2020 PCB TMDL ACTION PLAN

FOR

U.S. ARMY GARRISON FORT BELVOIR, VIRGINIA

Prepared For:

Department of the Army
U.S. Army Garrison, Fort Belvoir
Directorate of Public Works
Environmental and Natural Resources Division

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ACRONYMS AND ABBREVIATIONS

AAFES	Army and Air Force Exchange Services
AOC	Area of Concern
AR	Army Regulation
bgs	below ground surface
BLDG	building
BMP	Best Management Practice
CWA	Clean Water Act
CSO	combined sewer overflow
DCR	Department of Conservation and Recreation
DDOE	District of Columbia Department of the Environment
DECA	Defense Commissary Agency
DEQ	Department of Environmental Quality
DPDO	Defense Property Disposal Office
DPW-ENRD	Directorate of Public Works, Environmental and Natural Resources Division
FBNA	Fort Belvoir North Area
ft	feet
g	grams
GIS	Geographic Information System
HWMMP	Hazardous Waste Minimization and Management Plan
ISW	Industrial Stormwater
L	liter
LA	load allocations
LUC	Land Use Control
LUCIP	Land Use Control Implementation Plan
MDE	Maryland Department of the Environment
MOS	margin of safety
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollutant Discharge Elimination System
NRO	Northern Regional Office
ORI	outfall reconnaissance inventory
PCB	polychlorinated biphenyl
ppm	parts per million
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
RO	Representative Outfalls

SAP	Sampling and Analysis Plan
SCF	SES Construction and Fuel Services LLC
SPCC	Spill Prevention, Control, and Countermeasure
SWPPP	Stormwater Pollution Prevention Plan
SW	Stormwater
SWMU	Solid Waste Management Unit
TMDL	Total Maximum Daily Load
TSCA	Toxic Substances Control Act
tPCB	Total PCBs calculated as per TMDL Guidance Memo 14-2004
VADEQ	Virginia Department of Environmental Quality
VELAP	Virginia Environmental Laboratory Accreditation Program
VPDES	Virginia Pollutant Discharge Elimination System
VSMP	Virginia Stormwater Management Program
U.S. EPA	United States Environmental Protection Agency
WLA	Waste Load Allocation

1. INTRODUCTION AND BACKGROUND

The U.S. Army Garrison Fort Belvoir is located in southeastern Fairfax County, Virginia, approximately 15 miles southwest of Washington, DC, and 95 miles north of Richmond, Virginia. Fort Belvoir's military history dates to the early 1900s, when the facility was known as Camp Belvoir and used as an Army rifle range and training camp. The post was re-named Fort Humphreys in 1922, and became Fort Belvoir in 1935. Since 1935, Fort Belvoir has supported major U.S. military operations throughout the world.

Fort Belvoir consists of more than 8,200-acres on Main Post and an 800-acre detachment parcel, Fort Belvoir North Area (FBNA), which is located on the west side of Interstate 95 as in Figure 1. The Main Post is situated between Interstate 95 and Pohick Bay and Gunston Cove on the Potomac River. US Route 1 divides the Main Post into two distinct geographical areas, referred to as North Post and South Post.

In recent years, Fort Belvoir has functioned primarily as an administrative and logistics support center for the Army and as a host for over 100 tenant organizations from various government branches (including all branches of the armed services). It currently employs more than 39,000 civilian and military personnel, and provides support services for over 200,000 military personnel, dependents, and retirees in the region. Development along US Route 1 consists of mixed-use commercial businesses and scattered residences. The surrounding area is developed with residential and commercial/retail businesses.

Tidewater was contracted to Fort Belvoir Directorate of Public Works, Environmental and Natural Resources Division (DPW-ENRD) under the Contract Number W91QV1-12-F-0234. Tidewater prepared this document in order to support DPW-ENRD's on-going environmental stewardship satisfying the Potomac River Watershed polychlorinated biphenyl (PCB) total maximum daily load (TMDL) requirements in accordance with General Permit VAR04 (4VAC50-60-1240) Section 1B from Virginia Department of Environmental Quality (VADEQ) Department of Conservation and Recreation (DCR). The following four tasks were completed:

- A PCB historic use inventory identified sites where PCBs are currently stored or have been historically stored, transferred, transported or spilled in a manner that would expose them to precipitation.

- A PCB historical use analysis evaluated lines of evidence to determine which sites, if any, identified in the inventory required sampling. For those sites requiring sampling, recommended sampling locations were determined.

- Best Management Practices (BMPs) at each site were evaluated and existing BMPs from the Municipal Separate Storm Sewer System (MS4) program plan were evaluated to determine if they sufficiently address the PCB concerns. Where applicable, recommendations were made for which general and site specific BMPs that could be implemented.

- A sampling plan (this action plan) was developed that summarized the findings of the above tasks and documented detailed plans for future PCB sampling required in accordance with MS4 General Permit Conditions.

SES Construction and Fuel Services LLC (SCF) was tasked with reviewing and updating the March 2013 PCB TMDL Action Plan as per Section I.B of Fort Belvoir's current General VPDES Permit for discharges of Stormwater from Small MS4's (VAR040093) issued by the VADEQ on July 1st, 2013

(9VAC25-890-40). As a result of Chapters 756 and 793 of the 2013 Acts of Assembly, oversight of water quality planning and laws dealing with stormwater management, erosion and sediment control, and the Chesapeake Bay Preservation Areas has been transferred from the DCR to the VADEQ and State Water Control Board. (VADEQ, 2013)

In the 2016 Update to the Fort Belvoir PCB TMDL Action Plan, special consideration was given to the requirements of the Final Individual VPDES Industrial Stormwater (ISW) Major Permit (VA0092771), issued December 9th, 2016 and effective January 1st, 2017. The ISW Major Permit covers industrial discharges from 31 Representative Outfalls (RO) across the installation. All covered ISW outfalls are shown in Figure 2 along with the historic PCB contamination sites discussed in detail below.

In order to achieve this SCF performed the following tasks:

- Addressed VADEQ comments received in the Local TMDL Plan Approval letter dated December 16th, 2015 and available in Appendix D
- Reviewed historic PCB sites current remediation status and evaluated for any necessary updates or changes to the Action Plan
- Evaluated drainage areas for 31 ISW outfalls for upstream contributions from known historic PCB contaminated sites
- Evaluated PCB sampling results from Fort Belvoir for compliance with TMDL goals
- Evaluated effectiveness of BMPs to meet water quality standards and updated the status of implementation of proposed BMPs

In this 2020 Update to the Fort Belvoir PCB TMDL Action Plan, the plan was reviewed and updated to address new and changing requirements due to the reissuance of the MS4 General Permit which became effective in November of 2018. The 2018-2023 MS4 General Permit Part II.B.1.a requires that the PCB TMDL plan be updated to meet conditions of Part II.B.6 and B.7.

SCF performed the following tasks in this 2020 review and update to the PCB TMDL Action Plan:

- Reviewed and updated historic PCB sites current remediation status and evaluated for any necessary updates or changes to the Action Plan
- Evaluated PCB sampling results from Fort Belvoir for compliance with TMDL goals
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- Evaluated effectiveness of BMPs to meet water quality standards and updated the status of implementation of proposed BMPs
- Updated all Permit references to reflect the 2018-2023 MS4 General Permit Requirements
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- Updated Reporting to include Part II.B.6.b requirements for notification of new site to VADEQ
- Added Public Comment information as per Part II.B.7

2. LEGAL AUTHORITIES

2.1. TOXIC SUBSTANCES CONTROL ACT (TSCA), 15 USC 2605

The principal federal law regulating PCBs is the Toxic Substances Control Act (TSCA) and its implementing regulations, found in 40 CFR 761. Congress enacted the TSCA to control the distribution, use, and disposal of harmful chemicals, including PCBs. Through TSCA, Congress established a number of requirements for identifying and controlling toxic chemical hazards that pose risks to human health and the environment.

Because they are regulated under TSCA, PCBs are not considered hazardous wastes under Subtitle C of the Resource Conservation and Recovery Act (RCRA). PCB wastes can become hazardous wastes if they are mixed with a listed hazardous waste (regulated under the RCRA mixture rule) or they exhibit a characteristic of hazardous waste (regulated under RCRA). Under 40 CFR Part 261.8, the disposal of PCB-containing dielectric fluids regulated under TSCA that are hazardous only for the toxicity characteristic, is exempt from RCRA.

Subpart D of TSCA regulates the storage and disposal of PCBs as well as provides cleanup and disposal options for PCB remediation waste. New disposal options for PCB remediation wastes are implemented in 40 CFR 761.61. This section includes instructions for self-implementing cleanup and disposal of PCB remediation waste for a moderately sized site where there should be low residual environmental impact from remedial activities. This regulation also provides for performance-based disposal of PCB remediation waste adhering to the cleanup standards listed in the regulations. Section 761.61(b) states that disposing of PCB remediation waste shall be done according to § 761.60(a) or (e), or decontaminated it in accordance with § 761.79. EPA regulations under TSCA in turn allow discharge of water to a treatment works or navigable waters if the PCB concentration is less than 3 µg/L (ppb), or if the concentration complies with a PCB water discharge limit in the discharger's CWA permit [40 CFR 761.79(b)(1)(ii)]. (U.S. EPA, 2011)

2.2. SECTION 303(D) OF THE CLEAN WATER ACT (CWA) AND THE U.S. ENVIRONMENTAL PROTECTION AGENCY'S (EPA'S) WATER QUALITY PLANNING AND MANAGEMENT REGULATIONS (40 CFR PART 130)

The CWA and EPA's Management regulations direct States to identify and list water bodies in which current required controls of a specified pollutant are inadequate to achieve water quality standards. For the Commonwealth of Virginia, Impaired waters are outlined in the biennial Virginia Water Quality Assessment 305(b)/303(d) Integrated report. Segment VAN-A15R-01 of Accotink Creek (See Figure 2-1) was first listed as impaired for bacteria on Virginia's 2004 305(b)/303(d) Water Quality Assessment Integrated Report.

States are then required to establish a Total Maximum Daily Loads (TMDLs) for water bodies that are exceeding water quality standards. TMDLs represent the total pollutant loading that a water body can receive without violating water quality standards. The TMDL process establishes the allowable loadings of pollutants waste load allocation (WLA) needed to achieve and maintain water quality standards. In September 2007, the PCB TMDL for Tidal Portions of the Potomac and Anacostia Rivers was developed by Interstate Commission on the Potomac River Basin. The U.S. EPA approved the TMDL on October 31st 2007 and the State Water Control Board (SWCB) approved the TMDL shortly after on April 11th, 2008. The allocated PCB load from direct drainage sources in the Potomac Watershed was set for four impaired water bodies receiving discharges from Fort Belvoir including Accotink Creek, Dogue Creek, Pohick Creek, and Gunston Cove.

2.3. SECTION 311 OF THE CWA AND EPA'S OIL POLLUTION PREVENTION REGULATIONS (40 CFR PART 112)

The Clean Water Act (CWA) Section 311(b) (2) (A) requires EPA to compile a list of hazardous substances which, when discharged to navigable waters or adjoining shorelines, present an imminent and substantial danger to the public health or welfare. This includes danger to fish, shellfish, wildlife, and beaches. These hazardous substances have been listed in tables A and B of 40 CFR 116.4, and includes PCBs (CAS no. 1336363). EPA's Oil Pollution Prevention regulation establishes requirements for facilities to prevent oil spills from reaching navigable waters of the United States or adjoining shorelines, or certain other areas. 40 CFR 112.1(c) requires federal facilities to fully prepare and implement a Spill Prevention, Control, and Countermeasure (SPCC) Plan.

Fort Belvoir has prepared this in the form of The Fort Belvoir Master Spill Plan (MSP) which establishes procedures, methods and equipment, and other requirements to prevent the discharge of oil and hazardous substances from facilities associated with Fort Belvoir. This Plan identifies potential spill sources, preventive measures, control and response procedures, inspection programs, and required training of personnel. PCBs are considered under section 6.3 of the MSP as a possible potential source of spills but it was determined that:

> *"Fort Belvoir no longer owns or operates Qualified Oil-filled Operational Equipment (PCB or non-PCB containing transformers). The electrical distribution system at Fort Belvoir was privatized to Dominion Virginia Power (DVP) in 2008. All transformers on Fort Belvoir are the property of DVP and are subject to their own regional SPCC plan."*

2.4. 40 CFR §122.44 ESTABLISHING LIMITATIONS, STANDARDS AND OTHER PERMIT CONDITIONS APPLICABLE TO STATE NPDES PROGRAMS

Section (d) (1) (vii) (B) requires that all new or revised National Pollutant Discharge Elimination System (NPDES) permits must be consistent with assumptions and requirements of any applicable TMDL WLA. The Commonwealth of Virginia, Virginia Department of Environmental Quality (VADEQ), regulates the management of pollutants carried by stormwater runoff under the Virginia Pollutant Discharge Elimination System (VPDES) program.

2.5. US ARMY REGULATION (AR) 200-1, ENVIRONMENTAL PROTECTION AND ENHANCEMENT

The AR 200-1 defines the framework for the Army Environmental Management System (EMS). It implements Federal, State, and local environmental laws and DOD policies for preserving, protecting, conserving, and restoring the quality of the environment. This regulation addresses environmental responsibilities of all Army organizations and agencies. Specifically, this regulation applies to Active Army, Army National Guard, United States Army Reserve, as well as Tenants, contractors, and lessees performing functions on real property under the jurisdiction of the Department of the Army (for example, Army and Air Force Exchange Services (AAFES), Defense Commissary Agency (DECA)) (Army, 2007). Chapter 4-2 of the AR requires compliance with all requirements, substantive and procedural, for control and abatement of water pollution, as outlined in the CWA, including implementation of TMDL regulations.

AR 200-1 also sets program requirements and policies in regards to material management in Chapter 9 covering toxic substances including PCBs. Army policy is for generators of PCBs to manage them in place unless operational, economic, or regulatory considerations justify removal. Economic analyses include potential environmental damage (AR 200-1 9-2.c (1)). The major goal for the program is to

prevent human exposure to PCB hazards, remain compliant with all Federal, State, and Local regulations while prohibiting the new use and introduction of PCBs at Army Facilities.

2.6. FORT BELVOIR GENERAL VPDES PERMIT FOR DISCHARGES OF STORMWATER FROM SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4), MS4 GENERAL PERMIT NO. VAR040093

As required by Fort Belvoir's MS4 permit, TMDL WLAs are specifically addressed through the iterative implementation of programmatic Best Management Practices (BMPs). Only failure to implement the programmatic BMPs identified in this plan would be considered a permit noncompliance issue. The special conditions found within the 2013-2018 General VPDES Permit for Discharges of Stormwater from an MS4 at 9VAC25-890-40 Section I.B. were stated as follows:

> *"The operator shall maintain an updated MS4 Program Plan that includes a specific TMDL Action Plan for pollutants allocated to the MS4 in approved TMDLs. TMDL Action Plans may be implemented in multiple phases over more than one state permit cycle using the adaptive iterative approach provided adequate progress to reduce the pollutant discharge in a manner consistent with the assumptions and requirements of the specific TMDL wasteload is demonstrated in accordance with subdivision 2 e. of this subsection. These TMDL Action Plans shall identify the best management practices and other interim milestone activities to be implemented during the remaining terms of this state permit."*

This permit was reissued for another 5-year cycle under the same permit number VAR040093 in November of 2018. The updated regulations found in 9VAC25-890-40, effective November 1, 2018 to October 31, 2023, closely mimics the 2013-2018 Permit. In Part I.B it states:

> *"The MS4 program shall include the minimum control measures (MCM) described in Part I E. For the purposes of this permit term, implementation of MCMs in Part I E and the Chesapeake Bay and local TMDL requirements in Part II (as applicable) consistent with the provisions of an iterative MS4 program required pursuant to this general permit constitutes compliance with the standard of reducing pollutants to the "maximum extent practicable," provides adequate progress in meeting water quality standards, and satisfies the appropriate water quality requirements of the State Water Control Law and its attendant regulations."*

In addition, Part II.B.7 of the 2018-2023 MS4 General Permit now requires a minimum of 15 of public comment to the Fort Belvoir public, and states:

> *"Prior to submittal of the action plan required in Part II B 1, the permittee shall provide an opportunity for public comment proposed to meet the local TMDL action plan requirements for no less than 15 days."*

2.7. FORT BELVOIR INDIVIDUAL VPDES FOR DISCHARGES OF INDUSTRIAL STORMWATER (ISW) INDIVIDUAL MAJOR PERMIT NO. VA0092771

The free-flowing portion of Accotink Creek and the tidal portions of Accotink Bay, Gunston Cove, and Dogue Creek are listed with PCB impairments. Due to this, Fort Belvoir is a candidate for low-level PCB monitoring based on the historical activities associated with PCBs and resulting contamination. As such, Part I.C.4 of the ISW major permit, effective January 1st, 2017, requires the development of a plan for PCB sampling at outfalls located downstream of all known historically contaminated sites. As such, this Action Plan evaluates the drainage areas associated with each permitted ISW outfall for the presence of historic PCB sites located upstream and their possible contribution to the discharge from each permitted

ISW outfall. Special conditions of the permit require that corrective actions and exceedance reporting be done if:

> *"At any time monitoring results indicate that stormwater discharges from a facility exceed a TMDL wasteload allocation of the DEQ Northern Regional Office (NRO) determines that discharges form the facility are causing or contributing to an exceedance of a water quality standard."*

2.8. FORT BELVOIR RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) PART B PERMIT FOR STORAGE AND CORRECTIVE ACTION

The Fort Belvoir Hazardous Waste Management Permit for Storage and Corrective Action was issued by the VADEQ and became effective August 10th, 2015. It authorizes Fort Belvoir to manage hazardous wastes for 1 year at Building 1490 in accordance with RCRA and applicable provisions of 9VAC 20-60. Building 1490 stopped receiving wastes in 2011 and was closed and decontaminated. Building 1490 received Final Closure by VADEQ in September 2019 and the is now slated for demolition.

Module IV of the Permit details the requirements of site wide (Fort Belvoir) corrective actions to be taken to protect human health and the environment from all releases of hazardous waste or constituents from any solid waste management unit (SWMU) or Areas of Concern (AOC). Module IV requires that a RCRA Facility Investigation (RFI) be conducted for any potential releases at SWMUs and/or AOCs and states that:

> *"The purpose of the RFI is to determine the nature and extent of potential releases from SWMUs and AOCs, to screen SWMUs and AOCs from further investigation, and to determine whether interim/stabilization measures are necessary. The RFI includes the collection of site specific data and an evaluation of potential impacts to human health and the environment from potential contamination from the facility. The RFI will gather all data necessary for the VADEQ/EPA Region 3 to determine whether a Corrective Measures Study (CMS) is required."*

All SWMUs, new and old, on Fort Belvoir are managed as per Module IV of the RCRA Part B Permit, including those of historic PCB releases addressed in this PCB TMDL Action plan. If VADEQ or EPA Region 3 determine, on the basis of the RFI or any other information, that corrective measures are necessary the procedures outlined in Section IV.G of the permit will be followed until the site receives concurrence of closure.

