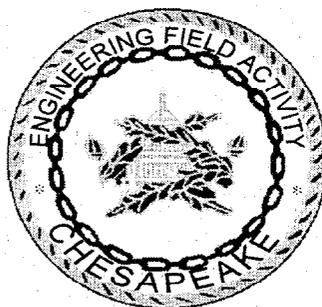


00114

N60921.AR.000307  
NSWC WHITE OAK  
5090.3a

# **Work Plan** for **Site 47** **Building 90 Drainage**

The Former  
Naval Surface Warfare Center  
White Oak  
Silver Spring, Maryland



Engineering Field Activity Chesapeake  
Naval Facilities Engineering Command

Contract Number N62472-90-D-1298

Contract Task Order 0298

September 2000

# TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE NO.</u>
<b>ACRONYM LIST</b> .....	<b>iii</b>
<b>1.0 INTRODUCTION</b> .....	<b>1-1</b>
1.1 SCOPE AND OBJECTIVES .....	1-1
1.2 SITE HISTORY AND PROJECT BACKGROUND .....	1-1
1.3 SAMPLING OBJECTIVES.....	1-2
1.4 DOCUMENT ORGANIZATION .....	1-2
<b>2.0 FIELD OPERATIONS</b> .....	<b>2-1</b>
2.1 SITE-SPECIFIC SAMPLING AND ANALYSIS.....	2-1
2.2 FIELD INVESTIGATION.....	2-1
2.3 HEALTH AND SAFETY.....	2-2
<b>3.0 SAMPLING PROCEDURES</b> .....	<b>3-1</b>
3.1 SEDIMENT SAMPLING .....	3-1
3.2 SUBSURFACE SOIL SAMPLING .....	3-1
3.3 DEPTH MEASUREMENT .....	3-1
3.4 WASTE HANDLING .....	3-2
3.5 RECORD KEEPING .....	3-2
3.6 SAMPLE HANDLING .....	3-2
3.7 QUALITY CONTROL SAMPLES.....	3-2
<b>REFERENCES</b> .....	<b>R-1</b>

## TABLE

### NUMBER

- 1 Summary of Analytical Procedures and Bottleware Requirements

## FIGURES

### NUMBER

- 1 Site Vicinity Map
- 2 Positive Detections of PCBs in Sediment/Proposed Sediment Location
- 3 Sanitary and Storm Sewer

## **1.0 INTRODUCTION**

### **1.1 SCOPE AND PURPOSE**

The Northern Division of the Naval Facilities Engineering Command issued Contract Task Order (CTO) 0298 to Tetra Tech NUS, Inc. (TtNUS) (formerly Brown & Root [B&R] Environmental) under Comprehensive Long-term Environmental Action Navy (CLEAN) Contract No. N62472-90-D-1298. Under CTO 0298, TtNUS has prepared this work plan to perform additional sampling activities at Site 47, Building 90 Drainage at the former Naval Surface Warfare Center (NSWC) White Oak, located in Silver Spring, Maryland. The purpose of this work plan is to provide a description of the planned testing activities at Site 47 that will further characterize the contamination and source area at Building 90 and the stream to its north. This description will include additional samples that will be collected, along with the specific tests that will be conducted and methodologies and procedures that will be followed.

### **1.2 SITE HISTORY AND PROJECT BACKGROUND**

NSWC-White Oak was a Navy-owned and -operated facility for naval surface warfare research. The facility is located approximately 5 miles north of Washington, D.C. off New Hampshire Avenue in Silver Spring, Maryland (see Figure 1). NSWC-White Oak covers approximately 710 acres, and is located in both Prince George's and Montgomery Counties. Adjacent to the southern corner of the property is the U.S. Army's Adelphi Laboratory Center (ALC). A mixture of residential, park, industrial, and commercial properties border the remainder of the facility. When the facility was closed, the property was transferred to the General Services Administration (GSA) and the U.S. Army. The GSA-managed property is now called the Federal Research Center at White Oak.

