantitative risk estimates are compared to typical benchmarks. EPA has defined the range of 1×10^{-6} to 1×10^{-4} as the ICR "target range" for most hazardous waste facilities addressed under CERCLA. Cumulative ICRs greater than 1×10^{-4} generally will indicate that some degree of remediation is required, and ICRs below 1×10^{-6} normally will not result in remedial efforts. Whenever ICRs fall between 1×10^{-4} and 1×10^{-6}, decisions for remediation will be made on a case-specific basis. Individual chemicals contributing significantly to risks above the target range are considered to be chemicals of concern.

Noncarcinogenic risks are assessed using the concept of HQs and HIs. The HQ for a PCOC is the ratio of the estimated intake to the RfD, as follows:

HQ = (Estimated Exposure Intake) / (RfD)

Summing the individual HQs for all the PCOCs generates an HI. It should be noted that HI is not a mathematical prediction of the severity of toxic effects and therefore is not a true "risk"; it is simply a numerical indicator of the possibility of the occurrence of noncarcinogenic (threshold) effects.

An HI exceeding unity (1.0) indicates that there may be potential noncarcinogenic health risks associated with exposure. If an HI exceeds unity, target organ effects from individual PCOCs contributing to the risk are considered. Only those chemicals that impact the same target organ(s) or exhibit similar critical effect(s) will be regarded as truly additive. Thus, PCOCs contributing to an HI greater than 1.0 on the basis of a single target organ/effect are considered to be chemicals of concern.

A total of 26 samples were collected at Site 28 to verify the removal of contaminated soil. Samples 28-SS001 through 28-SS009 were biased samples collected to confirm the limits of the excavation prior to the initiation of the removal action. At eight of the nine biased sampling locations, the total PCB concentration was less than the PRG for the removal action (1,000 µg/kg). At the location of the exceedance (28-SS005), soil excavation was performed and confirmed through the collection of a nearby verification sample (28-SS023). As total PCB concentrations decreased significantly a short distance from known "hot-spots" (as evidenced by samples 28-SS001, 28-SS002, 28-SS003, and 28-SS004), the likelihood of elevated PCB concentrations existing south of sample 28-SS005 is believed to minimal. Therefore, 25 soil samples comprise the post-removal data set for use in the post-removal risk evaluation. These data are summarized in **Table 2-3**.

Aroclor 1248 (in samples 28-SS014 and 28-SS014D) and Aroclor 1260 (in samples 28-SS001, 28-SS002, 28-SS003, 28-SS004, 28-SS009, and 28-SS013) were the only chemicals detected in verification samples at concentrations that exceeded the EPA Region 3 residential RBC of 320 µg/kg. Aroclor 1260 was not detected at a concentration in excess of the PRG for soils at Site 28 (1,000 µg/kg). The exposure concentrations for Aroclor 1248 and Aroclor 1260, represented by the 95% upper confidence level of the mean (UCL) of the verification samples, were 38 µg/kg and 234 µg/kg, respectively, both less than the residential RBC.

Risks were calculated to evaluate exposure to soil through incidental ingestion and dermal contact for adult and child residents, the full-time worker, and the future construction worker, based on post-removal conditions. Exposure assumptions for all receptors and pathways are consistent with those used at other sites at the former NSWC White Oak. These exposure assumptions were defined in the *Work Plan for RCRA Facility Investigation and Corrective Measures Study* (TtNUS 1998). The risk for the resident is 1.2×10^{-6}, within EPA's target risk range of 10^{-4} to 10^{-6}. The risks for the full-time worker and the future construction worker are 3.7×10^{-7} and 3.4×10^{-8}, respectively, both less than EPA's target risk range. The risks are summarized in **Table 2-5**.

No contaminants of concern that would pose a non-carcinogenic risk were identified in the post-removal verification samples. Therefore no HI is reported.

2.7.1.5 Uncertainty Analysis

The use of predetermined screening values based on conservative land use scenarios (i.e., residential land use for soil ingestion), in combination with the use of risk-based screening values corresponding to a $1X10^{-6}$ risk, should ensure that the significant contributors to risk from a site are evaluated. The elimination from the risk assessment of chemicals that are present at concentrations that correspond to a value less than $1X10^{-6}$ risk and less than 0.1 HI should not affect the final conclusions of the risk assessment since these chemicals are not expected to cause a potential health concern.

The current use and planned future use of Site 28 has been well established, thereby reducing the uncertainty associated with land use assumptions. Therefore, potential risks presented for future residents are not likely to occur. This exposure scenario is primarily evaluated for informational purposes.

2.7.1.6 Conclusions of Human Health Risk Assessment

Potential current receptors include full-time workers and construction workers, and future hypothetical child and adult residents. The receptors were evaluated for exposure to soil by dermal contact and ingestion.

The PCOC identified for Site 28 in surface and subsurface soils is Aroclor 1260, a PCB.

No significant carcinogenic risks (ICRs) were identified for the potential site receptors as the concentration of the PCBs in site soils following the removal action was less than the PRG protective of human health. Non-carcinogenic risks were not evaluated as no non-carcinogenic PCOCs were identified at Site 28 following the removal action.

In summary, no unacceptable potential health hazards were found to be associated with exposure to surface and subsurface soil remaining at Site 28.

2.7.2 Summary of Ecological Risk Assessment

2.7.2.1 Baseline Ecological Risk Assessment (BERA)

The BERA for NSWC-White Oak developed basewide soil and sediment risk-based levels for several chemicals (TtNUS, 2001a) for use in scoping remedial actions. The risk-based soil levels were developed for total polynuclear aromatic hydrocarbons (PAHs) and total PCBs in each of the two soil types present at NSWC-White Oak (gneiss soils and sand and gravel soils). The rationale for the selection of the soil and sediment constituents is presented in the BERA work plan (TtNUS, 2000a).

The risk-based soil level for PCBs calculated in the BERA derived using the food-chain models was determined to be 2,400 µg/kg. The average PCB concentration at a site is compared to this value to determine if action is needed. The standard is applicable to the soil type present at Site 28. The maximum and average PCB concentrations at Site 28 prior to the removal action were greater than 2,400 µg/kg; therefore, there was a potential for small mammals and birds to experience a decrease in reproduction from ingesting worms at the Site.

The pre-removal action maximum total PAH concentration at Site 28 was not greater than 22,800 µg/kg, calculated in the BERA to be protective of earthworms. Therefore, no impacts to earthworms are expected to occur as a result of PAH levels in the soil.

2.7.2.2 Conclusion of Ecological Risk Assessment

Following the removal action at Site 28, total PAH and PCB concentrations were not detected in soil samples at concentrations that exceeded the NSWC-White-Oak-specific risk-based levels for either contaminant group in the soil type present at the Site (gneiss soil). The average total PCB concentration in soil at Site 28 was 233 µg/kg. Therefore, no adverse risk would be present for ecological receptors at Site 28 following the removal action.

2.8 SELECTED REMEDY

The results of the removal action risk assessment indicate that, based on available information, soil associated with Site 28 does not present unacceptable risk to human health and the environment. In this case, the Navy, with the support of the EPA, selects a remedy of no further action. There are no costs associated with this remedy.

2.9 DOCUMENTATION OF SIGNIFICANT CHANGES

The Proposed Plan for Site 28 at the former NSWC White Oak, Silver Spring, Maryland was released for public comment on September 23, 2002. The Proposed Plan identified no further action as the preferred alternative. The Navy reviewed all verbal comments received during the public comment period (which are summarized in the Responsiveness Summary, Section 3.0). It was determined that no significant changes to the remedy, as originally identified in the Proposed Plan, were necessary or appropriate.

3.0 RESPONSIVENESS SUMMARY

3.1 OVERVIEW

This Responsiveness Summary provides a summary of comments received during the public comment period for Site 28, along with responses to those comments. The public comment period for the Proposed Plan for Site 28 began on September 23, 2002 and ended on October 23, 2002. A public meeting was held on October 8, 2002 at the former NSWC White Oak, Silver Spring, Maryland to describe the preferred alternative and to solicit and accept either written comments or verbal comments. This Responsiveness Summary was prepared in accordance with guidance in "Community Relations in Superfund: A Handbook" (OSWER Directive 9320.3B, January 1992).

3.2 BACKGROUND ON COMMUNITY INVOLVEMENT

The Navy has had a comprehensive community relations program for NSWC White Oak since research activities commenced at the Base. Recent community relations activities have been conducted in accordance with the NSWC White Oak Community Relations Plan, originally developed in 1991 and revised in 1998, 2000, and 2002. These activities have included regular technical and Restoration Advisory Board (RAB) meetings with local officials, fact sheets, site tours for the community, the establishment of the information repository at the local library, and the development of a web page for the dissemination of information to the White Oak community.

The Navy organized a Technical Review Committee (TRC) in 1989 to review and discuss the NSWC White Oak environmental issues with local community officials and concerned citizens. The TRC was reorganized into the RAB in 1995. The RAB consists of representatives of the Navy, EPA, MDE, the Prince George's County Health Department, Maryland-National Park and Planning Commission, and members of the community. The RAB has met frequently since its inception and now meets quarterly. The RAB has been assisting in the planning and review of environmental investigation, remedial alternative evaluation, and remediation activities. The EE/CA and Proposed Plan for Site 28 were discussed at the RAB meetings.

RAB meeting minutes and reports presenting the findings of the investigations are maintained at the local information repository. The repository is located at the Montgomery County Public Library, White Oak Branch, located at 11701 New Hampshire Avenue, Silver Spring, Maryland. The Administrative Record for NSWC White Oak is located at the Engineering Field Activity Chesapeake, Washington Navy Yard, 1314 Harwood Street, S.E, Washington, District of Columbia.

Community relations activities for the final selected remedy include the items below:

- The documents concerning the investigation and analysis of Site 28 were presented at the RAB meetings and copies were provided to RAB members for review, discussion, and comment.
- The documents concerning the investigation and analysis of Site 28, as well as copies of the Proposed Plan, were placed in the information repository.
- The Navy mailed copies of the Proposed Plan to members of the RAB.
- Newspaper announcements on the availability of documents and the public meeting and comment period were published in the *PG Journal, Montgomery Journal, Burtonsville Gazette, College Park Gazette,* and *Silver Spring Gazette*.
- The Navy established a 30-day public comment period for this Proposed Plan starting September 23, 2002 and ending October 23, 2002.
- A public meeting was held on October 8, 2002 to present the Proposed Plan and to answer questions concerning Site 28.

3.3 SUMMARY OF COMMENTS RECEIVED DURING THE PUBLIC COMMENT PERIOD AND NAVY RESPONSES

No formal comments were received during the public comment period. Questions were received during the public meeting of October 8, 2002. A summary of the questions and responses provided at the meeting is provided below.

The Navy and the EPA have taken the comments received at the public meeting into consideration and continue to believe that the no-further-action alternative adequately and appropriately addresses Site 28 in a cost-effective and responsible manner.

Comments received during the October 8, 2002 public meeting:

Site 28, Building T-14 Scrapyard:

Q: Was the removal action goal based primarily on PCBs? What was the goal?

A: The preliminary remediation goal (PRG) for total PCBs was 1 part per million. The Aroclors-1248, -1260, -1254, and so on were added to achieve a value for total PCBs.

Q: When you did confirmatory samples, did you still have detections?

A: There were some detections of PCBs, but they were less than 1 milligram per kilogram, total. Also, there were a few samples collected for polynuclear aromatic hydrocarbons (PAHs). It has a different cleanup standard. There were no PAHs detected in the areas where they were found previously in the verification samples.