2.9. MS4 PROGRAM PLAN

The MS4 Program plan documents Fort Belvoir's compliance with Section II.A of the 2013-2018 MS4 General Permit and Part I.B and Part I.C of the 2018-2023 MS4 General Permit. The plan is revised at least annually as required by Part I.C.4. The Program Plan satisfies the requirements of this section as well as the appropriate water quality requirements of the Clean Water Act and regulations in the absence of a TMDL WLA. The Plan includes six (6) minimum control measures as listed in Part I.E and details the implementation of best management practices to reduce pollutants, protect water quality, and ensure compliance with water quality standards. As per Section II.A:

> *"The requirements of this section and those special conditions set out in Section I B also apply where a WLA is applicable."*

As per Section I.B of the 2013-2018 MS4 general permit, the approved 2013 PCB TMDL Action Plan is incorporated into the current MS4 Program Plan by reference. The PCB TMDL plan was updated in 2018 and subsequently, the MS4 Program plan was updated to reference the January 2018 Plan which replaced the requirements of the 2013 plan.

The new 2018-2023 MS4 General Permit has similar conditions specified in Part II.B.8 which states:

> *"The MS4 program plan as required by Part I B of this permit shall incorporate each local TMDL action plan. Local TMDL action plans may be incorporated by reference into the MS4 program plan provided that the program plan includes the date of the most recent local TMDL action plan and identification of the location where a copy of the local TMDL action plan may be obtained."*

Once this 2020 update has gone through the minimum 15-day public comment period as specified in Part II.B.7 and becomes final, the MS4 Program Plan will be updated to incorporate the date of the 2020 update and identify a location where the plan can be obtained.

2.10. FORT BELVOIR PCB TMDL ACTION PLAN

This action plan addresses the requirement to minimize the pollutant of concern, PCB, by identifying legal authorities, Best Management Practices (BMPs) and measurable goals for achieving compliance with the approved PCB TMDL Implementation Plan in accordance with the 2013-2018 9VAC25-890-40, Section I.B. Special Conditions for Approved Total Maximum Daily Loads of the General VPDES Permit for Discharges of Stormwater from Small MS4s, Permit VAR040093. As per Section I.B.1.c of the MS4 permit:

> *"Unless specifically denied in writing by the department, TMDL Action Plans and updates developed in accordance with this section become effective and enforceable 90 days after the date received by the department"*

These regulations were updated in November 2018, in accordance with the reissuance of Permit VAR040093, effective 2018-2023 Part II.B.1.a:

> *"the permittee shall update the previously approved local TMDL action plans to meet the conditions of Part II B 3, B 4, B 5, B 6, and B 7 as applicable, no later than 18 months after the permit effective date and continue implementation of the action plan"*

Part II.B.6 of the 2018-2023 Permit specifically covers requirements for Polychlorinated biphenyl (PCB) TMDLs.

This plan also takes into account the ISW Major Permit (VA0092771) requirements of Part I.C.4 to characterize stormwater runoff and develop a plan for PCB sampling at permitted outfalls located downstream from all known historically contaminated sites. The sampling requirements set by this plan will be incorporated into the appropriate facility SWPPPs located in the drainage areas for outfalls requiring characterization or monitoring. As per Part III.C of the ISW permit:

> *"All plans incorporated by reference into the stormwater pollution prevention plan become enforceable under this permit."*

2.11. FORT BELVOIR GARRISON POLICY MEMORANDUM #28, ENVIRONMENTAL POLICY

Fort Belvoir's Environmental Policy was signed and took effect on June 24th, 2014, the most up to date policy can be seen in Appendix E. Section 4 of this policy restates Fort Belvoir's commitment to the protection of the environment and accountability for its decisions. In support of this environmental policy, Fort Belvoir will Comply with legal and other requirements applicable to the conduct of Fort Belvoir's mission while continually improving Fort Belvoir's environmental performance, including:

> *"Proactively manage environmental issues and act promptly and responsibly to correct incidents or conditions that endanger health, safety, or the environment."*

This policy provides an avenue of enforcement for requirements set forth by AR 200-1.

2.12. FORT BELVOIR GARRISON POLICY MEMORANDUM #71, STORMWATER POLLUTION PREVENTION

An installation-wide stormwater policy was developed to address compliance with the MS4 Permit, the ISW major permit and other stormwater regulations. The policy was signed and took effect on October 31st, 2016 and the most up to date policy can be seen in Appendix E. The policy outlines proper protocols for minimizing stormwater pollution during activities that directly and indirectly impact water quality of the receiving waters. Section 5 of this policy states:

> *"Fort Belvoir is committed to protecting water quality of waterways on and surrounding Fort Belvoir to ensure that human health, ecosystem health, and the ability to conduct recreational opportunities are not impacted by stormwater pollution"*

This policy provides an avenue of enforcement for requirements set forth by Fort Belvoir's CWA permits, the MSP, and Fort Belvoir's Hazardous Waste Management and Minimization Plan (HWMMP).

2.13. FORT BELVOIR POLICY MEMORANDUM #72, HAZARDOUS WASTE MANAGEMENT AND MINIMIZATION POLICY

A hazardous waste minimization program has been developed for Fort Belvoir to meet the certification requirements of Section 3002(b) of the RCRA. The Fort Belvoir Hazardous Waste Management and Minimization Plan (HWMMP) details the program requirements for hazardous waste minimization and management as per AR 200-1 Chapter 10. The HWMMP outlines proper protocols for reducing the volume and toxicity of waste generated as well procedures for hazardous waste management including storage, handling, disposal, and training requirements. Section 11.6 of the HWMMP identifies PCBs as a possible waste stream at Fort Belvoir due to the possibility of PCB containing equipment being discovered during maintenance of older facilities, even though no known remaining PCB items are in service or storage on the installation (URS, 2014). Section 12.28 of the HWMMP contains more details regarding the handling and specific management practices for PCB

Policy memorandum #72 was developed to address compliance with the RCRA requirements and applies to any agency, activity, company, or individual performing any and all types of hazardous waste and management on Fort Belvoir. The policy was signed and took effect on August 23rd, 2016 and the most up to date policy can be seen in Appendix E. Section 4.b of this policy requires that:

> *All commanders and supervisors on Fort Belvoir shall ensure implementation of all requirements of the plan that area applicable to their operations."*

This policy provides an avenue of enforcement for requirements set forth by Fort Belvoir's RCRA Part B Permit and HWMMP.

All current Garrison policies can be found in full at http://www.belvoir.army.mil/Belvoir/PL/_PDF_TableofContentsPL.html.

3. PCB CHARACTERISTICS AND FATE AND TRANSPORT

PCB is a commonly used abbreviation of the formal name of a group of synthetic organic chemicals called polychlorinated biphenyls. PCB mixtures are made up of 209 possible congeners that describe a specific molecular configuration of up to 10 chlorine atoms substituted on two benzene rings (ATSDR 2001). PCB congeners with the same number of chlorine atoms are grouped into subcategories referred to as PCB homologs (U.S. EPA, 2012a). Mixtures of PCB congeners were manufactured and sold in the U.S. starting in 1929 under a variety of trade names, the most common being the Aroclor series (U.S. EPA, 2012b).

Between 1929 and 1979, PCBs were used for a variety of purposes but were found primarily in closed systems and heat transfer fluids such as those found in transformers, capacitors and fluorescent light ballasts. PCBs were also incorporated in some plasticizers as well as hydraulic fluids and lubricants. (Oregon DEQ, 2012). Prior to the regulation of PCBs under the Toxic Substances Control Act (TSCA) in 1976, PCBs were released (both accidentally and intentionally) into the atmosphere, water, and land through sewers, smokestacks, stormwater runoff, spills, and direct application to the environment (for example, to reduce dust emissions and to extend the life of some agricultural pesticide formulations) (Flynn, 1997).

Since PCBs do not naturally occur in the environment, PCBs detected in air, water and soil are a result of activities relating to the manufacture, use, and disposal of PCBs. In the past, PCBs have entered the environment during accidental spills and leaks during PCB transporting or from leaks and fires in products containing PCBs. Today, PCBs still enter the environment from a variety of sources including hazardous waste sites, improper industrial or commercial waste disposal, and uncontained leaks from old electrical transformers. (ATSDR, 2001)

PCBs have a relatively low vapor pressure that reduces their potential to volatilize. They are also non-polar and therefore are only slightly soluble. This non-polarity and low solubility makes PCBs bind strongly to soils and sediment, inhibiting transport from soils to water (groundwater or surface water). PCBs enter surface waters carried by contaminated soil particles via surface water runoff (Oregon DEQ, 2012). Reducing the potential for sediment transport (erosion) at PCB sites greatly reduces the potential for PCB contributions to surface water. Remediated soil or soil with very low levels of contamination can be capped with a clean layer of soil and other materials, such as asphalt. Capping is a common way to isolate contaminated soils and prevents direct contact of surface waters with the PCB contaminated soils, inhibiting transport. (VADEQ, 2016)

Without remediation, PCBs can remain in the environment for a very long time because they are very stable and do not readily breakdown. Generally, the more chlorine atoms that the PCBs contain, the more slowly they break down Although PCBs have a strong affinity for sediment, small amounts of PCBs are released from sediments to water over time, therefore PCBs can also bioaccumulate in fish (ATSDR, 2001). Concerns over bioaccumulation of PCBs in fish led to the development of PCB total maximum daily loads (TMDLs) for PCB impaired water bodies.

4. POTOMAC WATERSHED PCB TMDL APPLICABILITY TO FORT BELVOIR

The TMDL of PCBs for tidal portions of the Potomac and Anacostia Rivers in the District of Columbia, Maryland, and Virginia, was approved by the EPA in September 2007. TMDL strategies were developed by the Interstate Commission on the Potomac River Basin as a joint effort for the regulatory agencies the District of Columbia Department of the Environment (DDOE), the Maryland Department of the Environment (MDE), and the VADEQ (Interstate Commission on the Potomac River Basin, 2007). The purpose of the TMDL development is to address water bodies impaired by PCBs in accordance with Clean Water Act (CWA) Section 303(d) and U.S. EPA regulations at 40 CFR §130.7(c)(1) to prevent PCB concentrations in fish from exceeding jurisdictional thresholds for human consumption.

Baseline and TMDL PCB concentrations were determined for 28 impaired water bodies within the Potomac and Anacostia Rivers watershed. The TMDLs are the sum of waste load allocations (WLA), load allocations (LA), and a margin of safety (MOS). WLAs cover permitted point sources that potentially contribute PCB loads including wastewater treatment plants, regulated stormwater (MS4 permits), and combined sewer overflows. LAs include possible PCB loads from tributaries, non-point source runoff, atmospheric deposition to tidal water surface, and identified contaminated sites. MOS refers to uncertainty in relationship between pollutant loads and quality of receiving water.

The Fort Belvoir MS4 permit falls under the WLA portion of the TMDL. While individual wastewater treatment plants are assigned a specific maximum load and target reduction and combined sewer overflow (CSOs) are assigned a percent reduction, possible contributions from regulated stormwater are addressed by Best Management Practices (BMPs). The 2007 Potomac Watershed PCB TMDL study states that "Upon approval of the TMDL 'National Pollutant Discharge Elimination System (NPDES)-regulated municipal stormwater and small construction storm water discharges effluent limits should be expressed as BMPs or other similar requirements, rather than as numeric effluent limits' (U.S. EPA 2002)." (Interstate Commission on the Potomac River Basin, 2007). The 2007 PCB TMDL study also states, "The U.S. EPA recognizes that available data and information are usually not detailed enough to determine WLAs for NPDES regulated stormwater discharges on an outfall-specific basis (U.S. EPA, 2002). Therefore, in the tidal Potomac watershed, loads from the regulated NPDES stormwater outfalls will be expressed as a single stormwater WLA for each impaired water body." (Interstate Commission on the Potomac River Basin, 2007).

Any future estimates of PCB contributions from Fort Belvoir MS4 permit discharges will be compared to the potentially impacted water body WLA to determine if further action is required. The impaired water bodies under the Fort Belvoir MS4 permit coverage include Accotink Creek, Dogue Creek, Pohick Creek, and Gunston Cove. The permitted stormwater WLA for each of these impaired water bodies is presented in Table 1. The water bodies are presented in Figure 2.

Table 1: Stormwater WLA for Impaired Water bodies Impacted by Fort Belvoir

Impaired Water bodies	Units	Waste Load Allocation for Regulated Stormwater
Accotink Creek	g PCBs/year	0.0992
Dogue Creek	g PCBs/year	20.2
Gunston Cove	g PCBs/year	0.517
Pohick Creek	g PCBs/year	7.58

Source: Interstate Commission on the Potomac River Basin, 2007.

5. FORT BELVOIR PCB TMDL ACTION PLAN

This plan was written and updated in compliance with Section I.B of Fort Belvoir 2013-2018 General VPDES Permit VAR040093, which requires the operator to maintain an updated Program Plan that includes a specific TMDL Action Plan for pollutant allocated to the MS4 in approved TMDLs, such as PCBs. The MS4 General Permit (9VAC25-890-40) was updated in 2018 and reissued to Fort Belvoir in November of 2018. Part II.B of the 2018-2023 MS4 General permit specifies the requirements for updates to local TMDL plans and specific requirements for the PCB TMDL Plans.

Table 2 below summarizes the requirements of both the 2013-2018 and 2018-2023 General MS4 Permits and how they have been addressed in this Action Plan. As mentioned in Section 1 special considerations have also been given to the requirements found in the Individual ISW Major Permit (VA0092771) which covers discharges from 31 Industrial facilities, including some of which are historic PCB sites.

Table 2: Summary of 2016 and 2020 Plan Updates

2013-2018 MS4 Permit Citation	Action Items	Plan Section
Section 1.B.1.a	Update Plans to address any new or modified requirements established for pollutants identified in TMDL waste load allocations approved prior to July 9, 2008 (i.e. PCB)	Updates to the Plan (All Sections)
Section 1.B.2.a	Develop and maintain a list of its legal authorities such as ordinances, state and other permits, orders, specific contract language, and inter-jurisdictional agreements applicable to reducing PCB	Legal Authorities (Section 2)
Section 1.B.2.d	Assess all significant sources of PCBs from facilities of concern owned or operated by the MS4 operator that are to covered under a separate VPDES Permit	Update to PCB Historic Use Inventory Summary, Summary of Resource Conservation and Recovery Act (RCRA) Closure review and Site Analysis, (Sections 6, 7, 8)
Section I.B.6	Identify the BMPs and other steps that will be implemented during the next state permit term. - Determine if BMPs currently being used are sufficient to address PCB issues and meet TMDL goals	Update to BMP Evaluation (Sections 9.1.3, 9.2)
Sections I.B.2.e and I.B.7	Develop and implement a method to assess TMDL Action Plans for their effectiveness and provide an Estimated end date for achieving the applicable WLA - Develop and implement a schedule to minimize discharge of PCBs.	Update to Sampling and Analysis Plan (Section 10)

2018-2023 MS4 Permit Citation	Action Items	Plan Section
Part II.B.1.a.	For TMDLs approved by the EPA prior to July 1, 2013, and in which an individual or aggregate wasteload has been allocated to the permittee, the permittee shall update the previously approved local TMDL action plans to meet the conditions of Part II B 3, B 4, B 5, B 6, and B 7 as applicable, no later than 18 months after the permit effective date and continue implementation of the action plan;	Updates to the Plan (All Sections)
Part II.B.3	Each local TMDL action plan developed by the permittee shall include the following: a. The TMDL project name; b. The EPA approval date of the TMDL; c. The wasteload allocated to the permittee (individually or in aggregate), and the corresponding percent reduction, if applicable; d. Identification of the significant sources of the pollutants of concern discharging to the permittee's MS4 and that are not covered under a separate VPDES permit. For the purposes of this requirement, a significant source of pollutants means a discharge where the expected pollutant loading is greater than the average pollutant loading for the land use identified in the TMDL; e. The BMPs designed to reduce the pollutants of concern in accordance with Parts II B 4, B 5, and B 6; f. Any calculations required in accordance with Part II B 4, B 5, or B 6; g. For action plans developed in accordance with Part II B 4 and B 5, an outreach strategy to enhance the public's education (including employees) on methods to eliminate and reduce discharges of the pollutants; and h. A schedule of anticipated actions planned for implementation during this permit term.	a. Title and throughout Plan b. Potomac Watershed PCB TMDL Applicability to Fort Belvoir (Section 4) c. Potomac Watershed PCB TMDL Applicability to Fort Belvoir (Section 4) d. PCB Historic Use Inventory Analysis (Section 6) e. Summary of RCRA Closure Review and Site Analysis (Section 7); Best Management Practices (BMPS) Analysis and Implementation Plan (Section 9) f. Not applicable g. Not Applicable h. BMP Recommendations Summary and Implementation Plan (Section 9.2); Sampling and Analysis Plan (Section 10)

Part II.B.6.a	For each PCB TMDL action plan, the permittee shall include an inventory of potentially significant sources of PCBs owned or operated by the permittee that drains to the MS4 that includes the following information: 1) Location of the potential source; 2) Whether or not the potential source is from current site activities or activities previously conducted at the site that have been terminated (i.e. legacy activities); and 3) A description of any measures being implemented or to be implemented to prevent exposure to stormwater and the discharge of PCBs from the site.	1) Figure 2 2) PCB Historic Use Inventory Analysis (Section 6) 3) Summary of RCRA Closure Review and Site Analysis (Section 7); Best Management Practices (BMPS) Analysis and Implementation Plan (Section 9)
Part II.B.6.b	If at any time during the term of this permit, the permittee discovers a previously unidentified significant source of PCBs within the permittee's MS4 regulated service area, the permittee shall notify DEQ in writing within 30 days of discovery.	Reporting (Section 10.2)
Part II.B.7	Prior to submittal of the action plan required in Part II B 1, the permittee shall provide an opportunity for public comment proposed to meet the local TMDL action plan requirements for no less than 15 days.	Public Comment (Section 12)
Part II.B.8	The MS4 program plan as required by Part I B of this permit shall incorporate each local TMDL action plan. Local TMDL action plans may be incorporated by reference into the MS4 program plan provided that the program plan includes the date of the most recent local TMDL action plan and identification of the location where a copy of the local TMDL action plan may be obtained.	MS4 Program Plan (Section 2.9)
Part II.B.9	For each reporting period, each annual report shall include a summary of actions conducted to implement each local TMDL action plan.	Reporting (Section 10.2)
ISW Permit Citation	**Action Items**	**Plan Section**
Section I.C.4	Characterize Stormwater runoff and develop a plan for PCB sampling at outfalls located downstream from all known historically contaminated sites	Update to Summary of RCRA closure review and site analysis (Section 7), Update to BMP Evaluation (Sections 9), and Update to Sampling and Analysis Plan (Section 10)

6. PCB HISTORIC USE INVENTORY ANALYSIS

The historic use inventory conducted in 2012 by Tidewater resulted in the identification of 11 sites where PCBs were currently or have been historically stored, transferred, transported, or spilled in a manner that would have exposed them to precipitation. During the 2016 inventory update SCF identified 3 additional sites that have been found through field investigations done by installation personnel that may be exposed to precipitation potentially posing risks to human health or the environment.

The 14 sites evaluated in this Action Plan are listed in Table 3 below along with the site descriptions, site solid waste management unit (SWMU) IDs, if the site is closed or new, and a brief description of known PCB activity at the site. All these sites are considered 'legacy sites' defined in Part II.B.6.a.(2) because activities previously conducted at the site that have been terminated. The relative locations of all 14 sites at Fort Belvoir are illustrated in Figure 2.