Site 47, formerly part of Site 11, Industrial Wastewater Disposal Area 100, is located along Bowdich Road in the central-eastern portion of the former NSWC-White Oak. Included in Site 47 is an unnamed tributary to Paint Branch, originating behind Building 90 that traverses approximately 2,200 feet to the northeast, eventually joining with a stream from Site 2, Apple Orchard Landfill. Figure 2 identifies the location of Site 47, Building 90 Drainage. The combined flows of these unnamed tributaries join with Paint Branch off of the government property. The tributary is shallow and shaded, with the streambed consisting of sand, cobble, and some exposed bedrock (GSA, 1997). Cobbles were embedded up to 0.5 inch (GSA, 1997). During the April 1999 site visit by TtNUS, the stream, at two prior sampling locations, was approximately 1 foot wide and 1 to 2 inches deep, with very slow moving water.

The stream was sampled for benthic macroinvertebrates, approximately 1,200 feet downstream of Site 11, by Greenhorn & O'Mara, Inc, on November 13, 1995 (GSA, 1997). The results of the sampling found

that the tributary had small amounts of EPT (Ephemeroptera, Plecoptera, and Trichoptera) taxa, which are considered indicative of healthy streams (GSA, 1997). The study indicated that it is likely the low numbers of benthic macroinvertebrates at this site are due to the small size of the stream and the resulting lack of available habitat (GSA, 1997).

As mentioned above, Site 47 was initially part of Site 11. Prior sampling activities completed at Site 11 indicated that polychlorinated biphenyl (PCB) contamination along the stream behind Building 90 was of concern (TtNUS, 1999). Following the initial investigation, follow-on sampling in the spring 2000 identified additional PCB contamination within the drainageway, extending downstream approximately 2000 feet. This data will be incorporated into the final Site 47 report. The source of this contamination is uncertain, but believed to be caused by a transformer located in the northern portion of the basement in Building 90. It was determined that additional sampling should be done in order to completely characterize the extent and depth of contamination in the area.

### **1.3 SAMPLING OBJECTIVES**

The purpose of the additional sampling being conducted at Site 47 is to determine the source area and extent of PCB contamination located along the stream to the north of Building 90. Data generated from this sampling activity will be used to further evaluate potential site risks, and determine the appropriate remedial action.

While the transformers remain within Building 90, prior modifications to the basement floor (the floor was refloated) where a transformer leak was known to have occurred, preclude the further investigation of the basement as a source area. In addition, GSA, in preparation for building demolition to facilitate property development, is conducting wipe and chip sampling within possible PCB contaminated sites in the 100 Area of NSWC White Oak. In particular, chip sampling has been performed in the basement transformer area of Building 90, which would make further investigation of the basement redundant at this time. When available, this data will be incorporated into the RCRA Facility Investigation Report for Site 47, and risk associated with exposure to contamination, if any, will be addressed at that time.

### **1.4 DOCUMENT ORGANIZATION**

Section 1.0 presented the project and site background and the work plan objective. Section 2.0 provides a summary of the field operations, including the rationale for the additional sampling methodology. Section 3.0 presents sampling procedures.

## 2.0 FIELD OPERATIONS

TtNUS will perform sampling at Site 47 along the stream to the north of Building 90, within the storm drain in the vicinity of Building 90, and in surface soil adjacent to the transformer room in the basement of Building 90 in order to characterize the contamination of the area. Specifically, the extent, source area, and depth of contamination are of concern.

### 2.1 SITE-SPECIFIC SAMPLING AND ANALYSIS

Based on analytes previously identified at the site, and the discussions of the Base Realignment and Closure (BRAC) Cleanup Team (BCT), additional samples from Site 47 will undergo analysis according to the Target Compound List (TCL) Pesticides/PCBs method OLM04.1 (see Table 1). Previous sampling activity near the site has indicated elevated PCB concentrations along the stream to the north of Building 90. Figure 2 illustrates the extent of this PCB contamination.