LIST OF ACRONYMS

AOC	Area of Concern
BRAC	Base Realignment and Closure
B&R Environmental	Brown & Root Environmental
BERA	Baseline Ecological Risk Assessment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CMS	Corrective Measures Study
COCs	Chemicals of Concern
CSFs	Cancer Slope Factors
DOD	Department of Defense
EA	EA Engineering Science and Technology
EBS	Environmental Baseline Survey
EEQ	Ecological Effects Quotient
EFACHES	Engineering Field Activity Chesapeake
EPA	United States Environmental Protection Agency
EPC	Exposure Point Concentration
ERA	Ecological Risk Assessment
FDA	United States Food and Drug Administration
GSA	General Services Administration
HI	Hazard Index
HNUS	Halliburton NUS Corporation
HSWA	Hazardous and Solid Waste Amendments
HQ	Hazard Quotient
IAS	Initial Assessment Study
IM	Interim Measures
IRP	Installation Restoration Program
MDE	Maryland Department of the Environment
Navy	Department of the Navy
NCP	National Oil and Hazardous Substances Pollution Contingency Plan (NCP)
NEESA	Naval Energy and Environmental Support Activity
NSWC	Naval Surface Warfare Center
PCBs	Polychlorinated Biphenyls
PCOCs	Potential Chemicals of Concern
RAB	Remedial Action Board
RBCs	Risk-Based Concentrations
RCRA	Resource Conservation and Recovery Act
RFA	RCRA Facility Assessment

RfDs	Reference Doses
RFI	RCRA Remedial Feasibility Investigation
RI	Remedial Investigation
ROD	Record of Decision
SARA	Superfund Amendments and Reauthorization Act
SERA	Screening-Level Ecological Risk Assessment
SSLs	Soil Screening Levels
SVOCs	Semivolatile Organic Compounds
SWMU	Solid Waste Management Unit
TRC	Technical Review Committee
TtNUS	Tetra Tech NUS, Inc.
VOCs	Volatile Organic Compounds

STATE OF MARYLAND

LETTER OF CONCURRENCE

MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Boulevard • Baltimore, Maryland 21230
410-537-3000 • 1-800-633-6101

Parris N. Glendening
Governor

Kathleen Kennedy Townsend
Lt. Governor

Richard F. Pecora
Secretary

Merrylin Zaw-Mon
Deputy Secretary

January 9, 2003

Mr. Walter Legg
Engineering Field Activity Chesapeake
Washington Navy Yard, Building 212
1314 Harwood Street SE
Washington D.C. 20374-5018

Re: Final Record of Decision for Site 28 – Building T-14 Scrapyard, Former Naval Surface Warfare Center (NSWC) White Oak, Silver Spring, Maryland, dated November 2002.

Dear Mr. Legg:

The Federal Facilities Section (FFS) of the Maryland Department of the Environment's Waste Management Administration has reviewed the above referenced submittal. This Record of Decision (ROD) documents the Navy's determination that no further action is necessary to protect human health and the environment at Site 28 – Building T-14 Scrapyard, of the former NSWC White Oak Facility in Silver Spring, Maryland.

Site 28 is a fenced area measuring 150 feet by 200 feet that was used to temporarily store materials prior to disposal or reuse. Between 1967 and 1975, transformers were stored directly on the hard packed gravel surface in a 20 foot by 4 foot area. Analytical data from investigations indicated elevated polycyclic aromatic hydrocarbons and polychlorinated biphenyls (Aroclors 1248, 1254, 1260) in surface soil samples. A 2002 removal action, which included the excavation and off-site disposal of 4,400 tons of contaminated soil, eliminated potentially unacceptable risks. Results from the post removal action sampling and the risk assessment indicate that, based on available information, soil associated with Site 28 does not present an unacceptable risk to human health or the environment.

No written comments were received during the public comment period, however, verbal comments at the proposed plan public meeting supported the Navy's decision that no further action is required. Therefore, based upon the acceptable level of protection to human health and the environment associated with the soil at Site 28, the FFS concurs with the selected remedy.

If you have any questions, please contact me at (410) 537-3440.

Sincerely,

Mark A. Callaghan
Remedial Project Manager
Federal/NPL Superfund Division

MAC:bjm

cc: Mr. Bruce Beech
Ms. Kathy Landhrohn
Mr. Scott Nesbit
Mr. Richard Collins
Mr. Karl Kalbacher
Mr. Herb Meade

TABLE 2-1

SITE 28
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR SURFACE SOIL
NSWC WHITE OAK, SILVER SPRING, MARYLAND

LOCATION	28PCB01	28PCB02	28PCB03	28PCB04	28PCB05	28PCB06	28PCB07	28PCB07	28PCB07	28PCB08
SAMPLE ID:	28-PCB-01	28-PCB-02	28-PCB-03	28-PCB-04	28-PCB-05	28-PCB-06	28-PCB-07	28-PCB-07-AVG	28-PCB-07-D	28-PCB-08
DATE:	04/06/99	04/06/99	04/06/99	04/06/99	04/06/99	04/06/99	04/06/99	04/06/99	04/06/99	04/06/99
TOP DEPTH:	0	0	0	0	0	0	0	0	0	0
BOTTOM DEPTH:	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Volatile Organics (ug/kg)										
ACETONE										
CHLOROBENZENE										
Semivolatile Organics (ug/kg)										
1,2-DICHLOROBENZENE										
1,3-DICHLOROBENZENE										
1,4-DICHLOROBENZENE										
2,4-DIMETHYLPHENOL										
2-METHYLNAPHTHALENE										
2-METHYLPHENOL										
4-METHYLPHENOL										
ACENAPHTHENE										
ANTHRACENE										
BENZO(A)ANTHRACENE										
BENZO(A)PYRENE										
BENZO(B)FLUORANTHENE										
BENZO(G,H,I)PERYLENE										
BENZO(K)FLUORANTHENE										
BIS(2-ETHYLHEXYL)PHTHALATE										
CARBAZOLE										
CHRYSENE										
DI-N-BUTYL PHTHALATE										
DIBENZO(A,H)ANTHRACENE										
DIBENZOFURAN										
DIETHYL PHTHALATE										
FLUORANTHENE										
FLUORENE										
HEXACHLOROBENZENE										
INDENO(1,2,3-CD)PYRENE										
NAPHTHALENE										
PHENANTHRENE										
PHENOL										
PYRENE										
OV 2-BUTANONE										
Pesticides/PCBs (ug/kg)										
4,4'-DDE										
AROCLOR-1248	1600 J	2000 U	46 U	80 J	43 U	40 U	44 U	44 U	44 U	88 U
AROCLOR-1254	38 U	21000	240 J	41 U	48 J	230 J	54 J	67.5 J	81 J	3100 J
AROCLOR-1260	1900	17000 J	220 J	240 J	42 J	220 J	61 J	67.5 J	74 J	4000
DIELDRIN										
Inorganics (mg/kg)										
ALUMINUM										
ARSENIC										
BARIUM										
CALCIUM										
CHROMIUM										

TABLE 2-1

SITE 28
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR SURFACE SOIL
NSWC WHITE OAK, SILVER SPRING, MARYLAND

LOCATION	28PCB01	28PCB02	28PCB03	28PCB04	28PCB05	28PCB06	28PCB07	28PCB07	28PCB07	28PCB08
SAMPLE ID:	28-PCB-01	28-PCB-02	28-PCB-03	28-PCB-04	28-PCB-05	28-PCB-06	28-PCB-07	28-PCB-07-AVG	28-PCB-07-D	28-PCB-08
DATE:	04/06/99	04/06/99	04/06/99	04/06/99	04/06/99	04/06/99	04/06/99	04/06/99	04/06/99	04/06/99
TOP DEPTH:	0	0	0	0	0	0	0	0	0	0
BOTTOM DEPTH:	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
COBALT										
COPPER										
CYANIDE										
IRON										
LEAD										
MAGNESIUM										
MANGANESE										
MERCURY										
NICKEL										
POTASSIUM										
SELENIUM										
VANADIUM										
ZINC										
Miscellaneous Parameters										
CATION EXCHANGE CAPACITY MEQ/1										
PH S.U.										
SIEVE # 10										
SIEVE # 140										
SIEVE # 20										
SIEVE # 200										
SIEVE # 4										
SIEVE # 40										
SIEVE # 60										
SIEVE 1"										
SIEVE 1-1/2"										
SIEVE 2"										
SIEVE 3"										
SIEVE 3/4"										
SIEVE 3/8"										
TOTAL ORGANIC CARBON MG/KG										

TABLE 2-1

SITE 28
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR SURFACE SOIL
NSWC WHITE OAK, SILVER SPRING, MARYLAND

LOCATION	28PCB08	28PCB09	28PCB09	28PCB09	28PCB09	28PCB10	28PCB10	28PCB11	28PCB11
SAMPLE ID:	28-PCB-08-0204	28-PCB-09	28-PCB-09-0204	28-PCB-09-AVG	28-PCB-09-D	28-PCB-10	28-PCB-10-0204	28-PCB-11	28-PCB-11-0204
DATE:	04/06/99	04/06/99	04/06/99	04/06/99	04/06/99	04/06/99	04/06/99	04/06/99	04/06/99
TOP DEPTH:	0.8	0	1	0	0	0	0.5	0	0.5
BOTTOM DEPTH:	1	0.5	1.25	0.5	0.5	0.5	1	0.5	0.83
Volatile Organics (ug/kg)									
ACETONE									
CHLOROBENZENE									
Semivolatile Organics (ug/kg)									
1,2-DICHLOROBENZENE									
1,3-DICHLOROBENZENE									
1,4-DICHLOROBENZENE									
2,4-DIMETHYLPHENOL									
2-METHYLNAPHTHALENE									
2-METHYLPHENOL									
4-METHYLPHENOL									
ACENAPHTHENE									
ANTHRACENE									
BENZO(A)ANTHRACENE									
BENZO(A)PYRENE									
BENZO(B)FLUORANTHENE									
BENZO(G,H,I)PERYLENE									
BENZO(K)FLUORANTHENE									
BIS(2-ETHYLHEXYL)PHTHALATE									
CARBAZOLE									
CHRYSENE									
DI-N-BUTYL PHTHALATE									
DIBENZO(A,H)ANTHRACENE									
DIBENZOFURAN									
DIETHYL PHTHALATE									
FLUORANTHENE									
FLUORENE									
HEXACHLOROBENZENE									
INDENO(1,2,3-CD)PYRENE									
NAPHTHALENE									
PHENANTHRENE									
PHENOL									
PYRENE									
OV 2-BUTANONE									
Pesticides/PCBs (ug/kg)									
4,4'-DDE									
AROCLOR-1248	40 UL	80 U	44 U	145 U	210 U	42 U	41 UJ	230 U	220 U
AROCLOR-1254	40 UL	2400 J	180 J	2950 J	3500 J	140 J	82 J	460 J	620 J
AROCLOR-1260	40 UL	3000 J	210	3750 J	4500 J	160 J	99 J	450 J	570
DIELDRIN									
Inorganics (mg/kg)									
ALUMINUM									
ARSENIC									
BARIUM									
CALCIUM									
CHROMIUM									

TABLE 2-1

SITE 28
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR SURFACE SOIL
NSWC WHITE OAK, SILVER SPRING, MARYLAND

LOCATION	28PCB08	28PCB09	28PCB09	28PCB09	28PCB09	28PCB10	28PCB10	28PCB11	28PCB11
SAMPLE ID:	28-PCB-08-0204	28-PCB-09	28-PCB-09-0204	28-PCB-09-AVG	28-PCB-09-D	28-PCB-10	28-PCB-10-0204	28-PCB-11	28-PCB-11-0204
DATE:	04/06/99	04/06/99	04/06/99	04/06/99	04/06/99	04/06/99	04/06/99	04/06/99	04/06/99
TOP DEPTH:	0.8	0	1	0	0	0	0.5	0	0.5
BOTTOM DEPTH:	1	0.5	1.25	0.5	0.5	0.5	1	0.5	0.83
COBALT									
COPPER									
CYANIDE									
IRON									
LEAD									
MAGNESIUM									
MANGANESE									
MERCURY									
NICKEL									
POTASSIUM									
SELENIUM									
VANADIUM									
ZINC									
Miscellaneous Parameters									
CATION EXCHANGE CAPACITY MEQ/1									
PH S.U.									
SIEVE # 10									
SIEVE # 140									
SIEVE # 20									
SIEVE # 200									
SIEVE # 4									
SIEVE # 40									
SIEVE # 60									
SIEVE 1"									
SIEVE 1-1/2"									
SIEVE 2"									
SIEVE 3"									
SIEVE 3/4"									
SIEVE 3/8"									
TOTAL ORGANIC CARBON MG/KG									