Table 3: List of PCB Historic Use Sites

Site Descriptions	SWMU IDs	Historic Use	PCB Activity
Former Coal Storage Area	**A23**	Closed	Transformer storage - One time PCB Spill
Former Defense Property Disposal Office (DPDO) Storage Area	**A24**	Closed	Transformer storage - One time PCB Spill
Former BLDG632 Hazardous Waste Storage Area	**B03**	Closed	Storage included PCB contaminated materials
Former BLDG633 Hazardous Waste Storage Area	**B04**	Closed	Storage included PCB contaminated materials
Former Building 1430 Transformer Storage Area	**B09**	Closed	Transformer storage - Some transformers contained PCBs, staining from leaks observed
Building 190 Former Indoor Storage Room	**B10**	Closed	Storage included PCB containing equipment
Former Asphalt Storage Pad near Building 2596	**L03***	Closed	Transformer storage - PCB content unknown, staining from leaks observed
Hangar 3126 Former outdoor concrete pad transformer area	**L04**	Closed	Transformer location - Some transformers contained PCBs, staining from leaks observed
Former Concrete Pad Transformer Storage Area	**L47**	Closed	Transformer storage - Some transformers contained PCBs, staining from leaks observed
Building 1490 Hazardous Material Storage Area	**N13**	Closed	Storage included PCB contaminated materials
Building 1495 Outdoor Transformer Storage Area	**MP11**	New	Transformer storage - Some transformers contained PCBs, leaks and staining observed
249th Motorpool Area Stream Contamination	**MP12**	New	Discarded barrels found in stream containing low level PCBs
Theote Road/Warren Road Wash Yard	**MP13**	New	PCBs transferred to soils via contaminated wash water

Site Descriptions	SWMU IDs	Historic Use	PCB Activity
Building 2476 Former Hazmat Storage Locker	**MP14**	New	Storage included PCB containing materials
***NOTE: L03 is considered a "legacy site" due to the fact that this parcel of land is no longer a part of Fort Belvoir, is not included in Belvoir's land use inventory and is not covered by either the MS4 or ISW permits. HECSA has owned and operated this area since 1981.**			

Of the 11 historic sites evaluated in 2012 by Tidewater, PCBs were actively used in transformers at one site, Hanger 3126 (L04). At the remaining 10 sites, PCBs were not in active use, but were stored usually in the form of transformers that contained PCBs. PCBs were officially reported as spilled in a manner that would expose PCBs to precipitation at two (2) sites, the Former Coal Storage Area (A23), and the Former Defense Property Disposal Office (DPDO) Storage Area (A24). During past site visits, transformer leaks or evidence of past leaks in the form of stains were observed at four (4) locations: Building 1430 (B09) (CH2M Hill, 1992), Building 2596 (L03) (Kearney, 1988), Hanger 3126 (L04) (CH2M Hill, 1992), and Former concrete pad (L47) (Kearney, 1988). The citations reference the most recent site visit during which evidence of leaks was observed. No evidence of past leaks was observed at these sites during a November 2012 site visit made by representatives from Fort Belvoir and Tidewater. On November 5, 2013, representatives from Fort Belvoir and Tidewater completed the site visit ORI visiting of 10 of the 11 PCB sites. Details from the ORI are documented in Appendix B.1. A recent transformer leak was observed between June and October 2012 at Building 1495 with staining visible and containment measures in place as of November 2012.

During the 2018 update all 11 previously identified sites were relooked at for updated remediation progress status and 3 new sites were investigated for their potential contribution of PCBs to impaired waters. Since November 2012 the Fort Belvoir Restoration Program has made significant progress in addressing historic PCB contamination sites through the use of capping and excavation of contaminated soils. The transformer spill site at Building 1495 previously noted in the October 2012 Tidewater site visit has since received a SWMU ID (MP11). Evidence of historical spills, leaks, and improper storage of PCB contaminated material was discovered through field investigations at 3 new sites, the 249th Motorpool Area Stream (MP12), the Theote Road/Warren Road Wash Yard (MP13), and Building 2476 Former Hazmat Storage Locker (MP14).

Appendix A shows a summary of historic sampling data for each site and associated site maps. Detailed approaches for the PCB historical use inventory are presented in Appendix B.1 and the detailed PCB historical use analysis and sampling point determination is presented in Appendix B.2. A closure summary and documentation for each site can be found in Appendix C, where closure has not been reached for a site a proposed investigation approach in provided instead.

A23: Appendix-A-1, Appendix-C-1
A24: Appendix-A-2, Appendix-C-2
B03: Appendix-A-3, Appendix-C-3
B04: Appendix-A-4, Appendix-C-4
B09: Appendix-A-5, Appendix-C-5
B10: Appendix-A-6, Appendix-C-6
L03: Appendix-A-7, Appendix-C-7
L04: Appendix-A-8, Appendix-C-8
L47: Appendix-A-9, Appendix-C-9
N13: Appendix-A-10, Appendix-C-10
MP11: Appendix-A-11, Appendix-C-11
MP12: Appendix-A-12, Appendix-C-12
MP13: Appendix-A-13, Appendix-C-13
MP14: Appendix-A-14, Appendix-C-14

7. SUMMARY OF RCRA CLOSURE REVIEW AND SITE ANALYSIS

A review of the RCRA Closeout Reports found documentation for site closeout of 8 of the 14 sites, Building 632 (B03), Building 633 (B04), Building 1430 (B09), Building 190 (B10), Building 2596 (L03), Building 3126 (L04), Transformer storage area (L47), and Building 1490 (N13). These will be excluded from further action because of the closure justifications shown in Table 4 that confirm that the sites do not pose a risk of contributing PCBs to impaired water bodies through stormwater discharge. A Summary of current SWMU status, closure dates, and justification are provided in Table 4.

Detailed site maps for individual sites can be seen in figures 3 through 14. Appendix A contains Tables summarizing historic sampling data for each site. Appendix C contains copies of the closure confirmation letters. Each site is addressed individually in the following sections.

Table 4: Site Closure Dates and Justifications

Site name	SWMU ID	Closure Date	SWMU Status and Closure Justification
Former Coal Storage Area	**A23**	3/17/2014; 8/05/2016	- No Further Action (2014) - Land Use Controls in place (2016) - Annual cap inspection
Former Defense Property Disposal Office (DPDO) Storage Area	**A24**	3/17/2014; 8/05/2016	- No Further Action (2014) - Land Use Controls in place (2016) - Annual cap inspections - Investigation of intermittent channel A24a
Former Building 632 Hazardous Waste Storage Area	**B03**	9/03/1997; 9/21/2012	- Site closed in accordance with VADEQ approved closure plan. - Contents of buildings were properly disposed - Buildings demolished and materials properly disposed - Concrete slab floorings and 2ft of underlying material excavated and properly disposed - 8 soil samples collected at each site, all non-detect for PCBs. - Excavation backfilled (Fort Belvoir, 1996a and 1996b)
Former Building 633 Hazardous Waste Storage Area	**B04**	9/03/1997; 9/21/2012	
Former Building 1430 Transformer Storage Area	**B09**	7/06/2012	- An environmental investigation was performed in 1997 where Soil samples were collected and analyzed for the presence of PCBs around former Building T-1430. Laboratory results showed that none of the soil samples had concentrations of PCBs above the laboratory's detection limits. (Fort Belvoir, 2012b)

Site name	SWMU ID	Closure Date	SWMU Status and Closure Justification
Building 190 Former Indoor Storage Room	**B10**	5/21/1999; 7/06/2012	- No documented spills or releases related to the storage of PCBs - Major renovations of the building including the storage area were completed in 2002-2003. (Fort Belvoir, 2012b)
Former Asphalt Storage Pad near Building 2596	**L03***	12/17/2013	- Associated building was demolished and land repurposed as asphalted parking lot and field - 3 subsurface soil samples, all non-detect for PCBs (Fort Belvoir, 2013a)
Hangar 3126 Former outdoor concrete pad transformer area	**L04**	7/06/2012	- Soil samples collected at the site did not indicate impact to the environment. - The transformers and associated pads have been removed. (Fort Belvoir, 2012b)
Former Concrete Pad Transformer Storage Area	**L47**	12/17/2013	- six soil boring samples be collected from three soil borings - PCBs were not detected in the samples collected indicating that the former activities at the site have not affected the soils (Fort Belvoir, 2013b)
Building 1490 Hazardous Material Storage Area	**N13**	7/06/2012 9/17/2019	- No documented spills or releases into the environment. - Indoor storage area limiting potential for exposure to precipitation (Fort Belvoir, 2012b) - Facility stopped receiving waste in 2011 - Facility was decontaminated in April 2019 as per the Closure plan as required by the 2015 RCRA Part B Permit - Received approval for closure, under the Part B RCRA permit, by VADEQ in September 2019 - The facility is currently being slated for demolition.
Building 1495 Former Outdoor Transformer Storage Area	**MP11**	N/A	- Active Remediation Site under RCRA Phase I investigation
249th Motorpool Area Stream Contamination	**MP12**	N/A	- Active Remediation Site under RCRA Phase I investigation; Awaiting results to support No Further Action (NFA) determination

Site name	SWMU ID	Closure Date	SWMU Status and Closure Justification
Theote Road/Warren Road Wash Yard	**MP13**	N/A	- Active Remediation Site under RCRA Phase I investigation, Interim Soil Removal Complete
Building 2476 Former Hazmat Storage Locker	**MP14**	N/A	- Active Remediation Site under RCRA Phase I investigation; Awaiting results to support No Further Action (NFA) determination

***NOTE: L03 is considered a "legacy site" due to the fact that this parcel of land is no longer a part of Fort Belvoir, is not included in Belvoir's land use inventory and is not covered by either the MS4 or ISW permits. HECSA has owned and operated this area since 1981.**

7.1. FORMER COAL STORAGE AREA (A23)

A23 was the site of a one-time PCB spill that was reported to U.S. EPA in March 1979 as presented in Figure 3. According to records, 197 liters of PCB coolant leaked from two vandalized electrical transformers onto a concrete pad where transformers were previously stored, and subsequently flowed onto adjacent soil (Fort Belvoir, 1997). Extensive remediation of the site took place during 1982-1983 in which 2,700 ft^2 of concrete slabs were removed in 4 ft. by 6 ft. sections. The concrete slabs as well as contaminated sediments excavated from the adjacent drainage ditch were transported off site for disposal at a facility approved to receive PCB waste. Soil samples were collected from the areas where the concrete was removed and if the PCB concentration was less than 50ppm, the area was filled with at least 2 feet of clean fill and re-vegetated (Fort Belvoir, 1981). While not explicitly stated in the 1981 letter explaining the planned cleanup activities, it is assumed that if the PCB concentration was greater than 50ppm additional excavation was completed prior to backfilling as the 1983 letter states, "The covering of the cleanup sites with 2 feet of clean earth progressed as each section of the spill site was cleaned to levels below 50ppm of PCBs (Fort Belvoir, 1983)". The cleanup plan proposed in 1981 received a letter of concurrence from U.S.EPA (U.S.EPA, 1981). All letters from U.S. EPA indicating agency concurrence with site plans and evaluations are provided in Appendix C. Historical sample data is summarized in Table A-1, Appendix A. The remediation efforts resulted in the site having been cleaned up to a level in accordance with 1977 Clean Water Act (CWA) and 1979 Toxic Substances Act (TSCA) (Fort Belvoir, 1983).

A Fate and Transport study was conducted at site A23 to determine the potential impacts to groundwater and surface waters due to the residual concentrations of Aroclor 1260. The study found that there was little probability of vertical migration to groundwater and a slight possibility of transport via the intermittent drainage channel. However, affected soil was also removed from 120 linear feet of the channel and backfilled with clean earth. Any transport of PCB material downstream would likely have occurred in the early 1980s before the stream sediment was removed. Based on this Fort Belvoir recommended the site for NFA with Land Use Controls (LUCs). (Tetra Tech, 2014a) U.S EPA gave conditional approval of the NFA with LUCs status pending evaluation of the existing concrete cap in a letter dated March 17th, 2014.

In 2015, an investigation of A23 was conducted where a review of current activities, visual inspection of the concrete cap, and the thickness of the cap was evaluated. Direct push technology (DPT) borings were advanced at six locations on the cap to evaluate the thickness. The cap was found to be in good condition, with adequate thickness to prevent contact with, or migration of, underlying soil that may contain residual PCBs. (EA, 2016a) U.S. EPA concurred in a letter dated February 8, 2016, the site reached a NFA with LUC status and a Land Use Control Implementation Plan (LUCIP) was developed.

Although Site A23 is the site of a historic PCB release, it has undergone extensive remediation. Based on excavation and backfill information, any residual PCB contamination would be deeper than 2 ft below ground surface (bgs) preventing exposure to precipitation. Additionally monitoring, and as necessary, maintenance/repair to the existing concrete cap is conducted annually as per the approved LUCIP. (EA, 2016b) Therefore, it is unlikely that any residual PCBs present at the site would discharge to impaired water bodies. In support of this conclusion, sampling completed in 2011 in conjunction with an industrial discharge permit application showed non-detect for PCB constituents at Outfall 007 (as presented in Table A-1, Appendix A). Outfall 007 receives inflow from the two drains located at site A23. Additionally, PCBs are carried primarily by sediment and the partially wooded nature of the site would reduce potential for such sediment travel. Stormwater at A23 flows to an unnamed tributary (intermittent at the area closest to the site) to Gunston Cove.

Conclusion: No Further Action.

7.2. FORMER DPDO STORAGE AREA (A24)

A24 was the site of a one-time PCB spill that was reported to U.S. EPA in March 1979. According to records, 163 liters of PCB coolant spilled from improperly stored electrical transformers contaminating the surrounding soils (Fort Belvoir, 1997). The spill location is shown in Figure 4. Extensive remediation of the site took place during 1982-1983 that included delineation of PCB contaminated areas within the DPDO yard, onsite containment, and excavation of contaminated soil. Based on contamination delineation, soil was excavated to four feet in the areas of highest contamination. The entire area of the PCB spill was covered with at least 2 ft of clean earth fill and vegetated. No excavation of stream sediment was required as all PCB concentration detections from stream sediments were below 50 ppm (Fort Belvoir, 1981). The 1981 letter from the U.S. EPA (Appendix C) approving the proposed cleanup plans for A23 old coal yard also includes clean plan for the A24 DPDO yard. Historical soil sample data is summarized in Table A-2, Appendix A. The remediation efforts resulted in the site being cleaned up to a level in accordance with the CWA and TSCA regulations (Fort Belvoir, 1983).

A Fate and Transport study was conducted at site A23 to determine the potential impacts to groundwater and surface waters due to the residual concentrations of Aroclor 1260. The study found that there was little probability of vertical migration to groundwater but possible transport of the congener in the aquatic system is slightly possible via the in the intermittent stream 120 feet northwest of the site; however, affected soil was also removed from the DPDO storage yard and backfilled with clean earth, which acts as a natural cap and restricts runoff of residual PCB affected soils. Based on this Fort Belvoir recommended the site for NFA. (Tetra Tech, 2014b) U.S EPA gave conditional approval of the NFA with Land Use Controls status pending evaluation of the existing soil cap and repairs to the physical barriers (signage and fencing) in a letter dated March 17th, 2014.

In 2015 an inspection of the soil cap, vegetative cover, and physical barriers was conducted for A24. The site was found to be heavily vegetated with no evidence of erosion, the fence had been damaged at a couple locations and signage was found to be faded at the time. A hand auger was used to determine the approximate thickness of the soil cap at eight locations, the cap was found to be in good condition, with adequate cover over native soils containing residual PCBs. Four soil/sediment samples were also taken from the intermittent drainage channel to the northwest to further evaluate the migration of residual PCBs. Total PCBs at the site ranged from 0.482 mg/kg to 2.860 mg/kg, which was comprised of Aroclor 1260; the only PCB mixture detected at the site. (EA, 2016a) The PCBs found in the drainage ditch soil did not exceed the TSCA threshold but did exceed EPA's Regional Screening Level (RSL) for industrial use and ecologic screening for Arochlor 1260. (U.S. EPA, 2016) U.S. EPA concurred in a letter dated February 8, 2016, the site reached a NFA with LUC status and a LUCIP was developed.

In February of 2016, site barrier repairs were conducted, as per the recommendations from the 2015 site inspection. This included repairs to fence areas noted as damaged, replacement of access gates, and installation of LUC signage. Additional investigation of the low level PCB concentrations in soil/sediment (less than the 50 mg/kg criteria) located offsite will be required. (EA, 2016b) The intermittent channel will be investigated under a separate action by the Fort Belvoir Remediation Program under SWMU A24a, as recommended by the U.S. EPA. All investigations and remediation will be done in accordance with the Fort Belvoir Part B Permit Corrective Action module IV. PCB results from this investigation will be provided as part of the annual reporting process and used to update Appendix A-Table A-2.

Although site A24 is the site of a PCB release, it has undergone extensive remediation. Based on excavation and backfill information, any residual PCB contamination would be below 2 ft bgs preventing exposure to precipitation. Stormwater at A24 flows to an unnamed tributary (intermittent at the area closest to the site) to Accotink Bay. PCBs are carried primarily by sediment and the thickly wooded nature of the site would reduce potential for such sediments to travel off site. Therefore, it is unlikely that any residual PCBs present at the site would discharge to impaired water bodies. Although low level PCBs were detected in the intermittent channel (A24a), the site is being investigated under a separate program and is located downstream of all permitted outfalls, so no stormwater characterization sampling is required at A24.

Conclusion: No Further Action; Monitor RCRA remediation; PCB sampling results for intermittent channel (A24a) and final site determination to be included in MS4 Annual Report.

7.3. FORMER BUILDING 632 HAZARDOUS WASTE STORAGE AREA (B03)

SWMU B03 was first identified in the 1988 Draft Phase II RCRA Facility Assessment (RFA) as an interim status 10 ft by 12 ft brick and concrete storage facility for hazardous waste, building 632. The structure was used from the early 1980s to 1990 as a storage facility for hazardous wastes such as, waste oil/Freon mixture, trichlorofluoroethane, photo sludge, and PCB-contaminated wastes from numerous sources. No PCB releases were reported to have occurred at B03.

Storage building 632 has been demolished and the site was remediated, a closure report was prepared and sent to VADEQ in 1996 that recommended no further action. VADEQ approved this recommendation in a letter dated September 3, 1997. US EPA reviewed the NFA recommendation and concurred in a letter dated September 21, 2012. (Fort Belvoir, 2014)

There are no stormwater drains nearby. Currently the site is wooded with substantial brush growth. It was concluded that this site would not be a likely source of PCBs as PCB items were kept indoors not exposed to precipitation, no evidence of the hazardous waste storage area during recent site visits, the site was remediated, re-vegetated, and there are no nearby storm drains.

Conclusion: No Further Action

7.4. FORMER BUILDING 633 HAZARDOUS WASTE STORAGE AREA (B04)

SWMU B04 was first identified in the 1988 Draft Phase II RCRA Facility Assessment (RFA) as an interim status storage facility for hazardous waste. The unit was described a 20 ft by 24 ft structure constructed of masonry blocks, with a concrete floor. The structure was used from the early 1980s to 1990 as a storage facility for non-regulated wastes including PCB-contaminated waste, waste paint solids, and bromoform from numerous sources. No PCB releases were reported to have occurred at B04.