To facilitate use of the analytical data collected, screening criteria will be used to evaluate human health and ecological risks. The Screening Criteria proposed for use at Site 47 are primarily the United States Environmental Protection Agency (U.S. EPA) Region III residential Risk-Based Concentrations (RBCs). A proposed ecological Screening Criteria of 1 mg/kg is also planned for Site 47.

### 2.2 FIELD INVESTIGATION

The proposed sampling locations at Site 47 are shown on Figure 2 and Figure 3.

TtNUS will perform sampling and analysis according to the methods described in the Master Work Plan (B&R Environmental, 1998). Several different types of samples are intended to be collected at Site 47. Two surface soil samples will be collected adjacent to the parking lot near the Building 90 transformer basement. In addition, a sediment sample will be collected from the drop inlet along the storm drain in the Building 90 parking lot. These samples will be taken in an attempt to find the source of PCB contamination at Site 47. The sample locations are shown on Figure 3.

Fifteen sediment samples will be collected along the stream located to the north of Building 90 (see Figure 2). A majority of the sediment samples will be collected from depths of six inches or less. However, if sufficient sediment thickness is encountered, several of the sediment samples will be collected at a depth between 6 to 18 inches within the stream. The purpose of this sampling is to characterize the depth of PCB contamination in the stream. Where sediment depths are six inches or

less, additional sediment sampling will not be performed. At these locations, it will be assumed that the entire depth of sediment will be removed during remedial action, if necessary.

Four of the sediment samples will be taken downstream of the existing PCB detections to evaluate the extent of the contamination area. Sampling will continue downstream as PCB concentrations are detected in excess of 1 mg/kg. Samples will be collected at 200-foot intervals along the stream and provided to a fixed based laboratory for analysis. The fixed-based laboratory will be requested to hold samples and analyze them in an upstream to downstream progression, at the direction of the TtNUS Project Manager. Samples will be analyzed sequentially, from furthest upstream to furthest downstream until PCB concentrations less than 1 mg/kg are identified. Following the low concentration (less than 1 mg/kg) sample analysis, subsequent downstream samples will not be analyzed and the low concentration sampling location will be used to delineate the extent of sediment contamination.

In addition, 6 surface soil samples will be collected along the flood plain of Site 47 to address the presence of PCB contamination beyond the stream banks, which may have resulted from past storm events where the bank-full flow was exceeded. Floodplain sampling will be performed in areas of Site 47 that have a broad floodplain and are not deeply incised. Due to the deeply incised nature of portions of the stream, floodplain sampling is not believed to be necessary along its entire length. The floodplain sampling locations are identified on Figure 2. The locations are shown slightly offset from the stream.

In addition to the sampling that is proposed at Site 47, depth and width measurements will be taken along the stream at each sample station to help illustrate the path of the PCB contamination and to quantify the volume of sediment within the stream.

TtNUS staff from the Gaithersburg, Maryland and Pittsburgh, Pennsylvania office will perform the collection of the soil and sediment samples. TtNUS Project Manager, Mr. Scott Nesbit, will direct the work. All sample collection efforts will be coordinated with the Navy Remedial Project Manager, Ms. Krista Grigg, who will be responsible for coordinating data distribution to the members of the BCT following receipt. Any unusual field conditions (i.e., soil staining) identified during sample collection will be brought to the attention of the Navy RPM for further action as warranted.

### **2.3 HEALTH AND SAFETY**

All field activities will be performed in accordance with a project specific Health and Safety Plan, the outline for which is provided in the Master Health and Safety Plan (HASP) previously submitted and approved for White Oak (B&R Environmental, 1998).

## **3.0 SAMPLING PROCEDURES**

All soil and sediment samples will be collected, handled, labeled, and shipped to the laboratory in accordance with the following procedures. Applicable field forms and Standard Operating Procedures (SOPs) can be found in the Master Work Plan for White Oak (B&R Environmental, 1998).