TABLE 2-1

SITE 28
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR SURFACE SOIL
NSWC WHITE OAK, SILVER SPRING, MARYLAND

LOCATION	28PCB12	28PCB12	28PCB13	28PCB13	28PCB14	28PCB14	28SB01	28SB02	28SB03
SAMPLE ID:	28-PCB-12	28-PCB-12-0204	28-PCB-13	28-PCB-13-0204	28-PCB-14	28-PCB-14-0204	28-SS-01(OLD)	28-SS-02(OLD)	28-SS-03(OLD)
DATE:	04/06/99	04/06/99	04/06/99	04/06/99	04/06/99	04/06/99	10/23/97	10/23/97	10/23/97
TOP DEPTH:	0	3	0	0.5	0	0.5	0	0	0.5
BOTTOM DEPTH:	0.5	3	0.5	1	0.5	1	1	2	2
Volatile Organics (ug/kg)									
ACETONE							11 U	12 U	12 U
CHLOROBENZENE							11 U	12 U	12 U
Semivolatile Organics (ug/kg)									
1,2-DICHLOROBENZENE							370 U	400 U	410 U
1,3-DICHLOROBENZENE							370 U	400 U	410 U
1,4-DICHLOROBENZENE							370 U	400 U	410 U
2,4-DIMETHYLPHENOL							370 U	400 U	410 U
2-METHYLNAPHTHALENE							370 U	400 U	410 U
2-METHYLPHENOL							370 U	400 U	410 U
4-METHYLPHENOL							370 U	400 U	410 U
ACENAPHTHENE							370 U	400 U	410 U
ANTHRACENE							370 U	400 U	410 U
BENZO(A)ANTHRACENE							370 U	400 U	410 U
BENZO(A)PYRENE							370 U	400 U	410 U
BENZO(B)FLUORANTHENE							370 U	400 U	410 U
BENZO(G,H,I)PERYLENE							370 U	400 U	410 U
BENZO(K)FLUORANTHENE							370 U	400 U	410 U
BIS(2-ETHYLHEXYL)PHTHALATE							370 U	400 U	410 U
CARBAZOLE							370 U	400 U	410 U
CHRYSENE							370 U	400 U	410 U
DI-N-BUTYL PHTHALATE							370 U	45 J	410 U
DIBENZO(A,H)ANTHRACENE							370 U	400 U	410 U
DIBENZOFURAN							370 U	400 U	410 U
DIETHYL PHTHALATE							370 U	400 U	410 U
FLUORANTHENE							370 U	400 U	410 U
FLUORENE							370 U	400 U	410 U
HEXACHLOROBENZENE							370 U	400 U	410 U
INDENO(1,2,3-CD)PYRENE							370 U	400 U	410 U
NAPHTHALENE							370 U	400 U	410 U
PHENANTHRENE							370 U	400 U	410 U
PHENOL							370 U	400 U	410 U
PYRENE							370 U	400 U	410 U
OV 2-BUTANONE							11 UJ	12 UJ	12 UJ
Pesticides/PCBs (ug/kg)									
4,4'-DDE							3.7 U	4 UL	4 U
AROCLOR-1248	200 U	38 UL	49 U	40 U	45 U	39 UJ	37 U	40 UL	40 U
AROCLOR-1254	400 J	20 J	120 J	40 U	150 J	39 UJ	37 U	40 UL	40 U
AROCLOR-1260	490 J	25 J	150 J	7.1 J	150 J	6.6 J	71	12 J	19 J
DIELDRIN							3.7 U	0.34 J	4 U
Inorganics (mg/kg)									
ALUMINUM							32200	24700	24800
ARSENIC							6.6 K	6.6 K	5.6 K
BARIUM							33.2	63.5	66.5
CALCIUM							82.5 B	1180 J	624 J
CHROMIUM							42.4 K	32.1 K	28.5 K

TABLE 2-1

SITE 28
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR SURFACE SOIL
NSWC WHITE OAK, SILVER SPRING, MARYLAND

LOCATION	28PCB12	28PCB12	28PCB13	28PCB13	28PCB14	28PCB14	28SB01	28SB02	28SB03
SAMPLE ID:	28-PCB-12	28-PCB-12-0204	28-PCB-13	28-PCB-13-0204	28-PCB-14	28-PCB-14-0204	28-SS-01(OLD)	28-SS-02(OLD)	28-SS-03(OLD)
DATE:	04/06/99	04/06/99	04/06/99	04/06/99	04/06/99	04/06/99	10/23/97	10/23/97	10/23/97
TOP DEPTH:	0	3	0	0.5	0	0.5	0	0	0.5
BOTTOM DEPTH:	0.5	3	0.5	1	0.5	1	1	2	2
COBALT							3 K	6.3	6.2
COPPER							15.5 J	15 J	12.5 J
CYANIDE							0.21 U	0.28 U	0.25 U
IRON							30300	32900	29200
LEAD							8.5 K	15.5 K	11.8 K
MAGNESIUM							650 K	2400	2180
MANGANESE							24.3	121	132
MERCURY							0.05	0.06	0.05
NICKEL							8.2 J	13.5 J	12.9 J
POTASSIUM							549 K	1190 K	1050 K
SELENIUM							0.72 J	0.53 UJ	0.55 UJ
VANADIUM							56.9 K	48.5 K	43.6 K
ZINC							16.5 J	40.4 J	38.1 J
Miscellaneous Parameters									
CATION EXCHANGE CAPACITY MEQ/1									
PH S.U.							4.67	4.93	5.05
SIEVE # 10									
SIEVE # 140									
SIEVE # 20									
SIEVE # 200									
SIEVE # 4									
SIEVE # 40									
SIEVE # 60									
SIEVE 1"									
SIEVE 1-1/2"									
SIEVE 2"									
SIEVE 3"									
SIEVE 3/4"									
SIEVE 3/8"									
TOTAL ORGANIC CARBON MG/KG									

TABLE 2-1

SITE 28
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR SURFACE SOIL
NSWC WHITE OAK, SILVER SPRING, MARYLAND

LOCATION	28SB04	28SB04A	28SB04B	28SB05	28SB06	28SB07	28SB07A	28SB07B	28SB07B
SAMPLE ID:	28-SB-4(2)(OLD)	28-SB-04A	28-SB-04B	28-SB-5(2)(OLD)	28-SB-6(2)(OLD)	28-SB-07(OLD)	28-SB-07A	28-SB-07B	28-SB-07B-AVG
DATE:	10/24/97	04/06/99	04/06/99	10/24/97	10/24/97	10/23/97	04/06/99	04/06/99	04/06/99
TOP DEPTH:	0	0	0	0	0	0	0	0	0
BOTTOM DEPTH:	2	0.5	0.5	2	2	2	0.5	0.5	0.5
Volatile Organics (ug/kg)									
ACETONE	79 J			32 J	11 U	11 U			
CHLOROBENZENE	77			11 U	11 U	11 U			
Semivolatile Organics (ug/kg)									
1,2-DICHLOROBENZENE	86 J	12000 U	400 U	370 UJ	360 UJ	380 U	400 U	400 U	400 U
1,3-DICHLOROBENZENE	520 J	12000 U	400 U	370 UJ	360 UJ	380 U	400 U	400 U	400 U
1,4-DICHLOROBENZENE	1000 J	12000 U	400 U	370 UJ	360 UJ	380 U	400 U	400 U	400 U
2,4-DIMETHYLPHENOL	390 UJ	12000 U	400 U	370 UJ	360 UJ	380 U	400 U	400 U	400 U
2-METHYLNAPHTHALENE	80 J	12000 U	400 U	370 UJ	360 UJ	380 U	400 U	400 U	400 U
2-METHYLPHENOL	390 UJ	12000 U	400 U	370 UJ	360 UJ	380 U	400 U	400 U	400 U
4-METHYLPHENOL	390 UJ	12000 U	400 U	370 UJ	360 UJ	380 U	400 U	400 U	400 U
ACENAPHTHENE	120 J	12000 U	400 U	370 UJ	360 UJ	380 U	400 U	100 J	100 J
ANTHRACENE	140 J	12000 U	400 U	370 UJ	360 UJ	380 U	400 U	120 J	120 J
BENZO(A)ANTHRACENE	350 J	12000 U	180 J	370 UJ	360 UJ	380 U	160 J	460	310 J
BENZO(A)PYRENE	250 J	12000 U	220 J	370 UJ	360 UJ	380 U	160 J	470	320 J
BENZO(B)FLUORANTHENE	230 J	1200 J	340 J	370 UJ	360 UJ	380 U	210 J	610	420 J
BENZO(G,H,I)PERYLENE	190 J	12000 U	130 J	370 UJ	360 UJ	380 U	100 J	310 J	215 J
BENZO(K)FLUORANTHENE	210 J	12000 U	110 J	370 UJ	360 UJ	380 U	85 J	210 J	145.5 J
BIS(2-ETHYLHEXYL)PHTHALATE	390 UJ	12000 U	400 U	370 UJ	360 UJ	380 U	47 J	58 J	62 J
CARBAZOLE	69 J	12000 U	400 U	370 UJ	360 UJ	380 U	400 U	140 J	90.5 J
CHRYSENE	340 J	12000 U	260 J	370 UJ	360 UJ	380 U	190 J	550	375 J
DI-N-BUTYL PHTHALATE	390 UJ	12000 U	400 U	370 UJ	360 UJ	46 J	400 U	400 U	400 U
DIBENZO(A,H)ANTHRACENE	390 UJ	12000 U	400 U	370 UJ	360 UJ	380 U	400 U	79 J	79 J
DIBENZOFURAN	39 J	12000 U	400 U	370 UJ	360 UJ	380 U	400 U	400 U	400 U
DIETHYL PHTHALATE	390 UJ	12000 U	400 U	370 UJ	360 UJ	380 U	400 U	400 U	400 U
FLUORANTHENE	730 J	12000 U	420	370 UJ	360 UJ	66 J	460	1500	980
FLUORENE	98 J	12000 U	400 U	370 UJ	360 UJ	380 U	400 U	73 J	73 J
HEXACHLOROBENZENE	390 UJ	4600 J	400 U	370 UJ	360 UJ	380 U	400 U	400 U	400 U
INDENO(1,2,3-CD)PYRENE	180 J	12000 U	170 J	370 UJ	360 UJ	380 U	120 J	340 J	240 J
NAPHTHALENE	84 J	12000 U	400 U	370 UJ	360 UJ	380 U	400 U	400 U	400 U
PHENANTHRENE	610 J	12000 U	240 J	370 UJ	360 UJ	55 J	260 J	1000	640 J
PHENOL	390 UJ	12000 U	400 U	370 UJ	360 UJ	380 U	400 U	400 U	400 U
PYRENE	660 J	12000 U	340 J	370 UJ	360 UJ	62 J	390 J	1300	830 J
OV 2-BUTANONE	10 J			11 U	11 U	11 U			
Pesticides/PCBs (ug/kg)									
4,4'-DDE	3.9 UJ			3.7 UJ	3.6 UJ	3.8 U			
AROCLOR-1248	39 UJ			37 UJ	36 UJ	38 U			
AROCLOR-1254	39 UJ			37 UJ	36 UJ	38 U			
AROCLOR-1260	760 J			46 J	11 J	46			
DIELDRIN	3.9 UJ			3.7 UJ	3.6 UJ	3.8 U			
Inorganics (mg/kg)									
ALUMINUM	17100			20900	26200	19300			
ARSENIC	3.8			5.1	12	4.1 K			
BARIUM	74.1			64.4	26	27.6			
CALCIUM	1200 J			927 J	95.5 B	326 J			
CHROMIUM	18.7 J			23.3 J	73.6 J	27.2 K			