Storage building 633 has been demolished and the site was remediated, a closure report that documented the decontamination, demolition, sampling, characterization, and disposal of the unit was submitted in July 1996. VADEQ approved this recommendation in a letter dated September 3, 1997. US EPA reviewed the NFA recommendation and concurred in a letter dated September 21, 2012. (Fort Belvoir, 2014)

Much like B03, there are no stormwater drains nearby. Currently the site is wooded with substantial brush growth. It was concluded that this site would not be a likely source of PCBs as PCB items were kept indoors not exposed to precipitation, no evidence of the hazardous waste storage area during recent site visits, the site was remediated, re-vegetated, and there are no nearby storm drains.

Conclusion: No Further Action

7.5. FORMER BUILDING 1430 TRANSFORMER STORAGE AREA (B09)

B09 was a former transformer storage area located at Building 1430 as shown in Figure 6. Transformers were stored both indoors and outdoors at this site. Building 1430 no longer exists and the area where the building once stood is now used as a storage area for trailers and large generators. Soil samples and wipe samples were collected in 1997 in accordance with the SWMU corrective action closure plan. The data summary is in Table A-6, Appendix A. All results were non-detect for PCBs, leading to the conclusion that the site had not been impacted and should be recommended for closure (Fort Belvoir DPW ENRD, 2012). Figure 6 shows the location of B09.

An Administrative Closure Report was submitted recommending site closure under category AC-1 due to site investigation and corrective action being complete, and a closure report was prepared but not forwarded or approved by regulatory agency. US EPA reviewed the closure documentation and concurred in a letter dated July 06, 2012.

While transformers containing PCBs were stored at B09, secondary contaminant was present. Prior to 1991, secondary containment consisted of two metals pans where the transformers were stored. In 1991, the metals pans were replaced with the installation of secondary contaminant consisting of a concrete berm and sealed floor. Even though leaks were observed at the site, there is no indication that the environment was negatively impacted by PCBs due to the secondary containment. The area is fully paved and while there are no direct drainage swales, the closest stream is approximately 40 ft to the north-northwest, and is an unnamed tributary to Accotink Creek. The absence of PCBs at the site and lack of direct drainage leads to the conclusion that it is unlikely B09 would discharge PCBs to impaired water bodies.

Conclusion: No Further Action.

7.6. BUILDING 190 FORMER INDOOR STORAGE ROOM (B10)

SWMU B-10 was first identified in the 1988 Draft Phase II RCRA Facility Assessment (RFA) as a 35 ft by 15 ft room located in Building 190, the Vehicle Repair Shop. The room was used to store PCB containing materials from 1980 to 1981. The PCB materials were in either drums or within the original equipment until the unit ceased to be operational in 1981. The concrete floor had an impervious epoxy coating and the doorway had secondary containment controls (curbing). According to the 1992 CH2M Hill SWMU Study the room had been decontaminated after all the PCB materials were removed sometime after 1981.

During the 2005 VSI of the unit, the room was observed to have been completely renovated and its dimensions had been decreased to 14.5ft by 8.5ft and new drywall had been installed. No evidence of the storage of PCBs was observed. There is no record noted in the file material of any reported release from this unit.

A Closure Report was completed in February 1998 and received concurrence from VADEQ in a letter dated May 21st, 1999. An Administrative Closure Report was submitted recommending site closure under category AC-6 due to a review of historical documentation of this site, and there is no evidence or indications that any type of release into environment has occurred at this site that would require further actions. US EPA reviewed the closure documentation and concurred in a letter dated July 06, 2012.

Because any PCB containing equipment was stored indoors and not exposed to precipitation, secondary containment was present, the building was decontaminated and renovated, and regulatory closure was achieved; it is unlikely B10 would discharge PCBs to impaired water bodies.

Conclusion: No Further Action.

7.7. FORMER ASPHALT STORAGE PAD NEAR BUILDING 2596 (L03)

L03 was not considered as an official PCB storage area. In 1988, transformers were reported as being located at the site and the presence of fluid staining the asphalt was noted (Kearney, 1988). However, no known sampling occurred at the site and there is no documentation of PCB contamination at the site as presented in Figure 8.

The area that was once the asphalt pad has been demolished and redeveloped as part of a parking lot for Humphreys Engineering Center. This area would drain to stormwater swales, to an unnamed tributary, to the wetlands in Jackson Miles Abbott Wetland Refuge, to Mulligan Pond, and to Dogue Creek. It is unlikely the area described by L03 would discharge PCBs to impaired water bodies and therefore the site is recommended for No Further Action.

Environmental soil sampling as part of the Phase I investigation work was started at L03 in winter 2012 and was completed in August of 2013. Field activities included the collection of six (6) soil boring samples from three (3) soil borings. The soil boring locations were selected based upon the historical description and location of the former drum, debris, and transformer storage area. The three soil borings were advanced to a depth of 4.5 bgs due to the asphalt access road and associated fill that was situated on the former storage site. No PCBs were detected in any of the subsurface soil boring samples collected during the investigation at SWMU L03.

Based on the findings in the Phase I investigation, Fort Belvoir recommended No Further Action at SWMU L03. The US EPA concurred with the recommendation in a letter dated December 17, 2013. The lack of detections for PCBs in the soil boring samples collected at L03, suggests that the former activities at the site have not affected the soils in the vicinity of the former drum, debris, and transformer storage area. The storage pad and old building have been demolished and the area entirely redeveloped, this indicates that it is unlikely L03 would discharge PCBs to impaired water bodies. In addition, L03 is now considered a “legacy site” due to the fact that this parcel of land is no longer a part of Fort Belvoir, is not included in Belvoir’s land use inventory and is not covered by either the MS4 or ISW permits. HECSA has owned and operated this area since 1981. See appendix C-7 for Memorandum for record from ENRD and available land transfer documents.

Conclusion: No Further Action

7.8. HANGAR 3126 FORMER OUTDOOR CONCRETE PAD TRANSFORMER STORAGE AREA (L04)

L04 was an outdoor concrete pad that housed active transformers as shown in Figure 9. Leaking fluid was visible in 1988 (Kearney, 1988) which would have been exposed to precipitation and potentially impacted an open water body. Soil samples collected in 1997 confirmed the absence of PCBs in soils at the site above laboratory detection limits (Fort Belvoir, 1998). The summary of the soil sample data collected is presented in Table A-9, Appendix A.

An Administrative Closure Report was submitted recommending site closure under category AC-6 due to a review of historical documentation of this site, and there is no evidence or indications that any type of release into environment has occurred at this site that would require further actions. The transformers were taken offline in 1998 and during the 2005 VSI it was noted that all the transformers and pads had been removed. US EPA reviewed the closure documentation and concurred in a letter dated July 06, 2012. There is no longer any evidence of the transformer area and the site has been redeveloped as a picnic and barbeque area and is now covered with concrete. Any residual PCBs at the site were below the laboratory detection limits and the area is now be covered by a concrete pad and no longer exposed to precipitation. Additionally, a grassy area between L04 and the nearest drainage swale would restrict sediment movement reducing the potential for PCB discharge to impaired waters.

Conclusion: No Further Action.

7.9. FORMER CONCRETE PAD TRANSFORMER STORAGE AREA (L47)

Site L47 was a concrete pad that was used to store transformers until they could be tested for PCBs and then disposed of properly or moved to another storage area as shown in Figure 5. The pad was approximately 40 ft by 8 ft and transformers were noted as being stored on wooden pallets over bare ground to the south of the pad (CH2M Hill, 1992). The pad was located outside and transformers were exposed to precipitation. However, there were no reportable releases. Even though stains on the pad were reported it is unknown whether the staining liquid contained PCBs since the transformers at the site were being held for PCB testing. The pad has been removed and the site is now wooded with tall grass, medium brush, and young and mature trees. The location of the former concrete pad is shown in Figure 5. This location is on the top of a hill and drains to stormwater swales, to an unnamed tributary that drains to Gunston Cove. Since PCBs are carried primarily by sediment, the thickly wooded nature of the site would reduce the probability for potentially contaminated sediments to travel.

Environmental soil sampling as part of the Phase I investigation work was conducted at L47 in January 2013 and a report was completed in August of 2013. Field activities included the collection of six (6) soil boring samples from three (3) soil borings. Surface soil samples from the 0-2 feet below ground surface (bgs) interval and subsurface soil samples from the 2-4 feet bgs interval were collected from each boring and sent to the laboratory for the analysis of PCBs. PCBs were not detected in any of the soil boring samples collected at SWMU L47. Based on the findings in the Phase I investigation, Fort Belvoir recommended No Further Action at SWMU L47. The US EPA concurred with the recommendation in a letter dated December 17, 2013. The absence of detected concentrations of PCB analytes in the soil boring samples collected at SWMU L47, suggests that the former activities at this site have not affected the soils in the vicinity of SWMU L47. The storage pad, pallets and sheds have been demolished and the area is overgrown with wood shrubbery and mixed hardwoods, this indicates that it is unlikely L47 would discharge PCBs to impaired water bodies.

Conclusion: No Further Action

7.10. BUILDING 1490 HAZARDOUS MATERIAL STORAGE AREA (N13)

SWMU N13, Building 1490 was first described in the 1992 CH2M Hill SWMU Study as a hazardous material storage facility that has been in use since 1984. According to the 2005 VSI, operations at this unit include segregating, labeling, and storing waste materials prior to being transported off the Installation by contractors to be properly disposed. Before 1984 the building was used as a pesticide mixing area (SWMU B16) and some floor staining had been documented.

Building 1490 and the storage of hazardous materials within the structure are managed through Fort Belvoir's RCRA Part B Permit for Hazardous Waste Storage. Although there was one report of a small amount of hazardous chemicals being released inside the building, the materials were addressed through the Installation's Spill Contingency Plan. The building has secondary containment structures in place and has no pathway for chemicals to be released into the environment. In March of 2018 VADEQ was formally notified that closure of the facility hazardous waste storage facility has commenced with an evaluation of the integrity of the foundation by a Professional Engineer (PE). The facility was decontaminated on April 9 and 10, 2019 as per the Closure Plan contained in the 2015 RCRA Part B Permit and modified/approved by VADEQ on April 5, 2019.

The decontamination and sampling process for the facility was documented in the 1490 Closure Report dated July 2019, which included certification of clean closure by both Fort Belvoir (owner/operator) and a PE. A closure verification inspection addressing Building 1490 was performed by Christina Archambeault, Hazardous Waste Inspector, and Ashby Scott, RCRA Permit Writer, on August 8, 2019. Building 1490 received final closure approval by VADEQ on September 17, 2019 in a letter which stated that, "the closure meets the criteria of the approved closure plan dated April 5, 2019 (latest modification), and is in accordance with the Virginia Hazardous Waste Management Regulations. Therefore, the storage facility is considered to be clean-closed and to meet residential risk." Therefore, no further risk of potential releases of hazardous chemicals is present from this historic operation. The building is now slated to be demolished.

Based on a review of historical documentation of this site, there is no evidence or indications that any type of release into environment has occurred at this site that would require further actions. As such, SWMU N-13 received regulatory concurrence from US EPA Region 3 for Administrative Closure on July 6th, 2012. The site was decontaminated in April of 2019 and received approval for clean closure under the RCRA Part B Permit (VA7213720082) from VADEQ on September 17th, 2019.

Conclusion: No Further Action

7.11. BUILDING 1495 FORMER OUTDOOR TRANSFORMER STORAGE AREA (MP11)

The PCB site at Building 1495 consists of the northeast corner of the adjacent parking lot as presented in Figure 10. PCB containing transformers were stored in the area between 2010 and 2012 and were exposed to precipitation. In 2012, ENRD received reports of fluid leaking from the transformers. The transformers were relocated inside Hazardous Waste Disposal Building (Building 1495) and later properly removed and disposed of. Upon the relocation of the transformers to the building, Stains are visible on the asphalt at the site and absorbent and containment materials were placed around the affected areas. Sampling was conducted in April and August of 2012 and Aroclor 1260 was detected in 2 of the 4 soil and asphalt samples as presented in Table A-11, Appendix A.

Stained soils and odor were encountered while performing construction activities as part of the adjacent Building 1495 remodeling project in August 2013. Soil samples taken on the 12th, 13th, and 27th of August 2013 indicated elevated levels of TPH and PCBs. Work was stopped until the contractor sampled and

submitted a Site Safety and Health Plan (SSHP), samples taken on June 23rd 2014 were non-detect for PCBs. On July 7th 2014, once the SSHP was approved, soil was removed from the affected location. Confirmation samples were taken on July 9th 2014 which also indicated no residual PCB contamination in the area where the work was being done. As part of the Building 1495 remodeling project additional soil removal was conducted in the northeastern portion of the parking lot and the lot was re-asphalted. Soil sample taken on October 27th 2014 was non-detect for PCBs. Eight (8) Soil and three (3) surface water samples were taken on June 22nd 2015 at locations in the vicinity of the former PCB transformer storage area and adjacent to Building 1495 in order to assess impacts to soil. Results of this sampling indicated the presence of PCBs in one surface soil sample located in the northeastern eastern portion of the lot in the grass area.

In March 2013, Fort Belvoir finalized this PCB TMDL Action Plan as required by Fort Belvoir's MS4 Permit, which included monitoring of the former PCB transformer storage area release in proximity of Building 1495. In November 2013, prior to the initial soil removal in July 2014, the first round of sampling occurred as per of the PCB TMDL Action plan. Samples taken at MS4-PCB-1495-SW1 and MS4-PCB-1495-SW3 exhibited PCBs above Virginia's Water Quality Standards (WQC) of 640 pg/L. Additional stormwater sampling was conducted in April 2015, after the second round of soil removal was completed in August 2014. Significantly higher levels of PCBs were reported during this event but were attributed to the large amount of soil disturbance occurring in the area (TSS: 973 mg/L). During the September 2015 sampling event these results saw a significant decrease, with MS4-PCB-1495-SW1 dropping below the WQC threshold. The dramatic decrease in PCB levels at these sample locations, since April 2015, is likely due to the completion and final stabilization of the remediation areas. (Angler, 2015) Sampling continued in 2017 when stormwater was collected from MS4-PCB-1495-SW1 and MS4-PCB-1495-SW3 in February. The results showed another spike in total PCB congeners with 2,237 pg/L and 3,029 pg/L respectively. Although higher than the WQC the February 2017 sample results are significantly lower than the values observed in April 2015, and slightly higher than levels detected in samples taken in September 2015 (Angler, 2017). It was noted during this sampling event that a large amount of sediment was built up in both the channel (SW1) and at the culvert outlet (SW3) where samples were collected. This sediment which may be residual from the construction that occurred in the area may be the source of the PCB spikes. The Restoration Program was supplied with all sample results for the facility in order to determine the best approach to investigating the contamination at the site. Annual sampling will continue and future results will be used to confirm the downward trend towards meeting the Virginia WQC.

Although soil removal and capping has occurred, the site has not yet been fully remediated, but is scheduled to complete Phase I investigations in 2018 to further define the nature and extent of contamination. All investigations and remediation will be done in accordance with the Fort Belvoir Part B Permit Corrective Action module IV. While the new asphalt acts as a cap and is surrounded by grass, there are drainage channels to the North, South and Northeast of the site. Two channels are grass lined, impeding the transport of residual PCBs to impaired waters while, the northern channel is concrete lined which would further facilitate sediment transport, due to the higher concentrated flow rates.

Stormwater sampling at two locations, SW1 and SW3, occurred in both the spring and fall of 2019. Although results increased between the spring and fall, largely due to the amount of precipitation, they were still substantially lower then when the area was not stabilized. It was also noted that during these sampling events the drainage ditches along Sharon Lane Road were in complete disrepair. This resulted in an increase of stormwater being directed towards the site instead of being diverted to a nearby stream. The additional surface flows that were able to infiltrate resulted additional groundwater volume, potentially mobilizing PCBs. The large amount of groundwater could be evidenced due to the seepage from the joints into the trapezoidal concrete flume at the northern end of the Bldg. 1495 and the ponding water at the upslope depression/ditch on the eastern side of the Bldg. 1495 compound, above the parking

area. Repairs on the drainage ditches began in late summer of 2019 and were completed in early 2020. All channels running down Sharon Lane were regraded and lined with rip-rap reduce runoff velocity and prevent stormwater flows from topping the road. The uphill ditches near buildings 1496 and 1497 have been repaired to ensure that the stormwater enters a concrete channel which diverts runoff to the stream on the north side of Bldg. 1495, preventing the discharge of stormwater onto the hill primarily vegetated by grasses and Lespedeza on the east side of Bldg. 1495 where PCB contamination was known to have occurred. It is anticipated that the repairs will restore the downward trajectory of PCBs in stormwater to meet the WQC.

Building 1495 is also used as a <90 day hazardous waste storage facility, because of the presence of solvents PCB migration may be more likely. Since PCBs are still being presented in stormwater samples from the site and there are nearby drainage features, continued monitoring is recommended to confirm the downward trend continues. Monitoring should be conducted until the WQC is met or the site reaches RCRA Closure. Any PCB sampling results made available from the RCRA investigations will be used to update the historical sample summary located in Appendix A – Table A-11. Changes in site status will be reported during the MS4 annual reporting process and sample results will be kept under the SWPPP for ISW RO-005, which covers the drainage area associated with this historic PCB location.

Conclusion: Recommend continued annual monitoring to confirm downward trend continues towards meeting WQC

7.12. 249TH MOTORPOOL AREA STREAM CONTAMINATION (MP12)

Site MP12, known as the 249th Motorpool Area Stream Contamination, was discovered during a wetland stream assessment to identify the current condition of Intermittent and Perennial Streams associated with the future project site. The Assessment was conducted on September 18th, 2015 on an unnamed tributary to Accotink Bay and identified six (6) abandoned barrels located either in or along the banks of the stream receiving discharge from the currently inactive but permitted ISW outfall RO-033. Because the site is downstream of the permitted ISW outfall, no additional recordkeeping is required by the ISW permit.

On October 19th, 2015 the Restoration Program conducted an initial site assessment which included a Photo Ionization Detector (PID) to pre-screen soils for volatile organic compounds (VOCs) and surface soil sampling for Total Petroleum Hydrocarbons (TPH), VOCs, and PCBs at the locations of the six barrels. PCBs was detected in two samples, SS02 and SS03, with concentrations of 0.10 and 0.15 mg/kg respectively. Although Aroclor 1260 was detected in two samples, the reported concentrations were below U.S. EPA Residential Soil Screening Levels (RSSLs) of 0.24 mg/kg. (IEI, 2015). The results were evaluated by the Restoration Program on January 15th, 2016 and possible concerns for the protection of groundwater based on the EPA risk based SSL (0.0055 mg/kg) and ecological risk for the masked shrew (0.000332 mg/kg) were identified.