### **3.1 SEDIMENT SAMPLING**

Sediment sampling will be performed from depositional areas of the stream in accordance with the Master Field Sampling Plan (FSP) for White Oak (B&R Environmental, 1998). Some sediment samples may be taken from a depth between 6 to 18 inches. Sediment samples collected at depth will be collected with a hand auger, in the same manner as used to collect subsurface soil samples. Labeled pin flags will be placed on the stream bank to mark the approximate sampling locations (See Figure 2). All samples will be submitted to a fixed-base laboratory for quick-turn (i.e., 24-hour) around analysis. Bottleneck requirements are included in Table 1.

### **3.2 SOIL SAMPLING**

Soil sampling will be performed near the Building 90 transformer basement in accordance with the Master FSP for White Oak (B&R Environmental, 1998). At each sampling location, a volume of soil sufficient for the required analyses shall be obtained using a disposable polyethylene trowel. The sample will be placed in a jar and labeled. All samples will be submitted to a fixed-base laboratory for quick-turn (i.e., 24-hour) around analysis. Bottleneck requirements are included in Table 1.

Fixed-based laboratory analyses will be used for all soil samples. Faxed data, with limited data deliverables will be requested, which will provide a cost-effective, quantitative data set, suitable for further evaluation in human health and ecological risk assessments. The use of PCB field test kits, while capable of providing short turnaround times, are not believed to be appropriate for this field effort.

Standard method detection levels, identified in the Master Quality Assurance Project Plan (QAPP) for White Oak (B&R Environmental, 1998), will be used during sample analysis.

### **3.3 DEPTH MEASUREMENT**

Depth measurements will be taken at various points along the stream located to the north of Building 90. In addition, stream width will be measured to aid in determining the volume of sediment present in the stream. The volume measurements will then be used to evaluate applicable corrective measures.

### 3.4 WASTE HANDLING

All disposable sampling equipment, disposable clothing, and other investigation-derived waste (IDW) will be collected by TtNUS and placed in plastic garbage bags. All bagged IDW will be disposed in trash receptacles.

### 3.5 RECORD KEEPING

All pertinent field data will be recorded on a Soil Sample Log Sheet and in the field logbook. Proper completion of sample log sheets is discussed in Section 2.0 of the Master FSP (B&R Environmental, 1998). A sketch illustrating the approximate location will be included on the log sheet.

Figures 2 and 3 will also be used to keep track of the sample locations and their sequential numbering.

### 3.6 SAMPLE HANDLING

Sample handling includes procedures for sample identification, packaging, and shipping. Selecting sample containers and preservatives, and determining allowable holding times are also included. Sample handling and custody will be conducted in accordance with Sections 3.2 and 3.3 of the Master FSP for White Oak (B&R Environmental, 1998).

Each sample collected will be assigned a unique tracking number. This 12-digit alphanumeric code will identify the sample location as follows.

NNNN	Site (0047)
AA	Media (sediment – SD, surface soil - SS)
NN	Sample Number (sequential ordering of samples collected, beginning with 01)

For example, the first sediment sample collected at Site 47 would have sample identification number 0047-SD-01.