TABLE 2-1

SITE 28
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR SURFACE SOIL
NSWC WHITE OAK, SILVER SPRING, MARYLAND

LOCATION	28SB04	28SB04A	28SB04B	28SB05	28SB06	28SB07	28SB07A	28SB07B	28SB07B
SAMPLE ID:	28-SB-4(2)(OLD)	28-SB-04A	28-SB-04B	28-SB-5(2)(OLD)	28-SB-6(2)(OLD)	28-SB-07(OLD)	28-SB-07A	28-SB-07B	28-SB-07B-AVG
DATE:	10/24/97	04/06/99	04/06/99	10/24/97	10/24/97	10/23/97	04/06/99	04/06/99	04/06/99
TOP DEPTH:	0	0	0	0	0	0	0	0	0
BOTTOM DEPTH:	2	0.5	0.5	2	2	2	0.5	0.5	0.5
COBALT	5.6			5.6	2.4 B	1.9 B			
COPPER	9.4 J			9.1 J	19.5 J	10.9 J			
CYANIDE						0.25 U			
IRON	16000			21100	36400	21000			
LEAD	17.4 J			10.1 J	8.3 J	7.3 K			
MAGNESIUM	1450 J			1670 J	541 J	603 K			
MANGANESE	148 J			91.3 J	18.3 J	27.2			
MERCURY	0.05			0.06	0.03	0.03			
NICKEL	10			11.2	6.6	5.1 J			
POTASSIUM	794 J			1170 J	503 J	478 K			
SELENIUM	1 K			0.52 U	2.6 L	1 J			
VANADIUM	28.8			37.3	61.2	38.1 K			
ZINC	45.8 J			34 J	13.3 J	11.7 J			
Miscellaneous Parameters									
CATION EXCHANGE CAPACITY MEQ/1									
PH S.U.						5.09			
SIEVE # 10									
SIEVE # 140									
SIEVE # 20									
SIEVE # 200									
SIEVE # 4									
SIEVE # 40									
SIEVE # 60									
SIEVE 1"									
SIEVE 1-1/2"									
SIEVE 2"									
SIEVE 3"									
SIEVE 3/4"									
SIEVE 3/8"									
TOTAL ORGANIC CARBON MG/KG									

TABLE 2-1

SITE 28
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR SURFACE SOIL
NSWC WHITE OAK, SILVER SPRING, MARYLAND

LOCATION	28SB07B	28SB07C	28SB08	28SB09	28SS100	28SS101	28SS102	28SS103	28SS104	28SS105	28SS106
SAMPLE ID:	28-SB-07B-D	28-SB-07C	28-SB-08(OLD)	28-SB-09(OLD)	28SS100	28SS101	28SS102	28SS103	28SS104	28SS105	28SS106
DATE:	04/06/99	04/06/99	10/23/97	10/23/97	05/02/00	05/02/00	05/02/00	05/02/00	05/02/00	05/02/00	05/02/00
TOP DEPTH:	0	0	0	0	0	0	0	0	0	0	0
BOTTOM DEPTH:	0.5	0.5	2	2	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Volatile Organics (ug/kg)											
ACETONE			120 J	69 J							
CHLOROBENZENE			12 U	12 U							
Semivolatile Organics (ug/kg)											
1,2-DICHLOROBENZENE	400 U	400 U	390 U	400 U							
1,3-DICHLOROBENZENE	400 U	400 U	390 U	400 U							
1,4-DICHLOROBENZENE	400 U	400 U	390 U	400 U							
2,4-DIMETHYLPHENOL	400 U	400 U	190 J	400 U							
2-METHYLNAPHTHALENE	400 U	400 U	390 U	400 U							
2-METHYLPHENOL	400 U	400 U	170 J	400 U							
4-METHYLPHENOL	400 U	400 U	1600	400 U							
ACENAPHTHENE	400 U	79 J	48 J	400 U							
ANTHRACENE	400 U	120 J	390 U	400 U							
BENZO(A)ANTHRACENE	160 J	650	66 J	400 U							
BENZO(A)PYRENE	170 J	810	68 J	400 U							
BENZO(B)FLUORANTHENE	230 J	1100	64 J	400 U							
BENZO(G,H,I)PERYLENE	120 J	550	390 U	400 U							
BENZO(K)FLUORANTHENE	81 J	370 J	66 J	400 U							
BIS(2-ETHYLHEXYL)PHTHALATE	66 J	250 J	46 B	400 U							
CARBAZOLE	41 J	140 J	390 U	400 U							
CHRYSENE	200 J	850	77 J	400 U							
DI-N-BUTYL PHTHALATE	400 U	400 U	42 J	100 J							
DIBENZO(A,H)ANTHRACENE	400 U	130 J	390 U	400 U							
DIBENZOFURAN	400 U	400 U	390 U	400 U							
DIETHYL PHTHALATE	400 U	400 U	390 U	42 J							
FLUORANTHENE	460	1900	170 J	400 U							
FLUORENE	400 U	56 J	390 U	400 U							
HEXACHLOROBENZENE	400 U	400 U	390 U	400 U							
INDENO(1,2,3-CD)PYRENE	140 J	600	390 U	400 U							
NAPHTHALENE	400 U	400 U	390 U	400 U							
PHENANTHRENE	280 J	950	160 J	400 U							
PHENOL	400 U	400 U	330 J	400 U							
PYRENE	360 J	1600	180 J	41 J							
OV 2-BUTANONE			18 J	7 J							
Pesticides/PCBs (ug/kg)											
4,4'-DDE			0.71 J	4 UL							
AROCLOR-1248			39 U	40 UL	7800 U	19000 U	7400 U	390000 U	1900 U	2000 U	390 U
AROCLOR-1254			39 U	40 UL	8500	74000	8800	390000 U	4500	5700	850
AROCLOR-1260			58	49 L	8300	53000	18000	2300000	14000	7500	2000
DIELDRIN			3.9 U	4 UL							
Inorganics (mg/kg)											
ALUMINUM			18600	19900							
ARSENIC			3.9 B	5.2 K							
BARIUM			58.2	65.8							
CALCIUM			1190 J	1180 J							
CHROMIUM			20.5 K	23.5 K							

TABLE 2-1

SITE 28
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR SURFACE SOIL
NSWC WHITE OAK, SILVER SPRING, MARYLAND

LOCATION	28SB07B	28SB07C	28SB08	28SB09	28SS100	28SS101	28SS102	28SS103	28SS104	28SS105	28SS106
SAMPLE ID:	28-SB-07B-D	28-SB-07C	28-SB-08(OLD)	28-SB-09(OLD)	28SS100	28SS101	28SS102	28SS103	28SS104	28SS105	28SS106
DATE:	04/06/99	04/06/99	10/23/97	10/23/97	05/02/00	05/02/00	05/02/00	05/02/00	05/02/00	05/02/00	05/02/00
TOP DEPTH:	0	0	0	0	0	0	0	0	0	0	0
BOTTOM DEPTH:	0.5	0.5	2	2	0.5	0.5	0.5	0.5	0.5	0.5	0.5
COBALT			5.7	5.6							
COPPER			11 J	11.7 J							
CYANIDE			0.23	0.28 U							
IRON			21700	21400							
LEAD			24.7 K	24.3 K							
MAGNESIUM			1340 K	1610 K							
MANGANESE			150	63.7							
MERCURY			0.06	0.07							
NICKEL			8.8 J	9.8 J							
POTASSIUM			754 K	880 K							
SELENIUM			0.74 J	0.73 J							
VANADIUM			31.8 K	37.5 K							
ZINC			55.5 J	52 J							
Miscellaneous Parameters											
CATION EXCHANGE CAPACITY MEQ/1											
PH S.U.			6.8	6.98							
SIEVE # 10											
SIEVE # 140											
SIEVE # 20											
SIEVE # 200											
SIEVE # 4											
SIEVE # 40											
SIEVE # 60											
SIEVE 1"											
SIEVE 1-1/2"											
SIEVE 2"											
SIEVE 3"											
SIEVE 3/4"											
SIEVE 3/8"											
TOTAL ORGANIC CARBON MG/KG					14100	19400	12300	19300	16000	13900	10200

TABLE 2-1

SITE 28
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR SURFACE SOIL
NSWC WHITE OAK, SILVER SPRING, MARYLAND

LOCATION	28SS107	28SS107	28SS107	28SS108	28SS201	28SS202	28SS203	28SS204	28SS205	28SS205	28SS205
SAMPLE ID:	28SS107	28SS107-AVG	28SS107-D	28SS108	28-SS-201	28-SS-202	28-SS-203	28-SS-204	28-SS-205	28-SS-205-AVG	28-SS-205-D
DATE:	05/02/00	05/02/00	05/02/00	05/02/00	08/14/00	08/14/00	08/14/00	08/14/00	08/14/00	08/14/00	08/14/00
TOP DEPTH:	0	0	0	0	0	0	0	0	0	0	0
BOTTOM DEPTH:	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Volatile Organics (ug/kg)											
ACETONE											
CHLOROBENZENE											
Semivolatile Organics (ug/kg)											
1,2-DICHLOROBENZENE											
1,3-DICHLOROBENZENE											
1,4-DICHLOROBENZENE											
2,4-DIMETHYLPHENOL											
2-METHYLNAPHTHALENE											
2-METHYLPHENOL											
4-METHYLPHENOL											
ACENAPHTHENE											
ANTHRACENE											
BENZO(A)ANTHRACENE											
BENZO(A)PYRENE											
BENZO(B)FLUORANTHENE											
BENZO(G,H,I)PERYLENE											
BENZO(K)FLUORANTHENE											
BIS(2-ETHYLHEXYL)PHTHALATE											
CARBAZOLE											
CHRYSENE											
DI-N-BUTYL PHTHALATE											
DIBENZO(A,H)ANTHRACENE											
DIBENZOFURAN											
DIETHYL PHTHALATE											
FLUORANTHENE											
FLUORENE											
HEXACHLOROBENZENE											
INDENO(1,2,3-CD)PYRENE											
NAPHTHALENE											
PHENANTHRENE											
PHENOL											
PYRENE											
OV 2-BUTANONE											
Pesticides/PCBs (ug/kg)											
4,4'-DDE											
AROCLOR-1248	760 U	770 U	780 U	170 U	2500 UJ	2500 UJ	1600 UJ	820 UJ	820 UJ	820 UJ	820 UJ
AROCLOR-1254	1900	1850	1800	960	2500 UJ	2500 UJ	1600 UJ	820 UJ	820 UJ	820 UJ	820 UJ
AROCLOR-1260	3800	3600	3400	1400	17000 J	12000 J	11000 J	2800 J	4700 J	4350 J	4000 J
DIELDRIN											
Inorganics (mg/kg)											
ALUMINUM											
ARSENIC											
BARIUM											
CALCIUM											
CHROMIUM											

TABLE 2-1

SITE 28
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR SURFACE SOIL
NSWC WHITE OAK, SILVER SPRING, MARYLAND

LOCATION	28SS107	28SS107	28SS107	28SS108	28SS201	28SS202	28SS203	28SS204	28SS205	28SS205	28SS205
SAMPLE ID:	28SS107	28SS107-AVG	28SS107-D	28SS108	28-SS-201	28-SS-202	28-SS-203	28-SS-204	28-SS-205	28-SS-205-AVG	28-SS-205-D
DATE:	05/02/00	05/02/00	05/02/00	05/02/00	08/14/00	08/14/00	08/14/00	08/14/00	08/14/00	08/14/00	08/14/00
TOP DEPTH:	0	0	0	0	0	0	0	0	0	0	0
BOTTOM DEPTH:	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
COBALT											
COPPER											
CYANIDE											
IRON											
LEAD											
MAGNESIUM											
MANGANESE											
MERCURY											
NICKEL											
POTASSIUM											
SELENIUM											
VANADIUM											
ZINC											
Miscellaneous Parameters											
CATION EXCHANGE CAPACITY MEQ/1					15		10	22	22		
PH S.U.											
SIEVE # 10					20		14	22	4		
SIEVE # 140					3		3	9	5		
SIEVE # 20					24		30	14	28		
SIEVE # 200					9		7	9	33		
SIEVE # 4					11		5	18	1		
SIEVE # 40					11		20	11	15		
SIEVE # 60					10		13	3	15		
SIEVE 1"					0		0	0	0		
SIEVE 1-1/2"					0		0	0	0		
SIEVE 2"					0		0	0	0		
SIEVE 3"					0		0	0	0		
SIEVE 3/4"					3		3	8	0		
SIEVE 3/8"					9		6	10	0		
TOTAL ORGANIC CARBON MG/KG	10000	11450	12900	24700	1400		1200	1200	1500		