The stream site has not yet been fully characterized, but has begun RCRA Phase I investigations to further define the nature and extent of contamination in soil, groundwater, surface water, and sediment. All investigations and remediation will be done in accordance with the Fort Belvoir Part B Permit Corrective Action module IV. Because the site is being investigated under a separate program and is downstream of permitted ISW Outfall (RO-033), no stormwater characterization sampling is required at MP12. Sampling occurred in October 2018 at the locations approved in *Final Quality Assurance Project Plan Addendum/Work Plan for sites MP-11, MP-12, MP-13, MP-14, L-09, and A-24* (AECOM, 2018). Any PCB sampling results made available from the RCRA investigations will be used to update the historical sample summary located in Appendix A – Table A-12. Changes in site status will be reported during the MS4 annual reporting process.

Conclusion: No Further Action; PCB sampling results from Phase I RFI and final site determination to be included in MS4 Annual Report.

7.13. THEOTE ROAD/WARREN ROAD WASH YARD AREA (MP13)

The Area of Potential Concern (AOPC) associated with the Theote Road and Warren Road wash yard, known as MP13, was discovered during a project site inspection. Stained soils and odor were encountered while performing construction activities as part of the Building 1495 remodeling project in August 2013, as mentioned in Section 7.10 above. When discussing on-site activities the contractors stated that washing of contaminated equipment was done within this AOPC. Work was stopped until the contractor sampled and submitted a Site Safety and Health Plan (SSHP), samples taken from the work site on June 23rd 2014 were non-detect for PCBs.

On October 19th, 2015 the Restoration Program conducted an initial site assessment which included a Photo Ionization Detector (PID) to pre-screen soils for volatile organic compounds (VOCs) and surface soil sampling for Total Petroleum Hydrocarbons (TPH), VOCs, Metals, Pesticides and PCBs at 11 locations within the AOPC. This round of sampling was focused on the area associated with the access point, where there was a clear indication of vehicle traffic. PCBs was detected in all samples, WYSS-01 through WYSS-11, with concentrations between 0.009 and 0.069 mg/kg. Although Aroclor 1260 was detected in the samples, the reported concentrations were below U.S. EPA Residential Soil Screening Levels (RSSLs) of 0.24 mg/kg. (IEI, 2016) The results were evaluated by the Restoration Program on January 11th, 2016 and possible concerns for the protection of groundwater based on the EPA risk based SSL (0.0055 mg/kg) and ecological risk for the masked shrew (0.000332 mg/kg) were identified.

On February 4th, 2016 additional surface soil sampling was conducted across the AOPC in order to delineate the area of contamination. Aroclor 1260 was detected at 20 of the 28 locations sampled ranging in values from 0.0095 to 0.10 mg/kg. As discussed above although the reported values were below U.S. EPA RSSL they did exceed values for protection of groundwater and the masked shrew. On August 7, 2017 two locations were sampled for total PCBs (tPCBs) in effluents leaving the site. These results showed that runoff from the site contained tPCBs above the WCQ with concentrations of 692.28 pg/L at sampling point MS4-PCB-Warren-1, located on the west of the site, and 2,468.26 pg/L at MS4-PCB-Warren-2 located on the southeast portion of the site. During sampling it was noted that MS4-PCB-Warren-2, which showed substantially higher concentration of tPCBs, was ponded, heavily turbid, and draining through a partially buried pipe (Angler, 2017).

The site has not yet been fully characterized, but is undergoing a RCRA Phase I investigation to define the nature and extent of contamination in soil, groundwater, and surface water and gain concurrence for closure by VADEQ. All investigations and remediation will be done in accordance with the Fort Belvoir Part B Permit Corrective Action Module IV. An Interim Soil Removal was completed at the site in March of 2019. The removal involved the disposal of a large soil stock pile at the middle of the site, disposal of concrete debris across the site, and the disposal of the top 6 inches of soil from across the site. Following the removal, the site was regraded and stabilized to be a fully open grassed recreational area.

Sampling was performed by the Restoration Program both prior to and following the interim soil removal as a part of the RCRA Phase I Investigation. After the soil removal, aside for some low-level VOC detections, the site was found to be below 2019 EPA residential soil screening levels. The Restoration Program is currently evaluating all data and in the process of preparing a final report for VADEQ submittal. Site investigations have shown that the regrading and stabilization of the site has led to less runoff and more infiltration. It is anticipated that the restoration of the site and its vegetative cover will encourage a downward trajectory of PCBs being transported in stormwater towards meeting the WQC.

The site has not yet been fully remediated. While the site is mostly impervious and is surrounded by grassy areas, there are two drainage features to the East and West of the site. The western channel is concrete lined which would facilitate sediment transport. This AOPC has two defined drainage areas that would drain to two separate unnamed tributaries to wetlands to Gunston Cove. Since PCBs are currently present at the site and there are nearby drainage features stormwater monitoring is recommended. Any PCB sampling results made available from the RCRA investigations will be used to update the historical sample summary located in Appendix A – Table A-13. Changes in site status will be reported during the MS4 annual reporting process.

Conclusion: Recommend continued annual monitoring to confirm downward trend continues towards meeting WQC after the soil removal and stabilization was completed.

7.14. BUILDING 2476 FORMER HAZMAT STORAGE LOCKER (MP14)

Building 2476 was built as a Vehicle Maintenance Shop/Motorpool and has been used by the 911th Technical Rescue Engineer Company since 2008 for organizational vehicle maintenance. The 911th removed a hazardous material storage locker that was located in the SW corner of the facility's parking lot in August of 2015. The locker had been stored on top of grass and soil without any secondary containment. After removing the hazmat locker personnel noted a hole in the bottom of the locker and discoloration in the soils where the locker was stored. Fort Belvoir DPW-ENRD was notified about the potential soil contamination and noted during the site inspection that the locker had contained unlabeled containers and so the contents were unknown.

On August 26, 2015, the Restoration Program conducted surface soil sampling of the stained soil that was underneath and on either side of the storage locker. The soil samples were screened for VOCs, semi-volatile compounds (SVOCs), TPH, pesticides, metals, and PCBs. Aroclor 1254 and 1260 were detected in one of the four samples collected with reported concentrations at 0.016 and 0.098 mg/kg, respectively. Reported values were found to exceed the risk based SSL for protection of groundwater and the masked shrew and therefore the site was determined to need additional investigation to determine if there is any risk to human health or the environment from the release of hazardous substances. There are no direct drainage features or stormwater conveyance systems in the vicinity of the locker, instead run-off is transported as sheet flow to Mason Run before it intersects Accotink Creek just south of Route 1. It is unlikely the area described as MP14 would discharge PCBs to impaired water bodies and therefore the site is recommended for No Further Action.

The site has not yet been fully characterized, but has begun RCRA Phase I investigations to define the nature and extent of the contamination. All investigations and remediation will be done in accordance with the Fort Belvoir Part B Permit Corrective Action module IV. Because the site is being investigated under a separate program and there is no direct conveyance of runoff to surface waters, no stormwater characterization sampling is required at MP14. Sampling occurred in October 2018 at the locations approved in *Final Quality Assurance Project Plan Addendum/Work Plan for sites MP-11, MP-12, MP-13, MP-14, L-09, and A-24* (AECOM, 2018). Any PCB sampling results made available from the RCRA investigations will be used to update the historical sample summary located in Appendix A – Table A-14. Changes in site status will be reported during the MS4 annual reporting process.

Conclusion: No Further Action; PCB sampling results from Phase I RFI and final site determination to be included in MS4 Annual Report.

8. SUMMARY OF SITE RECOMMENDATIONS

Based on the review of PCB historic use inventory records and the RCRA closure documents, the recommendations identified for each site are summarized in Table 5 below. Note that although no further actions will be taken at sites A23 and A24 the caps associated with these sites are inspected annually for their integrity and ability to mitigate migration of residual PCB contamination. (EA, 2016b)

Table 5: Summary of Site Analysis Recommendations

SWMU IDs	Downstream Outfall	Site Name	Recommendations
A23	**RO - 007**	Former Coal Storage Area	No Further Action
A24	N/A	Former DPDO Storage Area	No Further Action – No outfall/direct drainage
B03	N/A	Former BLDG 632 Hazardous Waste Storage Area	No Further Action – Site Closed
B04	N/A	Former BLDG 633 Hazardous Waste Storage Area	No Further Action – Site Closed
B09	N/A	Former Building 1430 Transformer Storage Area	No Further Action – Site Closed
B10	**RO - 015**	Building 190 Former Indoor Storage Room	No Further Action – Site Closed
L03*	N/A	Former Asphalt Storage Pad near Building 2596	No Further Action – Site Closed
L04	**RO - 002**	Hangar 3126 Former outdoor concrete pad transformer storage area	No Further Action – Site Closed
L47	N/A	Former Concrete Pad Transformer Storage Area	No Further Action – Site Closed
N13	**RO - 023**	Building 1490 Hazardous Material Storage Area	No Further Action – Site Closed
MP11	**RO - 005**	Former Building 1495 Outdoor Transformer Storage Area	Annual monitoring to ***confirm downward trend*** towards WQC post diversion of stormwater flows
MP12	N/A	249th Motorpool Area Stream Contamination	No Further Action – No outfall/direct drainage
MP13	**1466, 8003**	Theote Road/Warren Road Wash Yard	Annual monitoring to ***confirm downward trend*** towards WQC post stabilization from removal of impacted soils
MP14	N/A	Building 2476 Former Hazmat Storage Locker	No Further Action – No outfall/direct drainage

***NOTE: L03 is considered a "legacy site" due to the fact that this parcel of land is no longer a part of Fort Belvoir, is not included in Belvoir's land use inventory and is not covered by either the MS4 or ISW permits. HECSA has owned and operated this area since 1981.**

9. BEST MANAGEMENT PRACTICES (BMPS) ANALYSIS AND IMPLEMENTATION PLAN

The term BMP is commonly used with reference to stormwater when discussing practices that can be implemented to alter quality and/or quantity of stormwater by preventing, controlling, or treating stormwater discharges. The BMP analysis documented below evaluates practices that have been implemented at Fort Belvoir to prevent exposure of PCBs to precipitation and provides recommendations for additional BMPs if they are warranted.

9.1. BMP EVALUATION

BMPs are most commonly organized into two major groups: 1) structural and 2) non-structural practices as exemplified in Table 6. Structural BMPs can be man-made engineering controls or sometimes naturally occurring features such as a wetland. Non-structural BMPs are generally actions that can be taken to influence discharge quality or quantity, usually in the form of operational controls.

Table 6: Examples of BMPs

Structural BMPs	Non-Structural BMPs
▪ Infiltration systems ▪ Detention systems ▪ Retention systems ▪ Constructed wetlands ▪ Filtration systems ▪ Vegetated systems ▪ Minimizing directly-connected impervious surface ▪ Miscellaneous and vendor-supplied systems, existing oil/water separators, and hydrodynamic devices ▪ Concrete or Soil Caps	▪ Good Housekeeping - Proper storage and disposal of wastes (automotive, pet, yard, hazardous) - Street Sweeping ▪ Preventative Maintenance: - Regular Inspection - Maintenance Schedules - Road and Ditch Maintenance ▪ Detecting and eliminating illicit discharges - Storm Drain Stenciling ▪ Running educational and outreach programs - Training - Guidance sheets - Brochures ▪ Low Impact Development (LID) and land use planning

This BMP analysis is broken up into 3 sections where BMPs were evaluated for their effectiveness and applicability to the PCB TMDL, and recommendations are made for implementation. First, all existing MS4 program BMPs were evaluated for effectiveness and how they can be implemented through this Action Plan. Second, all BMPs required as part of the ISW Major Permit (VA0092771) were evaluated for their applicability to the PCB TMDL and how they can be implemented through this plan. And lastly, an evaluation of site specific BMPs was conducted for locations where past and present PCB contamination is known. The analysis was used to make recommendations for new BMPs as well as come up with a practical implementation schedule as summarized in section 9.2 of this Action Plan.

9.1.1. EVALUATION OF EXISTING MS4 PROGRAM BMPS

The MS4 permit requires development and implementation of BMPs that address 6 different categories of practices that influence stormwater management. The Fort Belvoir MS4 Program Plan, Revised September 2016, outlines the BMPs in place for each of the following minimum control measures (MCMs) described in 9VAC25-890-40 Section II.B:

- Public Education and Outreach (1.1)
- Public Involvement/Participation (2.1 – 2.2)
- Illicit Discharge Detection and Elimination (3.1 – 3.3)
- Construction Site Stormwater Runoff Control (4.1 – 4.3)
- Post-Construction Stormwater Management in New Development (5.1 – 5.2)
- Pollution Prevention/Good Housekeeping for Municipal Operations (6.1 – 6.4)

In addition to the BMPs executed to satisfy the MCMs, the MS4 Program plan incorporates multiple BMPs to meet the special conditions of the permit as per 9VAC-25-890-40 Section I.B and I.C. These additional BMPs address mays to minimize discharges of pollutants of concern that have been allocated a wasteload in an approved TMDL, like those of the Chesapeake Bay, bacteria and PCB. Table 7 below summarizes the existing Fort Belvoir MS4 Program Plan BMPs and evaluates if they address PCB concerns, their effectiveness and provides recommendations for addressing PCBs where applicable.

Table 7: Summary of MS4 BMP Evaluation

Existing MS4 Program BMPs		Evaluation and Recommendations
Minimum Control Measure #1: Public Education and Outreach on Stormwater Impacts		
1.1	Implement a Public Education and Outreach Plan	**Evaluation:** the current plan utilizes various communication media (newspaper, Facebook, email mass notification, fact sheets) and is designed to reach, at least, an equivalent of 20% of each high-priority issue target audience **Recommendation:** Distribute PCB Fact sheet/brochure developed as per PCB BMP.1 during public outreach events. Coordinate with various departments (PAO, NEC, The Michaels' Group, etc.) to ensure widest dissemination of information
Minimum Control Measure #2: Public Involvement/Participation		
2.1	Maintain a webpage dedicated to the MS4 Program and Stormwater Pollution Prevention	**Evaluation:** All approved plans are currently posted to the Fort Belvoir Environmental Documents website for public comment and accessibility **Recommendation:** Publish the 2020 PCB TMDL Action Plan for public comment and upon finalization
2.2	Public Involvement Activities	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None.

Existing MS4 Program BMPs		Evaluation and Recommendations
Minimum Control Measure #3: Illicit Discharge Detection and Elimination		
3.1	Develop and Maintain an Accurate MS4 Map and Information Table	**Evaluation:** Developing, implementing, updating and supporting GIS data layers provide the opportunity to develop and upkeep a PCB specific GIS data layer. **Recommendation:** Review and update a GIS data layer that includes the locations of past and present PCB sites as needed
3.2	Prohibit Unauthorized Non-Stormwater Discharges into the MS4	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None.
3.3	Maintain and Implement and Update the U.S. Army, Fort Belvoir, Virginia Illicit Discharge Detection and Elimination (IDDE) Plan	**Evaluation:** The standard methods in place to detect illicit discharges apply to detecting potential PCB contamination. **Recommendation:** Continue annual screenings under the IDDE Plan
Minimum Control Measure #4: Construction Site Stormwater Runoff Control		
4.1	Communicate the Requirements of the Storm Water Program	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None.
4.2	Conduct Erosion and Sediment Control (ESC) Site Inspections.	**Evaluation:** Proper ESC will limit sediment transport **Recommendation:** Continue inspections to limit sediment deposition
4.3	Progressive Compliance and Enforcement Strategy	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None.
Minimum Control Measure #5: Post-Construction Runoff Control		
5.1	Develop a Stormwater Management Facility Tracking System	**Evaluation:** This BMP involves keeping an updated stormwater system database that can be used for PCB source tracking **Recommendation:** None.
5.2	Conduct Annual Inspections and Maintenance of Stormwater Management Facilities (SMFs)	**Evaluation:** BMPs can be a used as a manner to control discharges of PCB impacted soils before they enter state waters **Recommendation:** Continue Inspections of SMFs to identify potential issues early
Minimum Control Measure #6: Pollution Prevention/Good Housekeeping for Municipal Operations		
6.1	Develop and Maintain Written Procedures for Operations and Maintenance Activities	**Evaluation:** Fact Sheets developed under this BMP includes PCB awareness and reporting procedures **Recommendation:** Maintain and distribute PCB Fact Sheets to target audiences.

Existing MS4 Program BMPs		Evaluation and Recommendations
6.2	Develop and Implement Stormwater Pollution Prevention Plans (SWPPP)	**Evaluation:** This involves evaluating facilities for processes effecting stormwater runoff, including past and present PCB spills. **Recommendation:** Include PCB fact sheets in MS4 SWPPPs for high priority facilities where past and present PCB contamination is known
6.3	Develop and Implement Nutrient Management Plans	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None.
6.4	Revise and Implement Written Training Plan	**Evaluation:** The current Training plan includes details on training and materials associated with the PCB TMDL that provide opportunities to increase awareness of PCB hazards and reporting procedure at Fort Belvoir. **Recommendation:** Review and update as needed;
Chesapeake Bay TMDL for Nitrogen, Phosphorous and Sediment		
CHES BAY.1	Chesapeake Bay TMDL Action Plan Implementation	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None.
Polychlorinated Biphenyls (PCB) TMDL		
PCB.1	Distribute Educational Materials about PCBs	**Evaluation:** PCB fact sheets and brochures have been produced to include basic information on PCBs, their hazards, identification of PCB containing equipment, and reporting procedures **Recommendation:** Review and update as needed
PCB.2	Implement PCB Sampling Plan	**Evaluation:** This PCB Action Plan serves as a historical review of past and present PCB sites and includes a sampling plan for sites requiring monitoring or stormwater characterization **Recommendation:** Review plan annually and update appendices with new site statuses, sampling results and characterization of runoff, as needed; Report progress in MS4 annual report
PCB. M13	Install Traffic Barriers	**Evaluation:** This BMP is no longer applicable to the site, field investigations show that the site has been fully stabilized as a grassy recreational area and should be maintained stabilize to prevent sediment transport. **Recommendation:** Update Program Plan with new BMP suggestions listed in Table 10 (Section 9.2) of this updated plan.

9.1.2. EVALUATION OF EXISTING ISW PROGRAM BMPS

The ISW Major Permit (VA0092771), effective January 1st 2017, details the conditions and requirements for the management of industrial stormwater from 32 Representative Outfalls across the installation. The permit sets general requirements, applicable to all outfalls, which may be considered BMPs in regards to this PCB Action Plan. In addition to the general requirements, a Stormwater Pollution Prevention Plan (SWPPP) is implemented for each facility. The SWPPP is intended to document the selection, design, and installation of control measures, including BMPs to eliminate or reduce the pollutants in all stormwater discharges from the facility and to meet applicable water quality standards. (VADEQ, 2016)

As noted in Section 8 - Table 5; after the historical RCRA site review only five (5) permitted ISW outfalls were identified as being downstream of historical PCB contamination sites. The sector specific SWPPP requirements associated with these outfalls, as listed in Part III.D.1 through D.6 of the permit, will also be evaluated for applicability to the PCB TMDL. The associated industrial sectors regulated in this permit that are applicable to this PCB Action Plan are as follows:

- **Sector K** – Hazardous Waste Treatment, Storage, and Disposal Facilities
  - RO-005, RO-023
- **Sector L** – Landfills
  - RO-007
- **Sector P** – Land Transportation and Warehousing
  - RO-015
- **Sector S** – Air Transportation
  - RO-002

Table 8 below summarizes the existing Fort Belvoir ISW Permit required BMPs and evaluates if they address PCB concerns, their effectiveness and provides recommendations for addressing PCBs where applicable.