### 3.7 QUALITY CONTROL SAMPLES

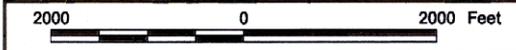
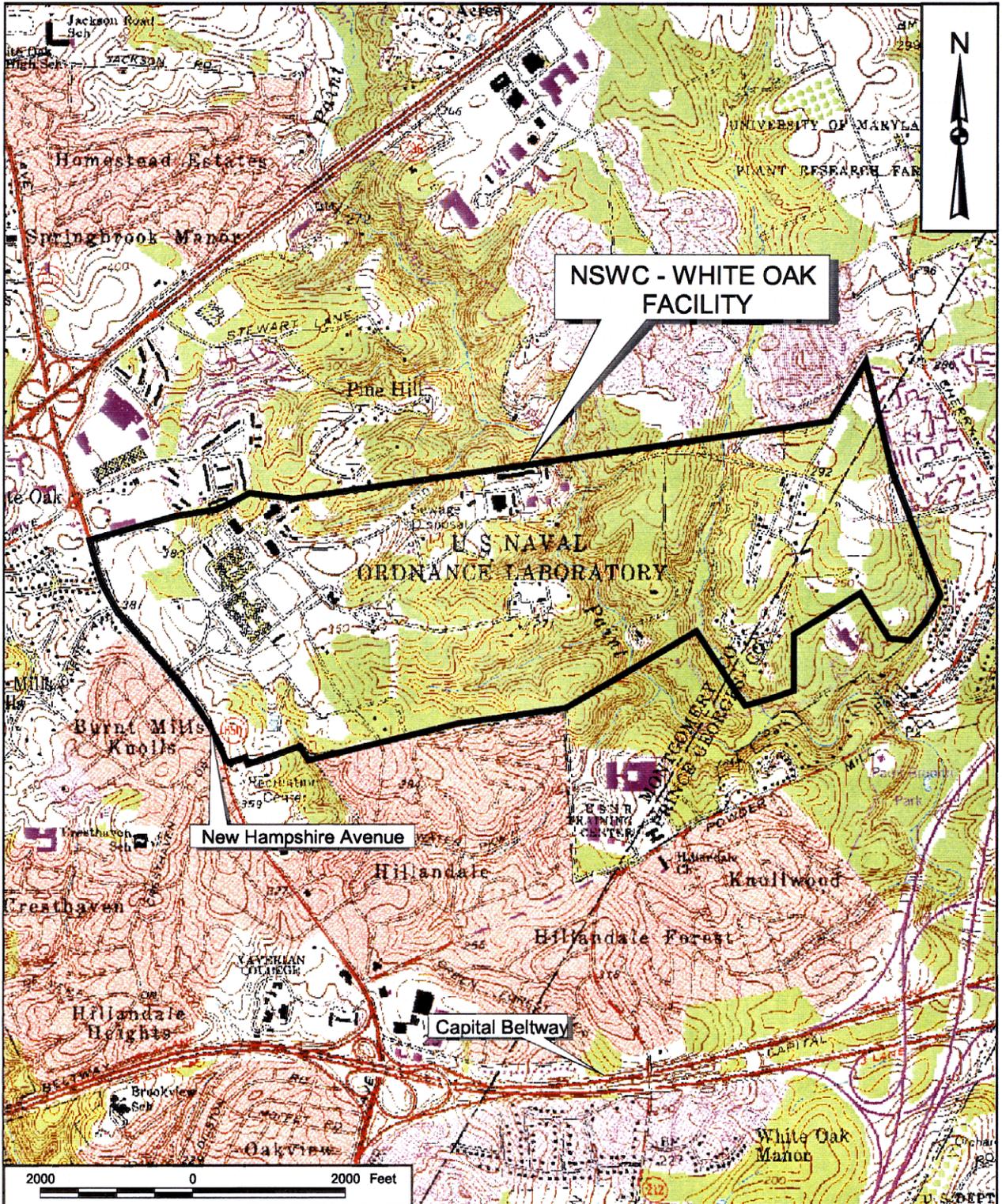
Field Quality Control (QC) samples will be collected or generated during the sampling activities to assess the quality of the data resulting from field sampling and analytical programs. Rinsate blanks, matrix spikes/matrix spike duplicates, and duplicates will be collected during this sampling event. One field duplicate will be collected for every 10 samples collected. One rinsate blank will be collected following decontamination of the stainless steel bowl used for sample homogenization. One matrix spike/matrix

spike duplicate sample will be collected. Additional information regarding the field QC samples is provided in the Master QAPP for White Oak (B&R Environmental, 1998).