TABLE 2-1

SITE 28
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR SURFACE SOIL
NSWC WHITE OAK, SILVER SPRING, MARYLAND

LOCATION	28SS206	28SS207	28SS208	28SS209
SAMPLE ID:	28-SS-206	28-SS-207	28-SS-208	28-SS-209
DATE:	08/14/00	08/14/00	08/14/00	08/14/00
TOP DEPTH:	0	0	0	0
BOTTOM DEPTH:	0.5	0.5	0.5	0.5
Volatile Organics (ug/kg)				
ACETONE				
CHLOROBENZENE				
Semivolatile Organics (ug/kg)				
1,2-DICHLOROBENZENE				
1,3-DICHLOROBENZENE				
1,4-DICHLOROBENZENE				
2,4-DIMETHYLPHENOL				
2-METHYLNAPHTHALENE				
2-METHYLPHENOL				
4-METHYLPHENOL				
ACENAPHTHENE				
ANTHRACENE				
BENZO(A)ANTHRACENE				
BENZO(A)PYRENE				
BENZO(B)FLUORANTHENE				
BENZO(G,H,I)PERYLENE				
BENZO(K)FLUORANTHENE				
BIS(2-ETHYLHEXYL)PHTHALATE				
CARBAZOLE				
CHRYSENE				
DI-N-BUTYL PHTHALATE				
DIBENZO(A,H)ANTHRACENE				
DIBENZOFURAN				
DIETHYL PHTHALATE				
FLUORANTHENE				
FLUORENE				
HEXACHLOROBENZENE				
INDENO(1,2,3-CD)PYRENE				
NAPHTHALENE				
PHENANTHRENE				
PHENOL				
PYRENE				
OV 2-BUTANONE				
Pesticides/PCBs (ug/kg)				
4,4'-DDE				
AROCLOR-1248	820 UJ	3300 UJ	3300 UJ	330 UJ
AROCLOR-1254	820 UJ	3300 UJ	3300 UJ	330 UJ
AROCLOR-1260	4700 J	11000 J	30000 J	1700 J
DIELDRIN				
Inorganics (mg/kg)				
ALUMINUM				
ARSENIC				
BARIUM				
CALCIUM				
CHROMIUM				

TABLE 2-1

SITE 28
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR SURFACE SOIL
NSWC WHITE OAK, SILVER SPRING, MARYLAND

LOCATION	28SS206	28SS207	28SS208	28SS209
SAMPLE ID:	28-SS-206	28-SS-207	28-SS-208	28-SS-209
DATE:	08/14/00	08/14/00	08/14/00	08/14/00
TOP DEPTH:	0	0	0	0
BOTTOM DEPTH:	0.5	0.5	0.5	0.5
COBALT				
COPPER				
CYANIDE				
IRON				
LEAD				
MAGNESIUM				
MANGANESE				
MERCURY				
NICKEL				
POTASSIUM				
SELENIUM				
VANADIUM				
ZINC				
Miscellaneous Parameters				
CATION EXCHANGE CAPACITY MEQ/1			44	17
PH S.U.				
SIEVE # 10			14	13
SIEVE # 140			5	4
SIEVE # 20			23	25
SIEVE # 200			20	22
SIEVE # 4			3	3
SIEVE # 40			15	13
SIEVE # 60			16	12
SIEVE 1"			0	0
SIEVE 1-1/2"			0	0
SIEVE 2"			0	0
SIEVE 3"			0	0
SIEVE 3/4"			3	4
SIEVE 3/8"			1	3
TOTAL ORGANIC CARBON MG/KG			1800	1500

U - Chemical was not detected at the numerical detection limit (quantitation limit).

B - Chemical was detected but the result is considered a false positive as a consequence of either laboratory or field blank contamination.

J - Chemical was detected, however, the associated numerical result is estimated

K - Chemical was detected, however the associated numerical result is considered biased high.

L - Chemical was detected, however the associated numerical result is considered biased low.

UJ - Chemical was not detected, however the numerical detection limit is regarded as inaccurate or imprecise.

UL - Chemical was not detected, however the numerical detection limit is regarded as having a low bias.

TABLE 2-2

SITE 28
SUMMARY OF POSITIVE ANALYTIC RESULTS FOR SUBSURFACE SOIL
NSWC WHITE OAK, SILVER SPRING, MARYLAND

LOCATION:	28PCB01	28PCB02	28PCB03	28PCB04	28PCB04	28PCB04	28PCB05	28PCB06	28PCB07	28SB01
SAMPLE ID:	28-PCB-01-0204	28-PCB-02-0204	28-PCB-03-0204	28-PCB-04-0204	28-PCB-04-0204-AVG	28-PCB-04-0204-D	28-PCB-05-0204	28-PCB-06-0204	28-PCB-07-0204	28-SB-01(OLD)
DATE	04/06/99	04/06/99	04/06/99	04/06/99	04/06/99	04/06/99	04/06/99	04/06/99	04/06/99	10/23/97
TOP DEPTH	2	2	2	2	2	2	2	2	2	2
BOTTOM DEPTH	2.5	4	3	3	3	3	4	4	4	4
Volatile Organics (ug/kg)										
CHLOROBENZENE										11 U
Semivolatile Organics (ug/kg)										
1,2,4-TRICHLOROBENZENE										370 U
1,4-DICHLOROBENZENE										370 U
4-METHYLPHENOL										370 U
ACENAPHTHENE										370 U
ANTHRACENE										370 U
BENZO(A)ANTHRACENE										370 U
BENZO(A)PYRENE										370 U
BENZO(B)FLUORANTHENE										370 U
BENZO(G,H,I)PERYLENE										370 U
BENZO(K)FLUORANTHENE										370 U
CARBAZOLE										370 U
CHRYSENE										370 U
DI-N-BUTYL PHTHALATE										250 J
DIBENZOFURAN										370 U
FLUORANTHENE										370 U
FLUORENE										370 U
INDENO(1,2,3-CD)PYRENE										370 U
PHENANTHRENE										370 U
PYRENE										370 U
Pesticides/PCBs (ug/kg)										
4,4'-DDE										3.7 U
AROCLOR-1248	40 U	41 UJ	37 U	37 U	37.5 U	38 U	37 U	37 UL	43 U	37 U
AROCLOR-1254	25 J	74 J	61 J	9.7 J	11.35 J	13 J	17 J	37 UL	43 U	37 U
AROCLOR-1260	35 J	66 J	75	9.9 J	9.8 J	9.7 J	14 J	37 UL	43 U	13 J
DELTA-BHC										1.8 U
Inorganics (mg/kg)										
ALUMINUM										17900
ARSENIC										6.9 K
BARIUM										19.2
CALCIUM										74 B
CHROMIUM										41 K
COBALT										1.7 B
COPPER										15 J
CYANIDE										0.19 U
IRON										25500
LEAD										5.8 K
MAGNESIUM										374 K
MANGANESE										89.1
MERCURY										0.03
NICKEL										6.5 J
POTASSIUM										314 K
SELENIUM										0.5 UJ
VANADIUM										36.4 K
ZINC										10.6 J
Miscellaneous Parameters										
PH S.U.										4.83

TABLE 2-2

SITE 28
SUMMARY OF POSITIVE ANALYTIC RESULTS FOR SUBSURFACE SOIL
NSWC WHITE OAK, SILVER SPRING, MARYLAND

LOCATION:	28SB02	28SB03	28SB04	28SB05	28SB06	28SB07	28SB08	28SB09
SAMPLE ID:	28-SB-02(OLD)	28-SB-03(OLD)	28-SB-4(4)(OLD)	28-SB-5(4)(OLD)	28-SB-6(4)(OLD)	28-SS-07(OLD)	28-SS-08(OLD)	28-SS-09(OLD)
DATE	10/23/97	10/23/97	10/24/97	10/24/97	10/24/97	10/23/97	10/23/97	10/23/97
TOP DEPTH	2	2	3	2	2	2	2	2
BOTTOM DEPTH	4	4	4	4	4	4	4	4
Volatile Organics (ug/kg)								
CHLOROBENZENE	11 U	12 U	15	11 U	11 U	11 U	11 U	12 U
Semivolatile Organics (ug/kg)								
1,2,4-TRICHLOROBENZENE	370 U	390 U	52 J	360 UJ	360 UJ	390 U	360 U	410 U
1,4-DICHLOROBENZENE	370 U	390 U	49 J	360 UJ	360 UJ	390 U	360 U	410 U
4-METHYLPHENOL	370 U	390 U	400 UJ	360 UJ	360 UJ	390 U	46 J	410 U
ACENAPHTHENE	370 U	390 U	400 UJ	360 UJ	360 UJ	280 J	360 U	410 U
ANTHRACENE	370 U	390 U	400 UJ	360 UJ	360 UJ	350 J	360 U	410 U
BENZO(A)ANTHRACENE	370 U	390 U	400 UJ	360 UJ	360 UJ	2000	77 J	57 J
BENZO(A)PYRENE	370 U	390 U	400 UJ	360 UJ	360 UJ	2500	78 J	59 J
BENZO(B)FLUORANTHENE	370 U	390 U	400 UJ	360 UJ	360 UJ	2400	80 J	79 J
BENZO(G,H,I)PERYLENE	370 U	390 U	400 UJ	360 UJ	360 UJ	1900	360 U	410 U
BENZO(K)FLUORANTHENE	370 U	390 U	400 UJ	360 UJ	360 UJ	2500	66 J	51 J
CARBAZOLE	370 U	390 U	400 UJ	360 UJ	360 UJ	190 J	360 U	410 U
CHRYSENE	370 U	390 U	400 UJ	360 UJ	360 UJ	2300	92 J	74 J
DI-N-BUTYL PHTHALATE	38 J	57 J	400 UJ	360 UJ	360 UJ	390 U	47 J	99 J
DIBENZOFURAN	370 U	390 U	400 UJ	360 UJ	360 UJ	71 J	360 U	410 U
FLUORANTHENE	370 U	390 U	400 UJ	360 UJ	360 UJ	4000	200 J	120 J
FLUORENE	370 U	390 U	400 UJ	360 UJ	360 UJ	170 J	360 U	410 U
INDENO(1,2,3-CD)PYRENE	370 U	390 U	400 UJ	360 UJ	360 UJ	1600	360 U	410 U
PHENANTHRENE	370 U	390 U	400 UJ	360 UJ	360 UJ	2600	140 J	82 J
PYRENE	370 U	49 J	400 UJ	360 UJ	360 UJ	5100	210 J	130 J
Pesticides/PCBs (ug/kg)								
4,4'-DDE	3.7 U	3.9 U	3.9 UJ	3.6 UJ	3.6 UJ	3.7 U	0.58 J	4 U
AROCLOR-1248	37 U	1400 J	39 UJ	36 UJ	36 UJ	37 U	36 U	40 U
AROCLOR-1254	37 U	39 U	39 UJ	36 UJ	36 UJ	37 U	36 U	40 U
AROCLOR-1260	6.4 J	560 J	210 J	5.9 J	3.6 J	210	42 J	4700
DELTA-BHC	1.8 U	1.9 U	2 UJ	1.8 UJ	1.8 UJ	0.8 J	1.8 U	2 U
Inorganics (mg/kg)								
ALUMINUM	10900	16200	16600	12100	15200	3670	9180	16700
ARSENIC	2.1 B	3.4 B	2.8	3.6	6.9	1.9 B	4.8 K	4.7 K
BARIUM	31.1	62.9	64.7	24.8	20.8	17.9	32.2	56.7
CALCIUM	2610 J	3030 J	819 J	1890 J	162 B	734 J	2390 J	1530 J
CHROMIUM	14.8 K	21.6 K	16.8 J	20.2 J	36.6 J	9.1 K	19.7 K	20.7 K
COBALT	2.4 B	4.6	7	1.8 B	1.4 B	1.6 B	4.7	5.1
COPPER	9.8 J	14.7 J	12.6 J	11.6 J	11 J	12.2 J	12 J	13 J
CYANIDE	0.26 U	0.24 U				0.25 U	0.19	0.23 U
IRON	13300	19000	18400	14200	19000	7200	19600	18500
LEAD	10.3 K	40.7 K	15.1 J	7.3 J	7 J	40.1 K	13.5 K	19.5 K
MAGNESIUM	1110 K	1530 K	1210 J	709 J	374 J	399 K	699 K	1450 K
MANGANESE	65.2	106	508 J	41.3 J	12.8 J	71.8	115	66.5
MERCURY	0.06	0.12	0.03	0.05	0.02 U	0.06	0.04	0.12
NICKEL	5.8 J	8.9 J	9.8	4.6	3.6 B	3.2 J	5.5 J	9.4 J
POTASSIUM	513 K	701 K	802 J	501 J	411 J	183 K	405 K	759 K
SELENIUM	0.53 J	0.52 UJ	0.7 K	0.5 U	0.91 K	0.5 UJ	0.58 J	0.55 J
VANADIUM	21.8 K	30.7 K	25.3	25.8	39.8	12.8 K	32.8 K	32.2 K
ZINC	18.6 J	58.4 J	33.2 J	14.8 J	9.2 J	33.9 J	26.3 J	47.8 J
Miscellaneous Parameters								
PH S.U.	5.21	7.49				7.51	7.95	7.81

U - Chemical was not detected at the numerical detection limit (quantitation limit).