Table 8: Summary of ISW BMP Evaluation

ISW Permit Requirements for BMPs		Evaluation and Recommendations
General Permit Requirements – Applicable to All Representative Outfalls		
Part I A.1 – A.32	Semi-Annual Monitoring	**Evaluation:** No PCB sampling is required as a part of the Semi-annual monitoring for the 32 outfalls **Recommendation:** Use the results from the RCRA Closure review and site analysis, conducted as a part of this plan, to develop a PCB Sampling Plan
Part I C.2	Material Handling/Storage	**Evaluation:** This BMP requires the proper handling, storage, and disposal of materials and waste. Details for PCBs can be found in section 12.28 of the Fort Belvoir HWMMP. **Recommendation:** Include material handling and storage requirements in the facility SWPPP, training slides, and fact sheets
Part III A.5	Quarterly Visuals	**Evaluation:** The standard methods in place to identify possible contamination in discharges apply to detecting potential PCB contamination. **Recommendation:** None

ISW Permit Requirements for BMPs		Evaluation and Recommendations
Part III C	Develop and Implement SWPPP for Industrial facilities	**Evaluation:** This involves evaluating facilities for processes effecting stormwater runoff, including past and present PCB spills. **Recommendation:** Incorporate PCB TMDL Action plan requirements into facility SWPPPs; Include PCB fact sheets where historical PCB contamination is known
Facility SWPPP Requirements - Applicable to All Representative Outfalls		
Part III C.2.d (2)(a)	Good Housekeeping	**Evaluation:** This requires keeping a clean facility and performing routine inspections for leaks and conditions of drums, tanks and containers that may hold PCBs **Recommendation:** None
Part III C.2.d (2)(b)	Eliminating and Minimizing Exposure	**Evaluation:** This involves conducting operations in a manner to prevent exposure to rain, snow, snowmelt, and runoff; including the storage of PCB containing materials and equipment **Recommendation:** None
Part III C.2.d (2)(c)	Preventative Maintenance	**Evaluation:** Regular inspection, testing, maintenance and repairing of all stormwater controls to avoid situations that could result in leaks, spills and other releases of pollutants in stormwater discharge from the facility. **Recommendation:** Require submittal of inspection findings and deficiencies be reported to DPW-ENRD
Part III C.2.d (2)(d)	Spill Prevention and Response	**Evaluation:** Standard spill response preparedness would help prevent future potential PCB contributions by ensuring that in the event of a potential future PCB spill, the spill would be reported and cleaned up in a timely manner to reduce the chance of exposure to precipitation. **Recommendation:** Include Spill Response Procedures in Facility SWPPPs and annual training
Part III C.2.d (2)(e)	Salt Storage Piles	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None.
Part III C.2.d (2)(f)	Employee Training	**Evaluation:** training covers the components and goals of the SWPPP, and include such topics as spill response, good housekeeping, material management practices, control measure operation and maintenance **Recommendation:** Include PCB TMDL, reporting and proper handling, storage and disposal of PCB containing equipment in annual training
Part III C.2.d (2)(g)	Sediment and Erosion Control	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None

ISW Permit Requirements for BMPs		Evaluation and Recommendations
Part III C.2.d (2)(h)	Management of Run-off	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None
Part III C.2.d (2)(i)	Dust Suppression and Vehicle Tracking of Industrial Materials	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None
Part III C.2.e	Routine Facility Inspections	**Evaluation:** Quarterly inspections conducted by the facilities allows opportunities to identify sources for PCBs **Recommendation:** Require submittal of inspection findings and deficiencies be reported to DPW-ENRD
Part III C.2.g (1)	Annual Outfall Evaluation for Unauthorized Discharges	**Evaluation:** The standard methods in place to detect illicit/unauthorized discharges apply to detecting potential PCB contamination. **Recommendation:** None
Part III C.2.h	Annual Comprehensive Site Evaluation	**Evaluation:** An inspection to assess conditions and activities that could impact stormwater quality at the facility, and evaluate the effectiveness of control measures **Recommendation:** Modify SWPPP as necessary
Part III C.2.j	Maintain an updated SWPPP	**Evaluation:** SWPPP modifications shall be made after a discovery, observation or event requiring an action to be taken; including possible spills or leaks of PCB containing equipment. **Recommendation:** Incorporate PCB TMDL Action plan requirements into facility SWPPPs; Update as needed
Sector K Specific SWPPP Requirements – Applicable to RO-005 and RO-023		
N/A	All Operations occur inside; no exposure	**Evaluation:** All Hazwaste operations occur internally within these facilities; no additional SWPPP requirements **Recommendation:** None
Sector L Specific SWPPP Requirements – Applicable to RO-007		
Part III D.2.b (1)	Preventative Maintenance for leachate collection and treatment systems	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None.
Part III D.2.b (2)	Conduct Routine Facility Inspections of active landfill sites at least once every seven days	**Evaluation:** Conducting more frequent inspections allows more opportunities to identify sources for PCBs. **Recommendation:** None
Part III D.2.b (3)	Record Keeping and Internal Reporting Procedures	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None
Part III D.2.b (4)	Annual Outfall Evaluation for Unauthorized Discharges of	**Evaluation:** The standard methods in place to detect illicit/unauthorized discharges apply to detecting potential PCB contamination.

ISW Permit Requirements for BMPs		Evaluation and Recommendations
	leachate and vehicular wash water	**Recommendation:** None
Part III D.2.b (5)	Sediment and Erosion Control Plan	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None
Part III D.2.b (6)	Annual Comprehensive Site Evaluation for evidence of pollutants entering drainage	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None
Sector P Specific SWPPP Requirements – Applicable to RO-015		
Part III D.3.c (1)(a)-(f)	Prevent or minimize contamination of runoff from vehicle and equipment maintenance, cleaning, storage and fueling areas and locomotive sanding areas	**Evaluation:** PCBs may still be present in hydraulic fluids, lubricants, electrical equipment, and paints used during maintenance and cleaning operations **Recommendation:** None
Part III D.3.d	Routine Facility Inspections of vehicle and equipment maintenance, cleaning, storage and fueling areas and loading and unloading areas	**Evaluation:** Conducting regular inspections allows for opportunities to identify sources for PCBs. **Recommendation:** None
Part III D.3.e	Employee training on management of used oil, spent solvents, batteries and proper housekeeping, fueling, and painting procedures	**Evaluation:** Low level PCBs may still be present in some paints and used oils **Recommendation:** Include PCB TMDL, reporting and proper handling, storage and disposal of PCB containing equipment in annual training
Sector S Specific SWPPP Requirements – Applicable to RO-002		
Part III D.5.b (1)(a)-(e)	Prevent or minimize contamination of runoff from Aircraft, vehicle, and equipment maintenance, cleaning, storage and fueling areas	**Evaluation:** PCBs may still be present in hydraulic fluids, lubricants, electrical equipment, and paints used during maintenance and cleaning operations **Recommendation:** None
Part III D.5.b (2)(a)-(b)	Minimizing or eliminating the used of urea and glycol based deicing and anti-icing chemicals	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None
Part III D.5.b (3)	Implement a program to minimize the amount of pollutants discharged during deicing operations	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None
Part III D.5.b (4)	Conduct Routine Facility Inspections monthly during the deicing and anti-icing season	**Evaluation:** Conducting more frequent inspections allows more opportunities to identify sources for PCBs. **Recommendation:** None

ISW Permit Requirements for BMPs		Evaluation and Recommendations
Part III D.5.b (5)	Conduct Annual Comprehensive Site Evaluation during the deicing and anti-icing season	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None

9.1.3. EVALUATION OF EXISTING SITE SPECIFIC BMPS

The most common BMPs at past and present PCBs sites at Fort Belvoir include site remediation, natural vegetation, secondary containment, porous pavement, retention ponds, and spill berms. This section analyzes the site specific BMPs currently in use at each contamination site. BMPs are distinguished as structural or non-structural. Following each analysis, a conclusion is provided establishing if the existing BMPs are sufficient to address PCB concerns or not. If not sufficient, recommendations are made for site specific BMPs.

Table 9: Summary of Site Specific BMP Evaluation

Structural BMPs	Non-Structural BMPs	Evaluation and Recommendations
A23 *- Former Coal Storage Area*		
- ***Concrete berm*** separates the recycling area from the wooded stream to the east - ***Concrete cap*** exists where historical PCB spill occurred	- Extensive remediation - Annual cap inspections - Dump permitting process	**Evaluation**: Existing BMPs are sufficient **Recommendation:** no additional site specific BMPs recommended
A24 *- Former DPDO Storage Area*		
- ***Naturally Vegetated*** with thick brush and mature trees within fence line of the site preventing soil erosion/PCB migration - ***Soil cap*** exists where historical PCB spill occurred	- Extensive remediation - Annual cap inspection - Additional RCRA investigations planned	**Evaluation**: Existing BMPs are sufficient **Recommendation:** no additional site specific BMPs recommended
B03 *- Former BLDG 632 Hazardous Waste Storage Area*		
- ***Naturally vegetated*** with tall grasses, medium brush, and mature trees.	- Not applicable	BMPs are not applicable to this site as the building has been demolished and area is unused
B04 *- Former BLDG 633 Hazardous Waste Storage Area*		
- ***Naturally vegetated*** with thick brush and mature trees.	- Not applicable	BMPs are not applicable to this site as the building has been demolished and area is unused

Structural BMPs	Non-Structural BMPs	Evaluation and Recommendations
B09 *- Former Building 1430 Transformer Storage Area*		
- ***No direct drainage*** swales	- Not applicable	BMPs are not applicable to this site as the building has been demolished and impacted area was not exposed to precipitation
B10 *- Building 190 Former Indoor Storage Room*		
- ***No direct drainage*** swales	- Not applicable	BMPs are not applicable to this site as the building has been renovated and impacted area was not exposed to precipitation
L03* *- Former Asphalt Storage Pad near Building 2596*		
- ***Concrete pad*** exists where historical PCB spill occurred	- Extensive remediation - No longer Fort Belvoir Property	BMPs are not applicable to this site as the storage pad has been demolished and area is now an access road
L04 *- Hangar 3126 Former outdoor concrete pad transformer storage area*		
- ***Concrete pad*** exists where historical PCB spill occurred - ***Grassy Area*** surrounds pad, limiting PCB migration to impaired waters	- Not applicable	BMPs are not applicable to this site as the storage pad has been demolished and area is now a picnic and barbeque area
L47 *- Former Concrete Pad Transformer Storage Area*		
- ***Naturally vegetated*** with tall grass, medium brush, and young and mature trees.	- Not applicable	BMPs are not applicable to this site as the storage pad, pallets and sheds have been demolished and area is unused
N13 *- Building 1490 Hazardous Material Storage Area*		
- ***Secondary Containment*** cells for segregating and storing waste in north bay (3,000 gal) and south bay (5,000 gal) - ***Roofed*** structure prevents contact with precipitation - ***Pending Demolition*** after clean closure of the facility was approved	- ***Stopped Receiving Waste*** in 2011 and facility closure began in March 2019 - ***Decontaminated*** in April of 2019 and received approval for Clean-closure in September 2019	**Evaluation**: Facility received final approval for clean closure in September 2019 and is currently slated for demolition. **Recommendation:** no additional site specific BMPs recommended

Structural BMPs	Non-Structural BMPs	Evaluation and Recommendations
***MP11** - Former Building 1495 Outdoor Transformer Storage Area*		
- ***Asphalt cap*** exists where historical PCB spill occurred - ***Diversion*** of stormwater flows to a stream running on the north side of the site preventing sediment deposition	- ***Weekly inspections*** by Hazwaste Program - ***Quarterly Inspections*** by Industrial Stormwater Program - ***Annual training*** - Facility operating records - ***PCB monitoring*** as per 2013/2018/2020 PCB Action Plan - Additional RCRA investigations are ongoing	**Evaluation**: Existing BMPs are sufficient **Recommendation:** Continue PCB monitoring until RCRA site closure is reached or WQC is met for two consecutive sampling events; Sampling Plan is detailed in Section 10.
***MP12** - 249th Motorpool Area Stream Contamination*		
- Not applicable; this is an in-stream contamination	- Additional RCRA investigations are ongoing	**Evaluation**: Existing BMPs are sufficient **Recommendation:** no additional site specific BMPs recommended; Track restoration process
***MP13** - Theote Road/Warren Road Wash Yard*		
- ***Soil Removal*** was completed and the top 6' of soil was removed and disposed of - ***Vegetated Cap*** was used to stabilize the site after soil removal and regrading	- ***RCRA Investigations*** are planned and ongoing - ***Bi-Monthly*** windshield inspections to ensure the area remains stable	**Evaluation**: Existing BMPs are sufficient to address PCB concerns. **Recommendation:** Continue PCB monitoring until RCRA site closure is reached or WQC is met for two consecutive sampling events; Sampling Plan is detailed in Section 10.
***MP14** - Building 2476 Former Hazmat Storage Locker*		
- ***No direct drainage*** swales - ***Grassy Area*** surrounding impacted area limits PCB migration to impaired waters	- Additional RCRA investigations ongoing	**Evaluation**: Existing BMPs are sufficient **Recommendation:** no additional site specific BMPs recommended; Track restoration process
***NOTE: L03 is considered a "legacy site" due to the fact that this parcel of land is no longer a part of Fort Belvoir, is not included in Belvoir's land use inventory and is not covered by either the MS4 or ISW permits. HECSA has owned and operated this area since 1981.**		

9.2. BMP RECOMMENDATIONS SUMMARY AND IMPLEMENTATION PLAN

General and site specific BMPs recommended for implementation and the schedule for implementation and reporting are provided in Table 10.

Table 10: BMP Implementation and Reporting Schedule

Type and BMP ID	BMP Description	Implementation and Reporting Schedule
General: **PCB.1**	Develop and Distribute Information Sheet on PCBs for the public and tenant organizations as a part of an awareness campaign	**Implementation:** PCB fact sheets and brochures have been produced to include basic information on PCBs, their hazards, identification of PCB containing equipment, and reporting procedures Brochures to be posted on the Fort Belvoir website, be distributed to target audiences. The fact sheets will be included in all facility SWPPPs. Training slides on the PCB TMDL have been developed, highlighting identification and reporting of possible PCB leaks, and have been incorporated into MS4 and ISW training sessions **Reporting:** Status updates will be included in the MS4 Annual Report; update Appendix F with educational materials developed
General: **PCB.3**	Develop and Implement PCB Sampling Plan to comply with PCB TMDL requirements of MS4 and ISW permits	**Implementation:** The PCB Sampling Plan was developed as a part of this Action Plan and is provided in Section 10. The Sampling Plan will be implemented throughout the 5-year MS4 permit cycle. **Reporting:** - Results from sampling will be reported in the MS4 Annual Report as described by the plan. - Monitor remediation efforts and status for active RCRA sites (A24a, MP11, MP12, MP13, and MP14) until site closure is reached - Any sampling results will be kept in the associated facility SWPPP for the representative ISW Outfall (RO-005) - The Plan will be reviewed and updated if necessary to be submitted along with sampling results with the ISW permit renewal application, as per Part I.C.4

Type and BMP ID	BMP Description	Implementation and Reporting Schedule
Site Specific: **PCB.MP13**	Maintain vegetative cap to prevent deposition of sediment from site	**Implementation:** Use weekly windshield inspections to periodically inspect the site for erosion and bare areas as an illicit discharge **Reporting:** Corrective Actions taken as a part of the illicit discharge program will be reported in the annual report

Part I.E.1 of the MS4 general Permit states,

> *"The permittee shall identify no less than three high-priority stormwater issues to meet the goal of educating the public in accordance with Part I E 1 a. High-priority issues may include the following examples: Chesapeake Bay nutrients, pet wastes, local receiving water impairments, TMDLs, high-quality receiving waters, and illicit discharges from commercial sites. The high-priority public education and outreach program, as a whole, shall:*
>
> *(1) Clearly identify the high-priority stormwater issues;*
>
> *(2) Explain the importance of the high-priority stormwater issues;*
>
> *(3) Include measures or actions the public can take to minimize the impact of the high-priority stormwater issues;*
>
> *(4) Provide a contact and telephone number, website, or location where the public can find out more information."*

Dominion Virginia Power (DVP) supplies electricity to Fort Belvoir Main Post and FBNA. The electric distribution system on Fort Belvoir Main Post has been privatized since August 2007 under a contract signed by the Installation and DVP (Atkins, 2014). Fort Belvoir has no known remaining PCB items in service or storage on the installation. However, some items, such as ballasts, may be discovered during maintenance of older facilities (URS, 2014). Since the PCB source has been eliminated, there is not a need for an awareness campaign to eliminate and reduce discharges (Belvoir, 2012). BMPs PCB.1 and PCB.4 will be implemented to enhance public awareness of the TMDL and reporting procedures if PCBs are encountered, in compliance with Section 1.B.2.c of the MS4 general permit.

Status on implementation of the recommended general and site specific BMPs will be included in the PCB TMDL section of future MS4 Annual Reports. Once approved, the updated requirements of this TMDL Action Plan will be incorporated into the MS4 Program Plan by reference.

10. SAMPLING AND ANALYSIS PLAN

In compliance with Sections I.B.2.e and I.B.3 of the MS4 General Permit and Part I.C.4 of the ISW Major Permit, the following plan documents the PCB sampling requirements for sites assessed as needing monitoring or stormwater characterization due to historical PCB releases.

10.1. PCB SAMPLING PLAN

As per Part III.A.1 of the ISW Individual Permit and Section I.B.3 of the MS4 general permit, for all stormwater monitoring a minimum of one instantaneous grab sample shall be collected from the discharge resulting from a "measurable storm event" that occurs at least 72 hours from the previously measurable storm event. Where a grab sample is defined as an individual sample collected in less than 15 minutes and a measurable event is defined as an event that results in an actual discharge from the site by Part III.A.1 of the ISW permit. A measurable event shall be determined by field observations and will be documented for each attempted sampling event.

Grab samples shall be collected within the first 30 minutes or as soon thereafter as practical, but not to exceed three hours, of when the runoff or snowmelt begins discharging from the facility. The required 72-hour storm interval can be waived if documentation that less than a 72-hour interval was representative for local storm events during the sampling period. Documentation on each individual sample collected will include a sample ID, outfall identifier, the date and duration of the storm event sampled, the rainfall amount (in inches), and the amount of time since the last measurable storm event (in hours).

Each sample shall consist of a minimum 2-liter volume of unfiltered runoff that is collected into two 1-liter or one 2.5-liter amber glass jar that are certified PCB free and provided by the laboratory completing the analysis. The sampling event will be recorded on a laboratory provided Chain-of-Custody form to accompany all samples from the time of initial generation through delivery to the analytical laboratory. The samples will be placed in a hard-sided shipping cooler, properly preserved on ice, protected from breakage or loss, and shipped to the laboratory completing the analysis immediately following the sampling event.

The samples will be analyzed by a VELAP certified laboratory included in the VADEQ list of laboratories performing low level PCB congener analysis (Method 1668) (VADEQ, 2012). The samples will be analyzed by EPA Method 1668A for PCB congeners. The unadjusted and appropriately qualified individual PCB congener analytical results, laboratory and field QA/QC documentation, and results shall be reported. Total PCBs are to be computed as the summation of the reported, quantified congeners following the procedures outlined in VADEQ's TMDL Guidance Memo No. 14-2004. Table 11 below summarizes the sampling requirements.