TABLE 1

SUMMARY OF ANALYTICAL PROCEDURES  
AND BOTTLEWARE REQUIREMENTS  
SITE 47 – BUILDING 90 DRAINAGE  
FORMER NSWC-WHITE OAK, SILVER SPRING, MARYLAND

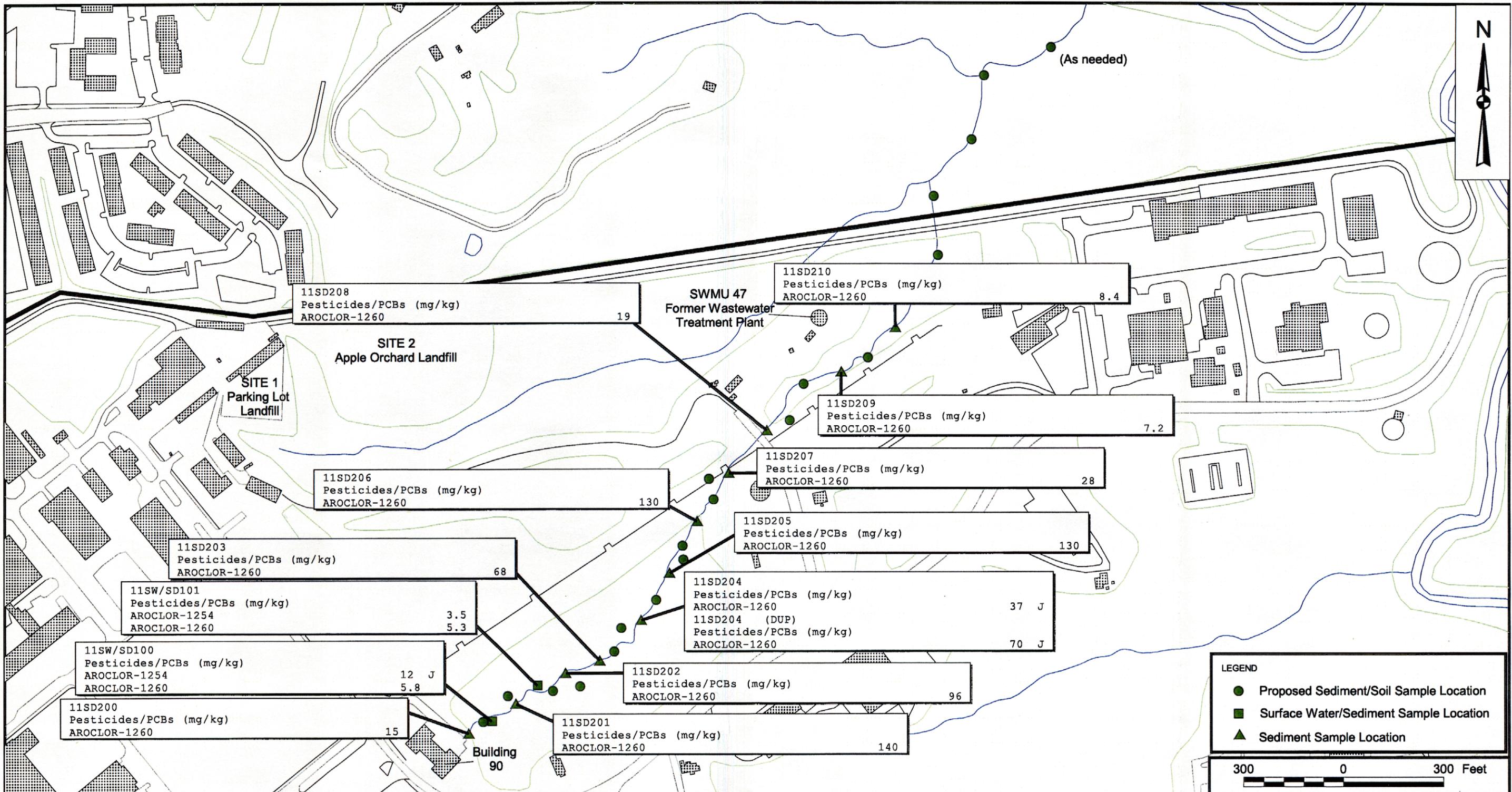
Parameter	Preparation Method	Analytical Method	Sample Volume	Container Material	Preservatives	Holding Time
<b>SOLID SAMPLES</b>						
TCL Pesticides/PCBs	OLM04.1	OLM04.1	240 mL	Wide-mouth glass jar; teflon lined lid	Cool to 4° C	Extract 14 days; analyze 40 days