B - Chemical was detected but the result is considered a false positive as a consequence of either laboratory or field blank contamination.

J - Chemical was detected, however, the associated numerical result is estimated

K - Chemical was detected, however the associated numerical result is considered biased high.

L - Chemical was detected, however the associated numerical result is considered biased low.

UJ - Chemical was not detected, however the numerical detection limit is regarded as inaccurate or imprecise.

UL - Chemical was not detected, however the numerical detection limit is regarded as having a low bias.

TABLE 2-3

VERIFICATION SAMPLING DATA
SITE 28 SOIL
NSWC WHITE OAK
SILVER SPRING, MARYLAND

	28-SS001	28-SS002	28-SS003	28-SS004	28-SS005	28-SS006	28-SS007	28-SS008	28-SS009	28-SS010	28-SS011
PCBs	**2/15/2002**	**2/15/2002**	**2/15/2002**	**2/15/2002**	**2/15/2002**	**2/15/2002**	**2/15/2002**	**2/15/2002**	**2/15/2002**	**4/4/2002**	**4/4/2002**
aroclor-1016	48 U	45 U	46 U	51 U	86 U	45 U	49 U	50 U	45 U	38 U	37 U
aroclor-1221	48 U	45 U	46 U	51 U	86 U	45 U	49 U	50 U	45 U	38 U	37 U
aroclor-1232	48 U	45 U	46 U	51 U	86 U	45 U	49 U	50 U	45 U	38 U	37 U
aroclor-1242	48 U	45 U	46 U	51 U	86 U	45 U	49 U	50 U	45 U	38 U	37 U
aroclor-1248	48 U	45 U	46 U	51 U	86 U	45 U	49 U	50 U	45 U	38 U	37 U
aroclor-1254	48 U	45 U	46 U	51 U	86 U	45 U	49 U	50 U	45 U	38 U	37 U
aroclor-1260	350	650	580	720	1,700	150 J	150	200	390	38 U	37 U
SVOCs											
bis(2-Ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	48 B	100 B

All results reported in ug/Kg.
NA - Not analyzed
U - The analyte was not detected at the reporting limit shown.
J - Estimated value.
B - Compound detected in blank.
Only positive detections shown; all other SVOCs non-detect.

TABLE 2-3

VERIFICATION SAMPLING DATA
SITE 28 SOIL
NSWC WHITE OAK
SILVER SPRING, MARYLAND

	28-SS012	28-SS013	28-SS014	28-SS014D	28-SS015	28-SS016	28-SS017	28-SS018	28-SS019	28-SS020	28-SS021
PCBs	4/4/2002	4/4/2002	4/25/2002	4/25/2002	4/25/2002	4/25/2002	4/25/2002	4/25/2002	4/25/2002	4/25/2002	4/25/2002
aroclor-1016	40 U	36 U	41 U	40 U	44 U	40 U	40 U	40 U	39 U	37 U	40 U
aroclor-1221	40 U	36 U	41 U	40 U	44 U	40 U	40 U	40 U	39 U	37 U	40 U
aroclor-1232	40 U	36 U	41 U	40 U	44 U	40 U	40 U	40 U	39 U	37 U	40 U
aroclor-1242	40 U	36 U	41 U	40 U	44 U	40 U	40 U	40 U	39 U	37 U	40 U
aroclor-1248	40 U	36 U	350	580 J	44 U	40 U	40 U	40 U	39 U	37 U	40 U
aroclor-1254	40 U	36 U	41 U	40 U	44 U	40 U	40 U	40 U	39 U	37 U	40 U
aroclor-1260	40 U	860	300	240	67	40 U	230	110	39 U	37 U	40 U
SVOCs											
bis(2-Ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

All results reported in ug/Kg.
NA - Not analyzed
U - The analyte was not detected at the reporting limit shown.
J - Estimated value.
B - Compound detected in blank.
Only positive detections shown; all other SVOCs non-detect.

TABLE 2-3

VERIFICATION SAMPLING DATA
SITE 28 SOIL
NSWC WHITE OAK
SILVER SPRING, MARYLAND

	28-SS022	28-SS023	28-SS024	28-SS025	28-SS026
PCBs	4/25/2002	4/25/2002	4/25/2002	4/25/2002	4/25/2002
arocior-1016	37 U	37 U	40 U	41 U	40 U
arocior-1221	37 U	37 U	40 U	41 U	40 U
arocior-1232	37 U	37 U	40 U	41 U	40 U
arocior-1242	37 U	37 U	40 U	41 U	40 U
arocior-1248	37 U	37 U	40 U	41 U	40 U
arocior-1254	37 U	37 U	40 U	41 U	40 U
arocior-1260	37 U	37 U	40 U	41 U	40 U
SVOCs					
bis(2-Ethylhexyl)phthalate	NA	NA	NA	NA	NA

All results reported in ug/Kg.
NA - Not analyzed
U - The analyte was not detected at the reporting limit shown.
J - Estimated value.
B - Compound detected in blank.
Only positive detections shown; all other SVOCs non-detect.

TABLE 2-4

EXPOSURE POINT CONCENTRATIONS - POST REMOVAL SURFACE SOIL DATA
SITE 28
NSWC WHITE OAK
SILVER SPRING, MARYLAND

PCBs	28-SS001	28-SS002	28-SS003	28-SS004	28-SS006	28-SS007	28-SS008	28-SS009	28-SS010	28-SS011	28-SS012	28-SS013
aroclor-1248	24	22.5	23	25.5	22.5	24.5	25	22.5	19	18.5	20	18
aroclor-1260	350	650	580	720	150	150	200	390	19	18.5	20	860

Half of detection limit used for non-detect results.
For duplicate samples, average of duplicates is used.
UCL calculated using bootstrap-t procedure.
All results reported in ug/Kg.

TABLE 2-4

EXPOSURE POINT CONCENTRATIONS - POST REMOVAL SURFACE SOIL DATA
SITE 28
NSWC WHITE OAK
SILVER SPRING, MARYLAND

PCBs	28-0SS14 AVG	28-SS015	28-SS016	28-SS017	28-SS018	28-SS019	28-SS020	28-SS021	28-SS022	28-SS023	28-SS024
aroclor-1248	375	22	20	20	20	19.5	18.5	20	18.5	18.5	20
aroclor-1260	270	67	20	230	110	19.5	18.5	20	18.5	18.5	20

Half of detection limit used for non-detect results.
For duplicate samples, average of duplicates is used.
UCL calculated using bootstrap-t procedure.
All results reported in ug/Kg.

TABLE 2-4

EXPOSURE POINT CONCENTRATIONS - POST REMOVAL SURFACE SOIL DATA
SITE 28
NSWC WHITE OAK
SILVER SPRING, MARYLAND

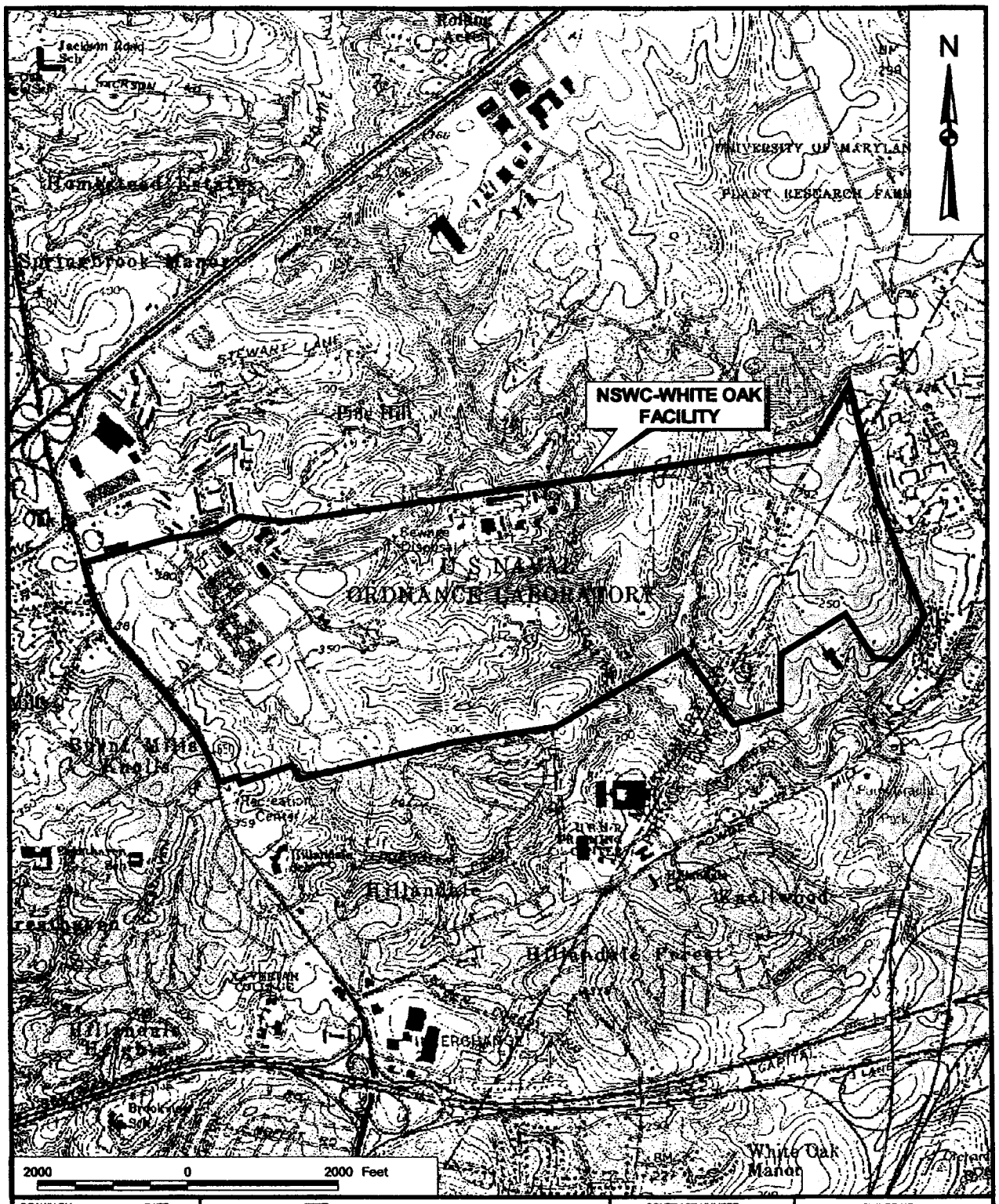
PCBs	28-SS025	28-SS026	No. Samples	Average	Maximum	UCL
aroclor-1248	20.5	20	25	35	375	38
aroclor-1260	20.5	20	25	198	860	234

Half of detection limit used for non-detect results.
For duplicate samples, average of duplicates is used.
UCL calculated using bootstrap-t procedure.
All results reported in ug/Kg.