Table 11: Summary of Sampling Requirements

Analysis and Method Number	PCBs by EPA Method 1668A*
Preservatives	Chill to ≤6˚C within 15 minutes, but not frozen
Analytical Holding Time	365 days
Sample Volume/ Sample Container	2 x 1 liter ***or*** 1 x 2.5 liter Amber Glass Jar

*****Any equivalent method shall be submitted to DEQ-NRO for review and approval prior to sampling and analysis.

10.1.1. MP11 - BUILDING 1495 FORMER OUTDOOR TRANSFORMER STORAGE AREA

MP11 was included in the Final PCB TMDL Action Plan dated March 2013 and at that time was recommended for stormwater characterization. Sampling as per the 2013 Action plan began in November 2013 and results from sampling events are summarized below in Table 12. During each sampling event, grab samples were collected from the two sampling locations, ISW-PCB-1495-SW1 and ISW-PCB-1495-SW3, shown in Appendix A-11.

In the tidal Potomac watershed, loads from the regulated NPDES stormwater outfalls were expressed as a single stormwater WLA for each impaired water body, as discussed in Section 4. EPA recognized that available data and information are usually not detailed enough to determine WLAs for NPDES regulated stormwater discharges on an outfall-specific basis. Because the stormwater WLAs were calculated for the total direct drainage areas discharging to the impaired bodies EPA recommended that effluent limits should be expressed as Best Management Practices (BMPs) or other similar requirements, rather than as numeric effluent limits (U.S. EPA, 2002).

9VAC 25-260-140 lists numerical water quality criteria for PCBs based on human health risk at 0.00064 ppb or 640 picograms/L (ρg/L**)**. The Water Quality Criteria (WQC) represents concentration in the water column where the bioaccumulation of tPCBs in fish is minimized to be protective of fish consumption, by humans. In order to evaluate the effectiveness of the BMPs, put in place to meet the WLA for the Tidal Potomac PCB TMDL due to bioaccumulation in fish, individual sample results were compared to the listed WQC.

In November 2013 the first water quality sampling event occurred at MP11 and is used as the baseline in analysis. No sampling occurred in 2014 due to the active soil removal and remediation that was occurring as a part of the Building 1495 renovations. After two rounds of soil removal in the vicinity of building 1495 the outfalls were sampled again in April 2015 and resulted in significantly higher concentrations of PCBs. This was attributed to the large amount of soil disturbance due to construction in the area. This was confirmed when the September 2015 results showed a dramatic drop after the site had been fully stabilized and the final asphalt cap was in place. A downward trend towards the WQC limit could already be seen.

Sampling was conducted in February 2017 and showed an additional spike in tPCB concentrations at both SW1 and SW3, as shown in Table 12 below. During sampling, it was noted that sediment accumulation was apparent in both in the channel (SW1) and the culvert outlet (SW3). The sediment at these locations may still contain residual PCBs because soil removal done in 2014 did not occur within the stormwater conveyance system. Because this site will be investigated under the RCRA Corrective Action Program cleaning of these conveyance systems is not recommended until the full limits and extent of contamination has been determined.

Stormwater sampling continued at SW1 and SW3 in both the spring and fall of 2019. Results from these events showed substantially lower concentrations of PCBs being mobilized when compared to events prior to the re-stabilization of the hill side that occurred in 2015. There was a slight spike noted in the fall sample for SW3, but can be directly attributed to the rain intensity being significantly higher during the second event. A trend towards consistently meeting the WQC can be seen. Additionally, in Mid-2019 repairs to upstream channels along Sharon Lane Road begin and the project was completed in Early 2020. These repairs consisted of regrading channels to increase capacity and prevent runoff from topping the road, and lining them with rip-rap to slow runoff preventing sediment deposition. These channels also work to divert upstream runoff away from building 1495 and impacted areas and towards a stream flowing to the north of the site. It is anticipated that the repairs will restore the downward trajectory of PCBs in stormwater to meet the WQC.

Table 12: Summary of PCB Sampling Completed at MP11

Sample Date	SW1 tPCBs (ρg/L)	SW3 tPCBs (ρg/L)	WQC for tPCBs (ρg/L)
11/27/13	**4,470**	**910**	640
04/30/15	**93,100**	**12,300**	640
09/29/15	**328**	**1,680**	640
02/28/17	**2,237**	**3,029**	640
2/28/19	-	**475**	640
3/31/19	**677**	-	640
11/22/19	-	**667**	640

Stormwater runoff monitoring will continue at MP11 until Virginia WQC for tPCBs based on human health risks (640 ρg/L) are met for at least two sampling events or the site reaches RCRA closure. PCBs accumulate in fish tissue more slowly than seasonal fluctuations occur, and the increases do not correspond to seasonal variations. As PCBs bio-accumulate over time, annual variations may be considered more important than seasonal variations, particularly if a fish tissue target is used (U.S. EPA, 2011). Therefore, MP11 will be sampled at least once annually during critical conditions when heavier more intense rain is expected to displace the most sediment, this usually occurs during the summer months, but can occur during any season. During each sampling event, grab samples will be collected from the same two sampling locations (ISW-PCB-1495-SW1 and ISW-PCB-1495-SW3) discussed above. ISW-PCB-1495-SW2 will remain as the backup location for ISW-PCB-1495-SW3.

10.1.2. MP13 – Warren Road and Theote Road Wash Yard

MP13 is a newly identified PCB site that requires stormwater characterization based on soil sample results showing an exceedance of PCB (Aroclor-1260) in soils when compared to U.S. EPAs Soil Screening Level (SSL) for protection of groundwater. The site is an active restoration site and is scheduled to begin RFI studies in the 2018/2019 fiscal year.

Stormwater runoff at the Warren Road and Theote Road PCB site will be sampled following the procedures discussed in Section 10.1 above. During each sampling event, grab samples will be collected from the two of the three sampling locations (MS4-PCB-Warren-1, MS4-PCB-Warren-2, MS4-PCB-Warren-3) shown in Appendix A-13. MS4-PCB-Warren-3 is difficult to access due to the heavy vegetation in the area, therefore the primary sampling location will be MS4-PCB-Warren-2, the inlet to the culvert.

Initial Stormwater sampling was conducted in August 2017 and the results are shown in table 13, these will be considered the baseline values for future analysis. Both drainage areas showed tPCBs above the WQC, but it should be noted that the outfall pipe for MS4-PCB-Warren-2 is partially buried which is allowing water to pool and leads to heavy sedimentation buildup. The sediment accumulation at this location may be the reason for substantially higher concentrations leaving the site via the southeastern outfall. Secondary sampling occurred in the winter months of 2019, and these results are also shown in table 13. There did not seem to be any seasonally driven fluctuation in the results, but it did show that outfall designated as Warren-2 is discharging the bulk of the sediment being transported offsite.

After the January 2019 sampling event the Restoration Program completed an Interim Soil Removal at the Warren and Theote Road Yard. The removal included the disposal of a large soil stock pile at the middle

of the site, disposal of concrete debris across the site, and the disposal of the top 6 inches of soil from across the site. Following the removal, the site was regraded and stabilized to be a fully open grassed recreational area. The Restoration Program is currently evaluating all data and in the process of preparing a final report for VADEQ submittal. Site investigations have shown that the regrading and stabilization of the site has led to less runoff and more infiltration. It is anticipated that the restoration of the site and its vegetative cover will encourage a downward trajectory of PCBs being transported in stormwater towards meeting the WQC.

Table 13: Summary of PCB Sampling Completed at MP13

Sample Date	Warren-1 tPCBs (ρg/L)	Warren-2 tPCBs (ρg/L)	WQC for tPCBs (ρg/L)
08/07/17	**692**	**2,468**	640
01/24/19	**495**	**10,456**	640

PCBs accumulate in fish tissue more slowly than seasonal fluctuations occur, and the increases do not correspond to seasonal variations. As PCBs bio-accumulate over time, annual variations may be considered more important than seasonal variations, particularly if a fish tissue target is used (U.S. EPA, 2011). Therefore, MP13 will be sampled at least once annually during critical conditions when heavier more intense rain is expected to displace the most sediment, this usually occurs during the summer months, but can occur during any season. During each sampling event, grab samples will be collected from the same two sampling locations (Warren-1 and Warren-2) discussed above.

This site will also be investigated under the RCRA Corrective Action Program to determine the full limits and extent of contamination. Results from the RCRA Program in conjunction with the water quality results will be used to make future BMP recommendations for the site. Stormwater runoff monitoring will continue at MP13 until Virginia WQC for tPCBs based on human health risks (640 ρg/L) are met for at least two sampling events or the site reaches RCRA closure.

10.2. REPORTING

As per Section I.B.5 of the 2013-2018 MS4 General Permit and Parts I.D.5 and II.B.9 of the 2018-2023 MS4 General Permit, the MS4 Annual Report will include:

- Status on the implementation of both BMPs and Sampling recommended in this Plan
- Evaluation of the BMPs listed in table 10 for their effectiveness in meeting water quality standards
- The results of any monitoring conducted as a part of the PCB sampling plan or by the Restoration Program as a part of remediation efforts
- Update to RCRA site remediation status for still active sites (A24a, MP11, MP12, MP13, and MP14)
- Any changes required to the plan due to monitoring results

The reissuance of the MS4 General Permit which became effective on November of 2018 also came with additional reporting as per Part II.B.6.b. If at any time during the term of this permit, the permittee discovers a previously unidentified significant source of PCBs within the permittee's MS4 regulated service area, the permittee shall notify DEQ in writing within 30 days of discovery.

In addition to the annual reporting done by through MS4 program, all sample results for MP11, the building 1495 PCB site, associated with ISW RO-005 will be kept with the associated facility SWPPP and reported on as per Part I.4.d of the ISW Individual Major Permit.

The submittal of all results shall include the unadjusted and appropriately qualified individual PCB congener analytical results and laboratory and field QA/QC documentation. Total PCBs are to be computed as the summation of the reported, quantified congeners as per guidance memo 14-2004. The results of all sampling completed during the initial five-year term of the ISW permit shall be submitted to VADEQ along with an updated version of this plan with the next application for reissuance which is due at least 180 days prior to the expiration of the ISW permit (July 4th, 2021).

11. CONCLUSIONS

Two sites were evaluated as requiring monitoring or stormwater runoff characterization, MP11 and MP13. The remaining 12 historic PCB locations are recommended for No Further Action based on historical records of remediation, past sampling results, and current site conditions limiting the potential for these sites to discharge PCBs to impaired water bodies.

A sampling plan detailing the requirement for monitoring at MP11 and MP13 is provided in Section 10. Site Specific BMPs are recommended to minimize potential PCB discharge from the MP13, the Warren Road and Theote Road site. Additionally, general BMPs to address PCB awareness, their hazards, and reporting across the installation were also developed.

Future MS4 Annual Reports will provide BMP status updates as well as new sampling data and site determinations as they are available. Any new data will also be used to update the appropriate appendices of this plan.

This Action Plan will be updated, as needed, to reflect new or revised TMDL requirements that occur as a result of new TMDL information. If changes to the plan are required, an updated Action Plan will be submitted along with the first MS4 Annual Report immediately following the changes.

Implementing this action plan supports Fort Belvoir compliance with the PCB TMDL requirements applicable to both the MS4 General Permit VAR040093 and the ISW Individual Major Permit VA0092771.

12. PUBLIC COMMENT

Part II B.7 of the General Permit requires that Fort Belvoir provides an opportunity for receipt and consideration of public comment regarding the proposed actions to meet the local TMDL for no less than 15 days. The EPA states in Federal Register Volume 64, No. 235, page 68,750 on December 8, 1999, regarding "public" and its applicability to MS4 programs, the following:

> *"EPA agrees with the suggested interpretation of "public" for DOD facilities as "the resident and employee population within the fence line of the facility." The department recommends that nontraditional MS4 operators, such as state and federal entities and local school districts, utilize this statement as guidance when determining their applicable "public" for compliance with this permit"*

Therefore, Fort Belvoir has adopted this definition and defines the "public" as anyone who lives or works within the jurisdictional boundary of the Garrison as shown in Figure 1.

For this 2020 Update to the PCB TMDL Action Plan, finalized in March 2020, the public comment period involved the posting of the Draft plan on the Fort Belvoir Home Page under Environmental Documents for Stormwater (http://www.belvoir.army.mil/environdocs.asp) on March 16, 2020. A Notice of Availability for the document was:

- Posted on the main Fort Belvoir Facebook page on March 16th and March 18th, 2020
- Published in the Fort Belvoir newspaper, *The Belvoir Eagle*, which is available in print and online at http://www.belvoireagleonline.com/ on March 19th and April 9th, 2020.

Fort Belvoir provided for the public comment period to be open until April 15, 2020 allowing for at least 15 days for public comment as required under Part II.A.12. Fort Belvoir DPW did not receive any comments during this period therefore, this is the only section updated prior to submittal of this Final 2020 PCB TMDL Action Plan to VADEQ due on April 28, 2020.