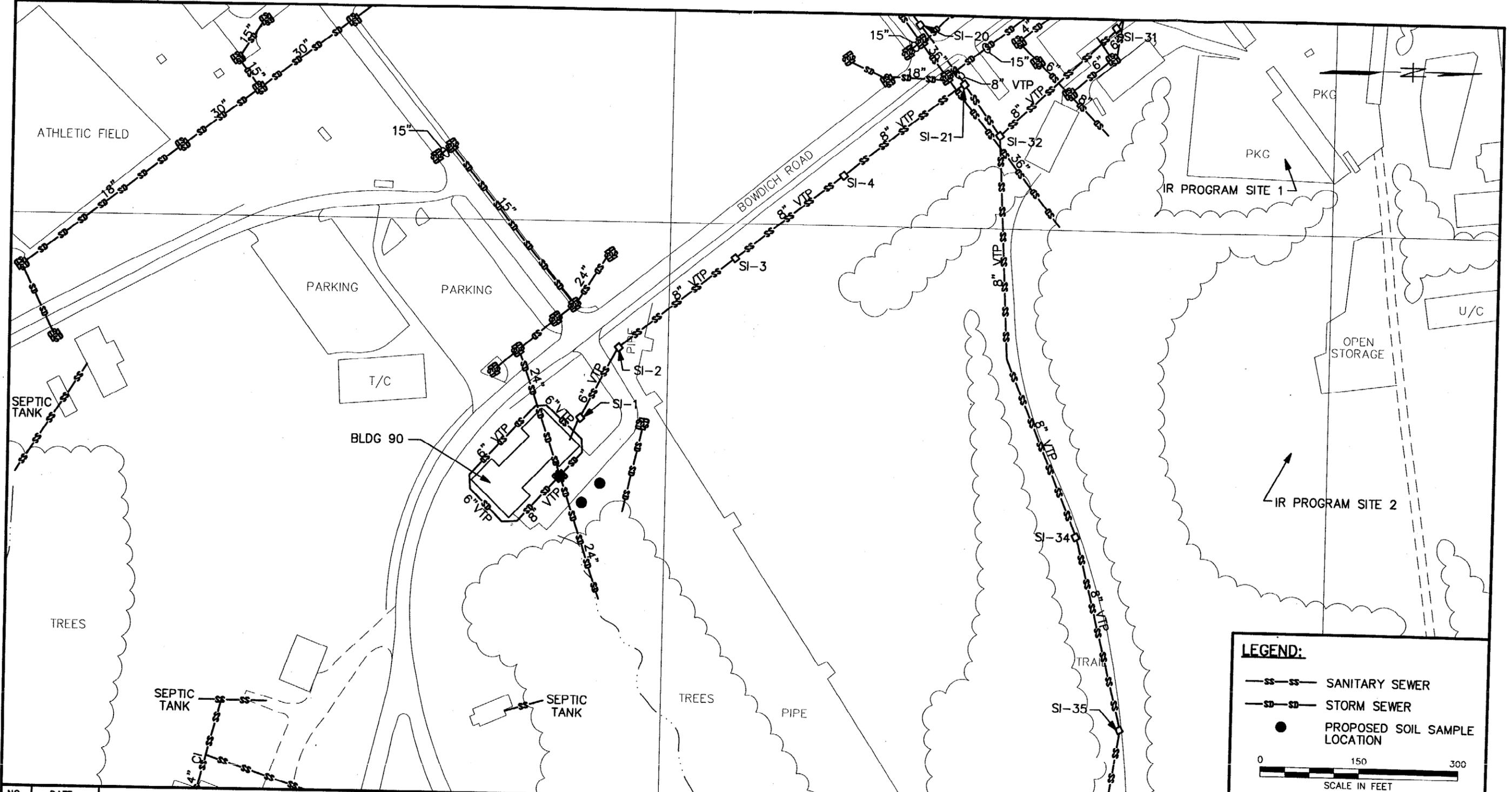
DRAWN BY M. Spengenberg		DATE 10/10/00		Tetra Tech NUS, Inc.		CONTRACT NUMBER 7687		OWNER NO. 0298			
CHECKED BY <i>CRZ</i>		DATE 10/17/00				APPROVED BY <i>SN</i>		DATE 10/17/00			
COST/SCHEDULE-AREA				SITE VICINITY MAP FORMER NSWC - WHITE OAK SILVER SPRING, MARYLAND				APPROVED BY		DATE	
SCALE AS NOTED								DRAWING NO. FIGURE 1		REV 0	