TABLE 2-5

CUMULATIVE RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
SITE 28
FORMER NSWC WHITE OAK
SILVER SPRING, MARYLAND

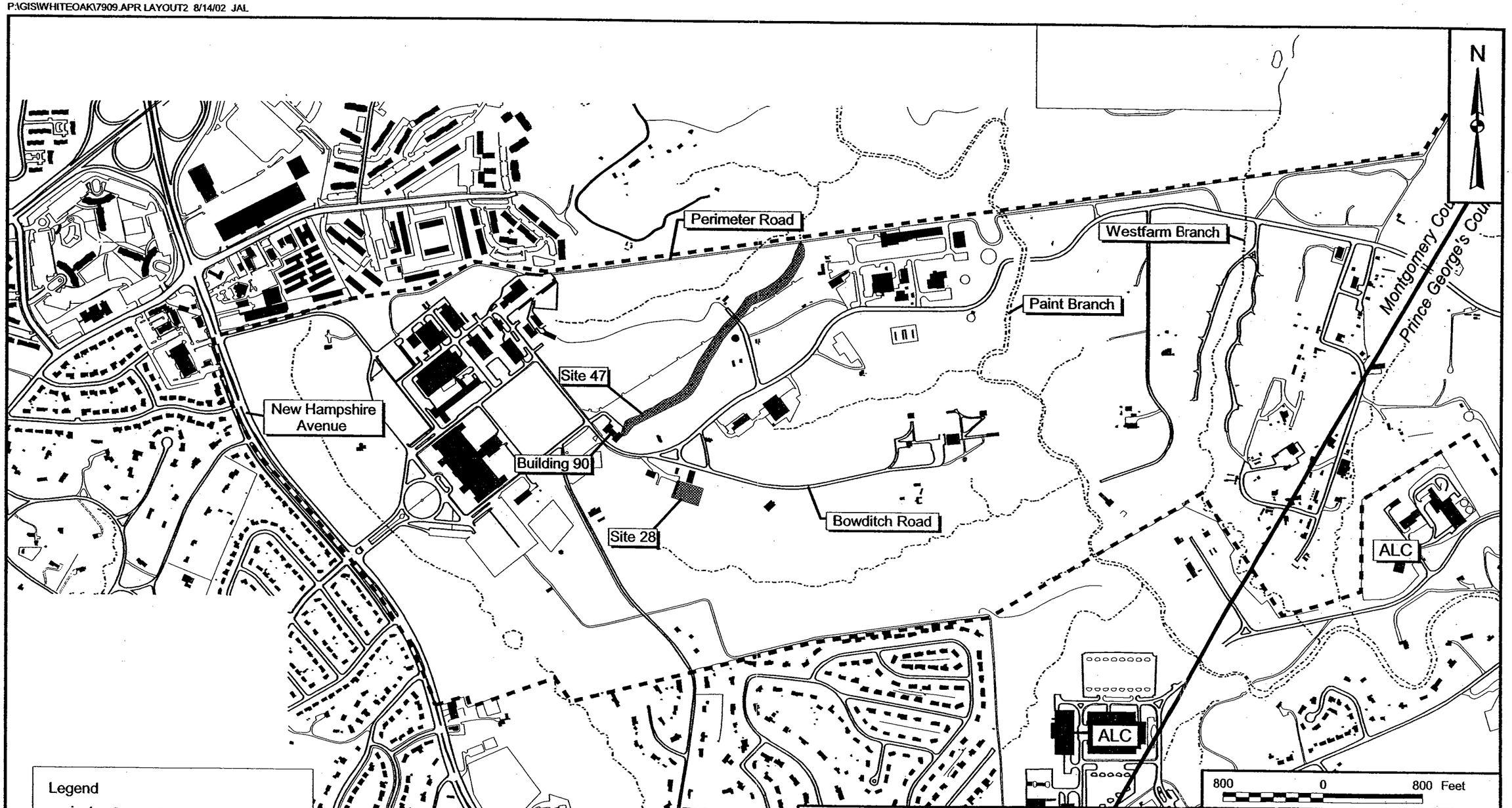
	Full-Time Worker	Future Construction Worker	Future Adult Resident	Future Child Resident	Future Resident (Total)
SITE 28 POST REMOVAL SOIL					
Incidental Ingestion	1.9×10^{-7}	2.6×10^{-8}	2.6×10^{-7}	6.0×10^{-7}	8.6×10^{-7}
Dermal Exposure	1.8×10^{-7}	7.6×10^{-9}	1.4×10^{-7}	2.3×10^{-7}	3.4×10^{-7}
Total Risk	**3.7×10^{-7}**	**3.4×10^{-8}**	**4.0×10^{-7}**	**8.3×10^{-7}**	**1.2×10^{-6}**



DRAWN BY MJJ — DATE 08May99	Tetra Tech NUS, Inc.	CONTRACT NUMBER 7909	OWNER NO. 0315
CHECKED BY JDF — DATE 4/20/00	FACILITY VICINITY MAP FORMER NSWC-WHITE OAK SILVER SPRING, MARYLAND	APPROVED BY RJK	DATE 4/28/00
COST/SCHEDULE-AREA		APPROVED BY —	DATE —
SCALE AS NOTED		DRAWING NO. FIGURE 2-1	REV 0

P:\GIS\WHITEOAK\7801 APR 01_Figure 3-1 Layout MGS 2-12-01

P:\GIS\WHITEOAK\7909.APR LAYOUT2 8/14/02 JAL



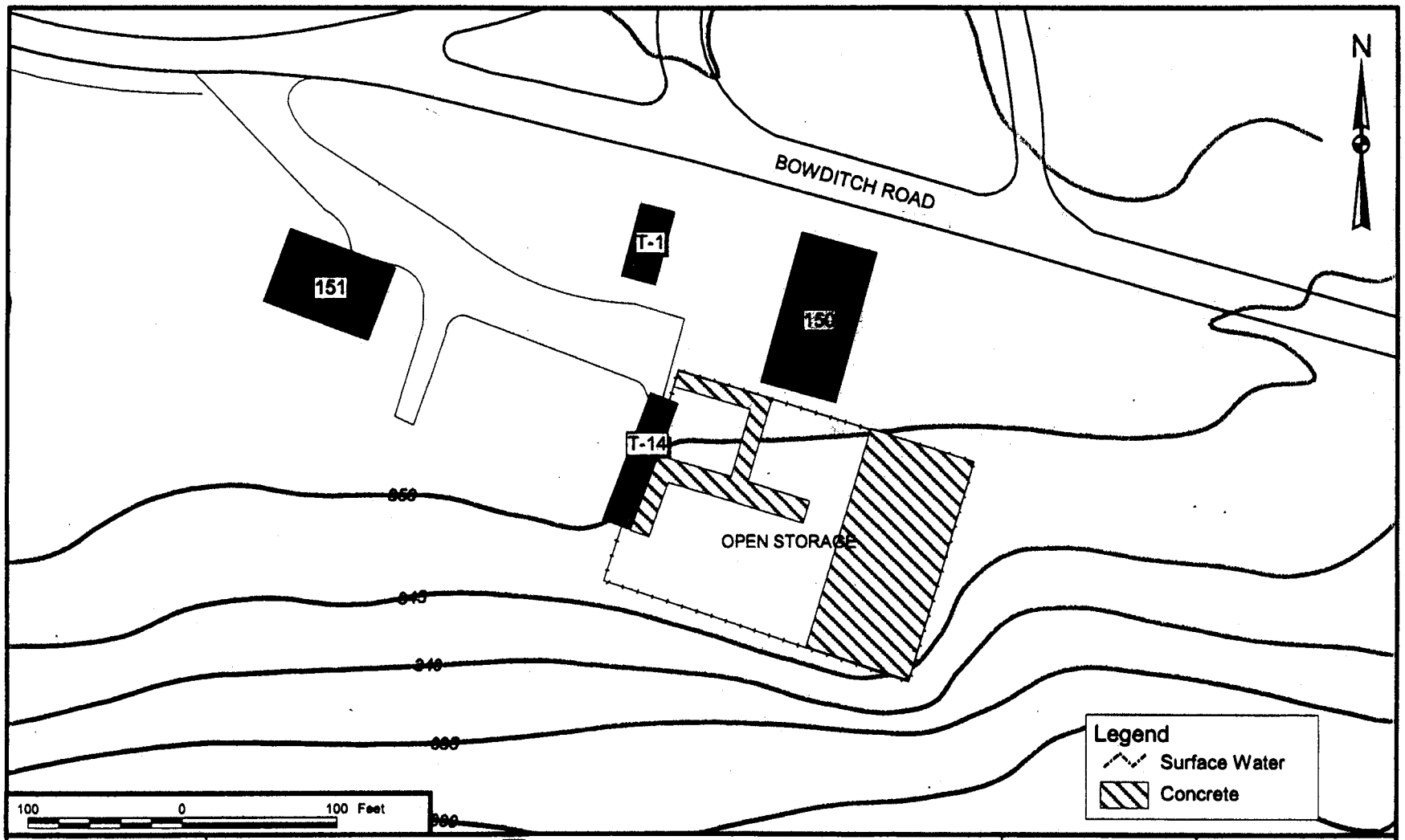
DRAWN BY	DATE
MJJ	23SEPT98
CHECKED BY	DATE
KMS	3-6-01
COST/SCHEDULE-AREA	
SCALE	AS NOTED

Tetra Tech NUS, Inc.