P:\GIS\WHITEOAK\2\_CMS.APRISITE VICINITY MAP-PROPOSE AND PLAN MGS 10/10/00

00114 BRIV



NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES	DRAWN BY	DATE	Tetra Tech NUS, Inc.		CONTRACT NUMBER	OWNER NUMBER
							J. BELLONE	8/15/00	POSITIVE DETECTIONS OF PCBs IN SEDIMENT AND PROPOSED SEDIMENT SAMPLE LOCATIONS BUILDING 90 DRAINAGE SITE 47 - INDUSTRIAL WASTEWATER DISPOSAL AREA 100 FORMER NSWC WHITE OAK SILVER SPRING, MARYLAND		7687	
							CAM	10/17/00	APPROVED BY [Signature]			DATE 10/17/00
									APPROVED BY [Signature]			DATE
									DRAWING NO.		FIGURE 2	
									SCALE AS NOTED			REV 0



**LEGEND:**

- SS—SS— SANITARY SEWER
- SD—SD— STORM SEWER
- PROPOSED SOIL SAMPLE LOCATION

0 150 300  
SCALE IN FEET

NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY MF	DATE 9/26/00	<p><b>Tetra Tech NUS, Inc.</b></p> <p>PROPOSED SURFACE SOIL AND SEDIMENT SAMPLE LOCATIONS SITE 47 INDUSTRIAL WASTEWATER DISPOSAL AREA 100 FORMER NSWC WHITE OAK SILVER SPRINGS, MARYLAND</p>	CONTRACT NO. 7687	OWNER NO. 0298
CHECKED BY CAR	DATE 10/17/00		APPROVED BY SIS	DATE 10/17/00
COST/SCHED-AREA	SCALE AS NOTED		APPROVED BY	DATE
		DRAWING NO.	FIGURE 3	REV. 0

001118027

## REFERENCES

Brown & Root (B&R) Environmental, 1998. Master Work Plan for the Former Naval Surface Warfare Center White Oak, Silver Spring, Maryland prepared for the Engineering Field Activity Chesapeake, Naval Facilities Engineering Command. King of Prussia, PA. June.

General Services Administration, 1997. US Food and Drug Administration, Consolidation, Montgomery County, Final Environmental Impact Statement. April.

Tetra Tech NUS, Inc., 1999. RCRA Facility Investigation for Sites 2, 3, 4, 7, 8, 9 and Paint Branch, Naval Surface Warfare Center, White Oak, Silver Spring, Maryland, prepared for the Engineering Field Activity Chesapeake, Naval Facilities Engineering Command. King of Prussia, PA. September.