SITE LOCATION MAP

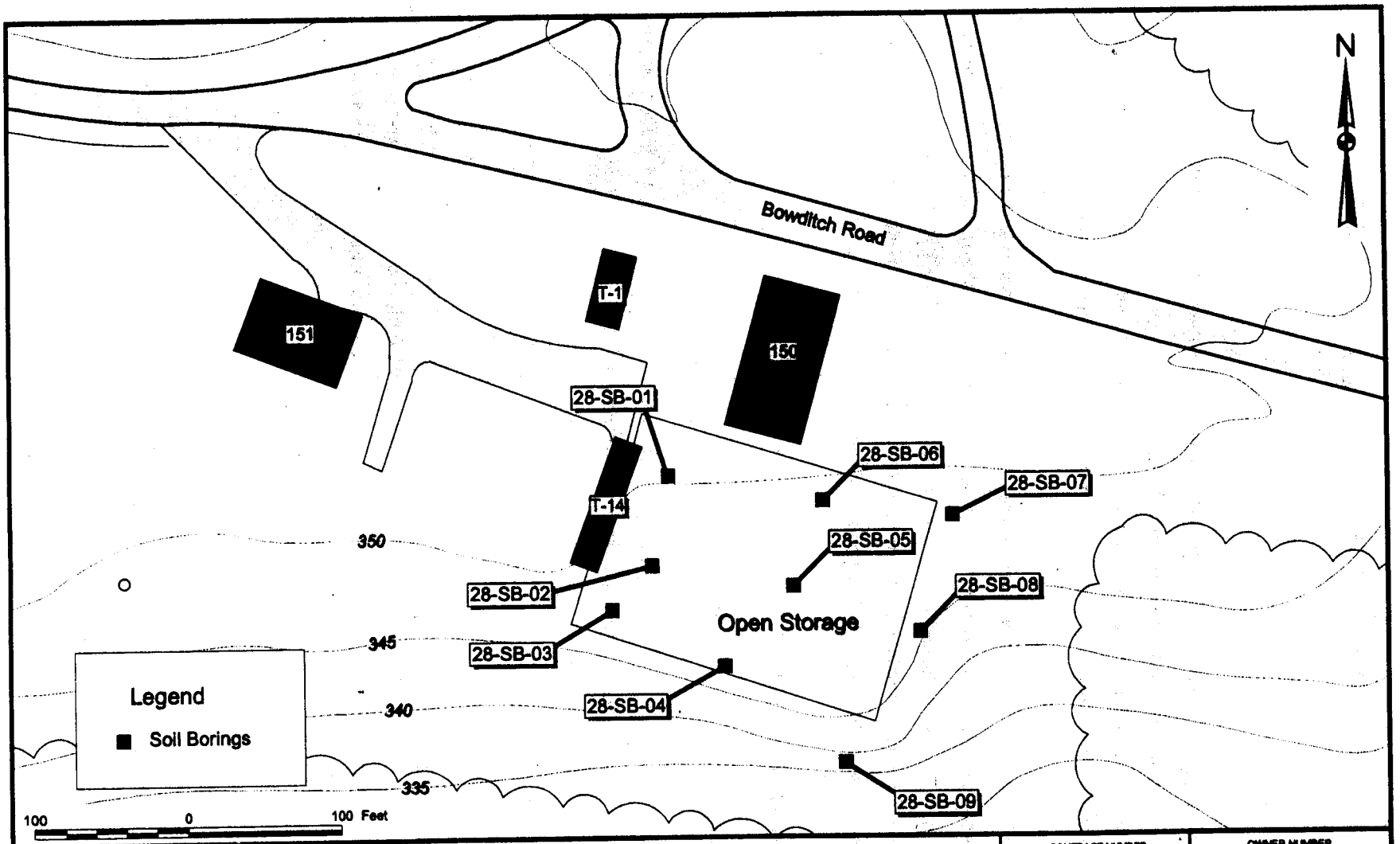
FORMER NSWC - WHITE OAK
SILVER SPRING, MARYLAND

CONTRACT NUMBER	OWNER NUMBER
7909	0315
APPROVED BY	DATE
SN	3-6-01
APPROVED BY	DATE
DRAWING NO. FIGURE 2-2	REV 0



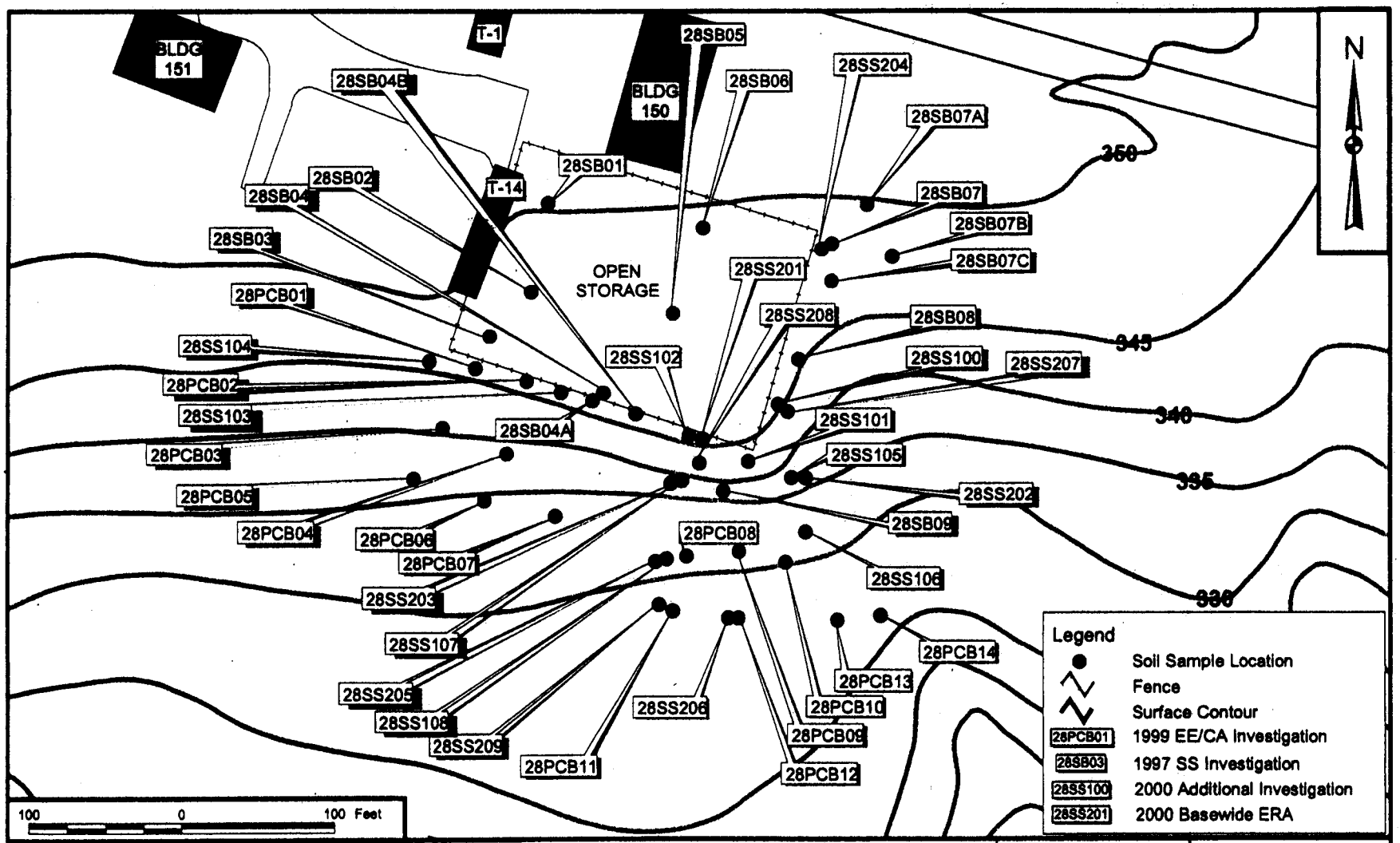
DRAWN BY T. BECKMAN DATE 6/23/99	Tetra Tech NUS, Inc.	CONTRACT NUMBER 7909	OWNER NUMBER 0315
CHECKED BY KKS DATE 7/25/01	SITE LAYOUT MAP	APPROVED BY JAN	DATE 7/26/01
COST/SCHEDULE-AREA	NSWC - WHITE OAK SILVER SPRING, MARYLAND	APPROVED BY	DATE
SCALE AS NOTED		DRAWING NO FIGURE 2-3	REV 0

P:\GIS\WHITEOAK\EECA.APR FIG 3-1 LAYOUT MGS 7-25-01



DRAWN BY MJJ	DATE 23SEPT98	Tetra Tech NUS, Inc.	CONTRACT NUMBER 7427 / OWNER NUMBER 0101
CHECKED BY	DATE	SITE MAP SITE 28 / SWMU 88 - BUILDING T-14 SCRAPYARD NSWC - WHITE OAK SILVER SPRING, MARYLAND	APPROVED BY SN / DATE 12/1
COST/SCHEDULE-AREA			APPROVED BY / DATE
SCALE AS NOTED			DRAWING NO FIGURE 2-4 / REV 0

P:\GIS\WHITEOAK\7427.APR 28-SEPT-98 MJJ LAYOUT8

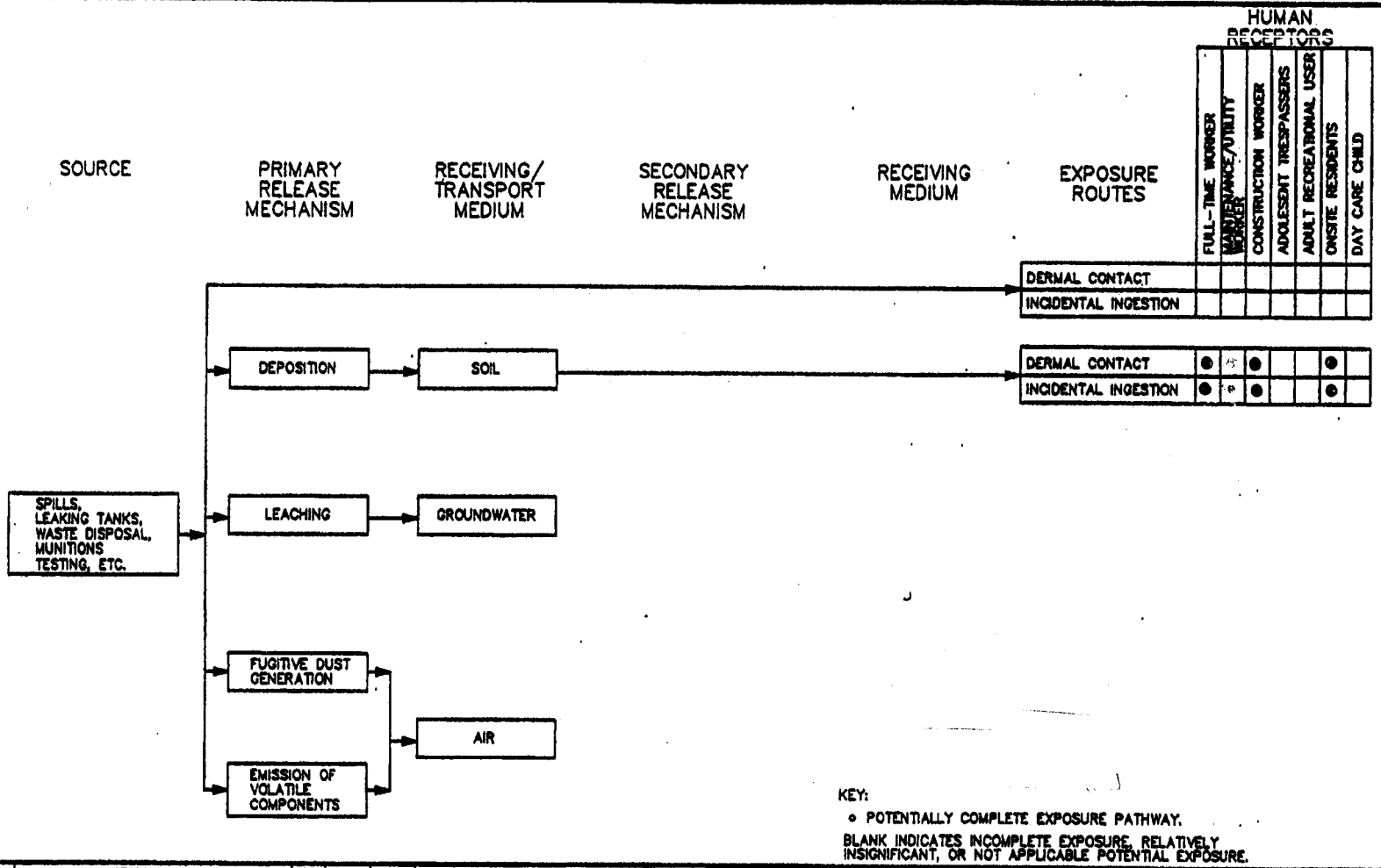


DRAWN BY M. Spangenberg	DATE 2-12-01	Tetra Tech NUS, Inc.	CONTRACT NUMBER 7909 / OWNER NUMBER 315
CHECKED BY KMS	DATE 3/6/01	SAMPLE LOCATIONS SITE 28 - BUILDING T-14 SCRAPYARD NSWC WHITE OAK SILVER SPRING, MARYLAND	APPROVED BY SW / DATE 3/6/01
COST/SCHEDULE-AREA			APPROVED BY — / DATE —
SCALE AS NOTED			DRAWING NO FIGURE 2-5 / REV 0

P:\GIS\EECA\APR\Figure 3-2 Layout MGS 2-12-01

BONDITCH ROAD
CONSTRUCTION ENTRANCE
GATE
GATE
151
150
T-1
T-14
350
345
340
335
330
325
320
315
SS001
SS002
SS003
SS004
SS005
SS006
SS007
SS008
SS009
SS010
SS011
SS012
SS013
SS014
SS015
SS016
SS017
SS018
SS019
SS020
SS021
SS022
SS023
SS024
SS025
SS026
LEGEND:
SOIL SAMPLES–PCBs
SOIL SAMPLES–PCBs/SVOCs
EXCAVATION AREA
FENCELINE
Tetra Tech NUS, Inc.
NORTHERN DIVISION
SITE 28 REMOVAL ACTION VERIFICATION SAMPLING
FORMER NSWC WHITE OAK
SILVER SPRING, MARYLAND
D
2-6

ACAD: 4235st01.dwg 02/14/02 DM



KEY:

- POTENTIALLY COMPLETE EXPOSURE PATHWAY.

BLANK INDICATES INCOMPLETE EXPOSURE, RELATIVELY INSIGNIFICANT, OR NOT APPLICABLE POTENTIAL EXPOSURE.

NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY DM DATE 2/14/02
CHECKED BY DATE
COST/SCHED-AREA
SCALE NOT TO SCALE

Tetra Tech NUS, Inc.

CONCEPTUAL SITE MODEL
FORMER NSWC – WHITE OAK
SILVER SPRING, MARYLAND

CONTRACT NO. 4235
OWNER NO.
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 2-7 REV. 0

FORM CADD NO. SOUTH_SHADOW - REV 0 - 02/11/97