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2020

APPENDIX A

HISTORIC PCB SITES SAMPLE SUMMARIES AND FIGURES

FORT BELVOIR

2020

A23: Former Coal Storage Area, PCB Spill Site

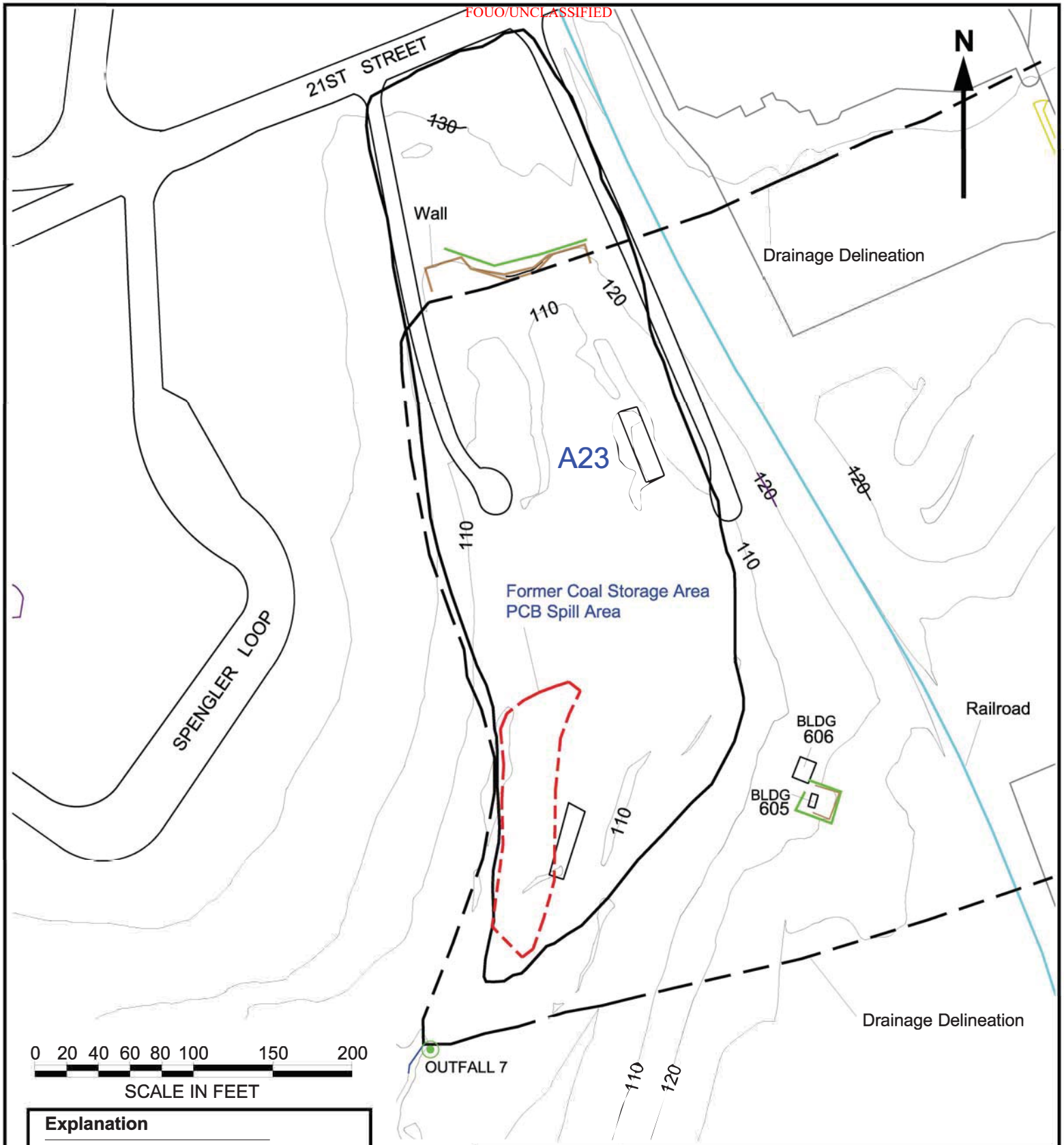
PCB TMDL ACTION PLAN – APPENDIX A-1

FORT BELVOIR

Tabe A-1: A23 Historical PCB Sampling Data

Sample ID	Sample Date	Matrix	Analysis Mehthod	PCBs (mg/kg)	Aroclor 1016 (mg/kg)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1248 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
Background Sediment 4-PCB Spill Site 2	unknown	Soil	NA	1.1	NA	NA	NA	NA	NA	NA	NA
1	5/22/1979	NA	NA	42.6	NA	NA	NA	NA	NA	NA	NA
2	5/22/1979	NA	NA	777	NA	NA	NA	NA	NA	NA	NA
3	5/22/1979	NA	NA	28.1	NA	NA	NA	NA	NA	NA	NA
4	5/22/1979	NA	NA	36.3	NA	NA	NA	NA	NA	NA	NA
5	5/22/1979	NA	NA	1,179	NA	NA	NA	NA	NA	NA	NA
6	5/22/1979	NA	NA	21.1	NA	NA	NA	NA	NA	NA	NA
7	5/22/1979	NA	NA	297	NA	NA	NA	NA	NA	NA	NA
8	5/22/1979	NA	NA	19.3	NA	NA	NA	NA	NA	NA	NA
9	5/22/1979	NA	NA	442	NA	NA	NA	NA	NA	NA	NA
10	5/22/1979	NA	NA	87	NA	NA	NA	NA	NA	NA	NA
11	5/22/1979	NA	NA	619	NA	NA	NA	NA	NA	NA	NA
12	5/22/1979	NA	NA	1.4	NA	NA	NA	NA	NA	NA	NA
1	July-79	NA	NA	<1	NA	NA	NA	NA	NA	NA	NA
2	July-79	NA	NA	255	NA	NA	NA	NA	NA	NA	NA
3	July-79	NA	NA	226	NA	NA	NA	NA	NA	NA	NA
4	July-79	NA	NA	834	NA	NA	NA	NA	NA	NA	NA
5	July-79	NA	NA	414	NA	NA	NA	NA	NA	NA	NA
Site 1	8/23/1979	NA	NA	3,393	NA	NA	NA	NA	NA	NA	NA
Sediment A Surface	8/23/1979	Soil	NA	170	NA	NA	NA	NA	NA	NA	NA
Sediment A 1 1/2 inch	8/23/1979	Soil	NA	176	NA	NA	NA	NA	NA	NA	NA
Sediment A 3 1/2 inch	8/23/1979	Soil	NA	369	NA	NA	NA	NA	NA	NA	NA
Sediment A 4 inch	8/23/1979	Soil	NA	134	NA	NA	NA	NA	NA	NA	NA
Sediment B Surface	8/23/1979	Soil	NA	219	NA	NA	NA	NA	NA	NA	NA
Sediment B 1 inch	8/23/1979	Soil	NA	152	NA	NA	NA	NA	NA	NA	NA
Sediment B 2 inch	8/23/1979	Soil	NA	98	NA	NA	NA	NA	NA	NA	NA
Sediment B 3 inch	8/23/1979	Soil	NA	134	NA	NA	NA	NA	NA	NA	NA
Sediment B 4 inch	8/23/1979	Soil	NA	34	NA	NA	NA	NA	NA	NA	NA
Background 1	8/23/1979	NA	NA	105	NA	NA	NA	NA	NA	NA	NA
Background 2	8/23/1979	NA	NA	2,724	NA	NA	NA	NA	NA	NA	NA
Background 3	8/23/1979	NA	NA	57.6	NA	NA	NA	NA	NA	NA	NA
Background Sediment 1-1-2	1/10/1980	Soil	NA	0.55	NA	NA	NA	NA	NA	NA	NA
Background Sediment 5	1/10/1980	Soil	NA	0.56	NA	NA	NA	NA	NA	NA	NA
Background Soil 1	1/10/1980	Soil	NA	<0.4	NA	NA	NA	NA	NA	NA	NA
Surface soil drainage area	1/10/1980	Soil	NA	99 to 495 (range)	NA	NA	NA	NA	NA	NA	NA
Sediment drainage channel	1/10/1980	Soil	NA	4.7 to 38 (range)	NA	NA	NA	NA	NA	NA	NA
SP-4508	1/28/1981	Sediment	NA	NA	NA	NA	NA	NA	NA	NA	ND
SP-4509	1/28/1981	Sediment	NA	NA	NA	NA	NA	NA	NA	NA	0.47
SP-4510	1/28/1981	Sediment	NA	NA	NA	NA	NA	NA	NA	NA	11
SP-4511	1/28/1981	Sediment	NA	NA	NA	NA	NA	NA	NA	NA	27.1
SP-4512	1/28/1981	Sediment	NA	NA	NA	NA	NA	NA	NA	NA	547.6
1-SP-4513	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	1,090
2-SP-4514	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	24.3
3-SP-4515	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	3
4-SP-4516	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	1.4
5-SP-4517	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	1.2
6-SP-4518	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	1.2
7-SP-4519	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	4.7
8-SP-4520	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	181
9-SP-4521	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	2,990
10-SP-4522	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	12,698
11-SP-4523	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	255
12-SP-4524	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	21.30
13-SP-4525	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	4.6
14-SP-4526	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	3,218
15-SP-4527	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	2,855
16-SP-4528	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	2,209
17-SP-4529	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	1,051
18-SP-4530	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	875
19-SP-4531	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	178
20-SP-4532	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	5,984
21-SP-4533	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	24.90
22-SP-4534	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	27
23-SP-4535	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	22.5
SP-4753	1/28/1981	Sediment	NA	NA	NA	NA	NA	NA	NA	NA	663
SP-4754	1/28/1981	Sediment	NA	NA	NA	NA	NA	NA	NA	NA	209
SP-4755	1/28/1981	Sediment	NA	NA	NA	NA	NA	NA	NA	NA	136
SP-4756	1/28/1981	Sediment	NA	NA	NA	NA	NA	NA	NA	NA	28
SP-4757	1/28/1981	Sediment	NA	NA	NA	NA	NA	NA	NA	NA	18.5
Old Coal Yard 1	11/1/1982	Soil	NA	NA	NA	NA	NA	<1 (mg/L)	NA	<1 (mg/L)	8 (mg/L)
Old Coal Yard A	11/4/1982	Soil	NA	NA	NA	NA	NA	<1 (mg/L)	NA	<1 (mg/L)	210 (mg/L)
Old Coal Yard B	11/4/1982	Soil	NA	NA	NA	NA	NA	<1 (mg/L)	NA	<1 (mg/L)	29 (mg/L)
Old Coal Yard C	11/4/1982	Soil	NA	NA	NA	NA	NA	<1 (mg/L)	NA	<1 (mg/L)	9 (mg/L)
Old Coal Yard D	11/4/1982	Soil	NA	NA	NA	NA	NA	<1 (mg/L)	NA	<1 (mg/L)	27 (mg/L)
Old Coal Yard E	11/4/1982	Soil	NA	NA	NA	NA	NA	<1 (mg/L)	NA	<1 (mg/L)	51 (mg/L)
Site A Old Coal Yard: Drainage Ditch	6/7/1983	Soil	NA	NA	NA	NA	NA	<1 (mg/L)	NA	<1 (mg/L)	37 (mg/L)
Site B Old Coal Yard: Drainage Ditch	6/7/1983	Soil	NA	NA	NA	NA	NA	<1 (mg/L)	NA	<1 (mg/L)	2 (mg/L)
Outfall 7	12/22/2011	Water	NA	NA	ND	ND	ND	ND	ND	ND	ND

NA: Not Available
ND: Not Detected
*Results calculated per Webb, R.G. McCall, A.C., Journal of Chromatographic Science, 11, 366 (1973)
The source of the data: Final version of Visual Site Inspection (TetraTech, 2008).



DATE 1/18/2013	TIDEWATER INC	
DRAWN HS	**Figure 3.** **A23 Former Coal Storage Area Fort Belvoir, VA**	
APPROVED WSY	DRAWING: Fig3_A23_Map.dwg	REV 1.0
PROJECT: 4008-002	SCALE GRAPHIC	SHEET 1/1

2020

A24: Former DPDO Storage Area

PCB TMDL ACTION PLAN – APPENDIX A-2

FORT BELVOIR

Table A-2: A24 Historical PCB Sampling Data

Sample ID	Sample Date	Matrix	Analysis Method	PCBs (mg/L)	PCBs (mg/kg)	Aroclor 1016 (µg/kg)	Aroclor 1221 (µg/kg)	Aroclor 1232 (µg/kg)	Aroclor 1242 (µg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
Soil 1-PCB Spill Site 2	4/4/1979	Soil	NA	NA	156	NA	NA	NA	NA	NA	NA
Soil 2-PCB Spill Site 2	4/4/1979	Soil	NA	NA	495	NA	NA	NA	NA	NA	NA
Soil 3-PCB Spill Site 2	4/4/1979	Soil	NA	NA	151	NA	NA	NA	NA	NA	NA
Soil 4-PCB Spill Site 2	4/4/1979	Soil	NA	NA	99	NA	NA	NA	NA	NA	NA
Soil 5-PCB Spill Site 2	4/4/1979	Soil	NA	NA	301	NA	NA	NA	NA	NA	NA
Soil 6-PCB Spill Site 2	4/4/1979	Soil	NA	NA	118	NA	NA	NA	NA	NA	NA
Soil 7-PCB Spill Site 2	4/4/1979	Soil	NA	NA	287	NA	NA	NA	NA	NA	NA
Soil 8-PCB Spill Site 2	4/4/1979	Soil	NA	NA	165	NA	NA	NA	NA	NA	NA
Soil 9-PCB Spill Site 2	4/4/1979	Soil	NA	NA	110	NA	NA	NA	NA	NA	NA
Soil 10-PCB Spill Site 2	4/4/1979	Soil	NA	NA	142	NA	NA	NA	NA	NA	NA
Soil 11-PCB Spill Site 2	4/4/1979	Soil	NA	NA	572	NA	NA	NA	NA	NA	NA
Soil 12-PCB Spill Site 2	4/4/1979	Soil	NA	NA	219	NA	NA	NA	NA	NA	NA
Soil 13-PCB Spill Site 2	4/4/1979	Soil	NA	NA	33	NA	NA	NA	NA	NA	NA
Soil 14-PCB Spill Site 2	4/4/1979	Soil	NA	NA	1210	NA	NA	NA	NA	NA	NA
Soil 15-PCB Spill Site 2	4/4/1979	Soil	NA	NA	2,605	NA	NA	NA	NA	NA	NA
Soil 16-PCB Spill Site 2	4/4/1979	Soil	NA	NA	1,679	NA	NA	NA	NA	NA	NA
Soil 17-PCB Spill Site 2	4/4/1979	Soil	NA	NA	244	NA	NA	NA	NA	NA	NA
Soil 18-PCB Spill Site 2	4/4/1979	Soil	NA	NA	136	NA	NA	NA	NA	NA	NA
Soil 19-PCB Spill Site 2	4/4/1979	Soil	NA	NA	356	NA	NA	NA	NA	NA	NA
Water Sample 2-2-2	4/4/1979	Water	NA	0.0023 (mg/L)	NA	NA	NA	NA	NA	NA	NA
Soil 2-3-3	4/4/1979	Soil	NA	NA	<25	NA	NA	NA	NA	NA	NA
Soil 2-10-2	4/4/1979	Soil	NA	NA	95	NA	NA	NA	NA	NA	NA
Soil 2-2-2	4/4/1979	Soil	NA	NA	646	NA	NA	NA	NA	NA	NA
Soil 2-3-2	4/4/1979	Soil	NA	NA	<5	NA	NA	NA	NA	NA	NA
Soil 2-4-2	4/4/1979	Soil	NA	NA	1,000	NA	NA	NA	NA	NA	NA
Soil 2-5-2	4/4/1979	Soil	NA	NA	96	NA	NA	NA	NA	NA	NA
Soil 2-7-2	4/4/1979	Soil	NA	NA	1,483	NA	NA	NA	NA	NA	NA
Soil 2-8-2	4/4/1979	Soil	NA	NA	1,550	NA	NA	NA	NA	NA	NA
Soil 2-6-2	4/4/1979	Soil	NA	NA	18	NA	NA	NA	NA	NA	NA
Soil 2-1-3	4/4/1979	Soil	NA	NA	174	NA	NA	NA	NA	NA	NA
Soil 2-1-2	4/4/1979	Soil	NA	NA	3,295	NA	NA	NA	NA	NA	NA
Soil 2-12-2	4/4/1979	Soil	NA	NA	<5	NA	NA	NA	NA	NA	NA
Soil 2-13-2	4/4/1979	Soil	NA	NA	<5	NA	NA	NA	NA	NA	NA
Soil 2-14-2	4/4/1979	Soil	NA	NA	<5	NA	NA	NA	NA	NA	NA
ediment 1-PCB Spill Site	4/4/1979	Soil	NA	NA	7.2	NA	NA	NA	NA	NA	NA
ediment 2-PCB Spill Site	4/4/1979	Soil	NA	NA	4.7	NA	NA	NA	NA	NA	NA
ediment 3-PCB Spill Site	4/4/1979	Soil	NA	NA	38	NA	NA	NA	NA	NA	NA
Absorbent pre Site 2	5/22/1979	NA	NA	NA	31,910	NA	NA	NA	NA	NA	NA
Absorbent 1 Site 2	5/22/1979	NA	NA	NA	31,962	NA	NA	NA	NA	NA	NA
Absorbent 2 Site 2	5/22/1979	NA	NA	NA	52,784	NA	NA	NA	NA	NA	NA
Absorbent 3 Site 2	5/22/1979	NA	NA	NA	4,445	NA	NA	NA	NA	NA	NA
Hexane wash pre Site 2	5/22/1979	NA	NA	NA	864	NA	NA	NA	NA	NA	NA
Hexane wash 1 Site 2	5/22/1979	NA	NA	NA	2,205	NA	NA	NA	NA	NA	NA
Hexane wash 2 Site 2	5/22/1979	NA	NA	NA	5,048	NA	NA	NA	NA	NA	NA
Hexane wash 3 Site 2	5/22/1979	NA	NA	NA	41	NA	NA	NA	NA	NA	NA
Site 2	8/23/1979	NA	NA	NA	25,570	NA	NA	NA	NA	NA	NA
Sediment 1	unknown	Soil	NA	NA	27	NA	NA	NA	NA	NA	NA
Sediment 2	1/10/1980	Soil	NA	NA	0.33	NA	NA	NA	NA	NA	NA
Sediment 3	1/10/1980	Soil	NA	NA	0.28	NA	NA	NA	NA	NA	NA
Sediment 4	1/10/1980	Soil	NA	NA	0.22	NA	NA	NA	NA	NA	NA
Sediment 6	unknown	Soil	NA	NA	0.5	NA	NA	NA	NA	NA	NA
Soil 2	unknown	Soil	NA	NA	<15	NA	NA	NA	NA	NA	NA
Soil 3	unknown	Soil	NA	NA	<15	NA	NA	NA	NA	NA	NA
Soil 4	unknown	Soil	NA	NA	<15	NA	NA	NA	NA	NA	NA
Soil 5	unknown	Soil	NA	NA	20	NA	NA	NA	NA	NA	NA
Soil 6	unknown	Soil	NA	NA	2,445	NA	NA	NA	NA	NA	NA
Soil 7	unknown	Soil	NA	NA	28	NA	NA	NA	NA	NA	NA
Background Sediment 5	unknown	Soil	NA	NA	0.56	NA	NA	NA	NA	NA	NA
Woodchips	unknown	NA	NA	NA	4	NA	NA	NA	NA	NA	NA
Background Soil 1	unknown	Soil	NA	NA	<0.4	NA	NA	NA	NA	NA	NA
Spill Site A	unknown	NA	NA	NA	68,503	NA	NA	NA	NA	NA	NA
Spill Site B	unknown	NA	NA	NA	10,714	NA	NA	NA	NA	NA	NA
Absorbent pre Site 1	4/23/1980	NA	NA	NA	57,340	NA	NA	NA	NA	NA	NA
Absorbent 2 Site 1	4/23/1980	NA	NA	NA	16,299	NA	NA	NA	NA	NA	NA
Absorbent 3 Site 1	4/23/1980	NA	NA	NA	64,141	NA	NA	NA	NA	NA	NA
Hexane wash pre Site 1	4/23/1980	NA	NA	NA	2,273	NA	NA	NA	NA	NA	NA
Hexane wash 2 Site 1	4/23/1980	NA	NA	NA	3,145	NA	NA	NA	NA	NA	NA
Hexane wash 3 Site 1	4/23/1980	NA	NA	NA	99	NA	NA	NA	NA	NA	NA
HexWashBin#1-5385	10/9/1981	Water	NA	22.57	NA	NA	NA	NA	NA	NA	NA
HexWashBin#2-5386	10/9/1981	Water	NA	268.09	NA	NA	NA	NA	NA	NA	NA
HexWashBin#3-5387	10/9/1981	Water	NA	44.07	NA	NA	NA	NA	NA	NA	NA
HexWashBin#4-5388	10/9/1981	Water	NA	30.59	NA	NA	NA	NA	NA	NA	NA
HexWashPad#1-5389	10/9/1981	Water	NA	12	NA	NA	NA	NA	NA	NA	NA
HexWashPad#2-5390	10/9/1981	Water	NA	15	NA	NA	NA	NA	NA	NA	NA
HexWashPad#3-5391	10/9/1981	Water	NA	5.85	NA	NA	NA	NA	NA	NA	NA
HexWashPad#4-5392	10/9/1981	Water	NA	6	NA	NA	NA	NA	NA	NA	NA
HexWashPad#5-5393	10/9/1981	Water	NA	9.2	NA	NA	NA	NA	NA	NA	NA
HexWashPad#6-5394	10/9/1981	Water	NA	5.5	NA	NA	NA	NA	NA	NA	NA
HexWashPad#7-5395	10/9/1981	Water	NA	4.31	NA	NA	NA	NA	NA	NA	NA
HexWashPad#8-5396	10/9/1981	Water	NA	4.19	NA	NA	NA	NA	NA	NA	NA
HexWashPad#9-5397	10/9/1981	Water	NA	2.47	NA	NA	NA	NA	NA	NA	NA
HexWashPad#10-5398	10/9/1981	Water	NA	40.5	NA	NA	NA	NA	NA	NA	NA
HexWashPad#11-5399	10/9/1981	Water	NA	15.3	NA	NA	NA	NA	NA	NA	NA
HexWashPad#12-5400	10/9/1981	Water	NA	1.74	NA	NA	NA	NA	NA	NA	NA
HexWashPad#13-5401	10/9/1981	Water	NA	6.1	NA	NA	NA	NA	NA	NA	NA
HexWashPad#14-5402	10/9/1981	Water	NA	8.25	NA	NA	NA	NA	NA	NA	NA
HexWashPad#15-5403	10/9/1981	Water	NA	35.18	NA	NA	NA	NA	NA	NA	NA
Road1-5291	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	1,287.9
M11-5335	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	13.8
M12-5336	10/20/1981	NA	NA	NA	NA	NA	NA	NA	1,244	NA	NA
M13-5337	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	15.7
M22-5341	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.3
M23-5342	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.5
M31-5345	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	28.0
M32-5346	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	16.6
M34-5348	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	51.5
M35-5349	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	36.6
M41-5350	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	23.1
M42-5351	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	63.4
O15-5319	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	55
O21-5320	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	28.8
O22-5321	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	21.6

Table A-2: A24 Historical PCB Sampling Data

Sample ID	Sample Date	Matrix	Analysis Method	PCBs (mg/L)	PCBs (mg/kg)	Aroclor 1016 (µg/kg)	Aroclor 1221 (µg/kg)	Aroclor 1232 (µg/kg)	Aroclor 1242 (µg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
O24-5323	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	15.3
O31-5325	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	45.6
O32-5326	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	136.7
O33-5327	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	47.8
O35-5329	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	106.6
P31-5381	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	10.8
P33-5380	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.4
P34-5382	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	7
R11-5295	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	168.6
R14-5298	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	145
R43-5312	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	14.2
T14-5358	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	33.8
T13-5357	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	1,371.5
T23-5362	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	90.2
T32-5366	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	242
T33-5367	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	152.3
T43-5372	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	2454
X1-SP 5286	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	36.6
X2-5287	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.4
X3-5288	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	14.1
X4-5289	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	12.98
X5-SP 5290	NA	NA	NA	NA	2.0	NA	NA	NA	NA	NA	NA
Y1-5282	10/20/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	18.2
Y2-SP 5283	10/20/1981	NA	NA	NA	40	NA	NA	NA	NA	NA	NA
Y3-SP 5284	10/20/1981	NA	NA	NA	25.1	NA	NA	NA	NA	NA	NA
Y4-SP 5285	NA	NA	NA	NA	12.9	NA	NA	NA	NA	NA	NA
Rd2-5292	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	108.6
Rd3-5293	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	15.1
Rd4-5294	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.2
R12-5296	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	46.8
R13-SP 5297	NA	NA	NA	NA	53.6	NA	NA	NA	NA	NA	NA
R15-5299	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	33.33
R21-5300	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	25.1
R22-5301	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	38.6
R23-SP 5302	NA	NA	NA	NA	20.7	NA	NA	NA	NA	NA	NA
R24-5303	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.5
R25-5304	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.7
R31-5305	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	33
R32-5306	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	16.6
R33-SP 5307	NA	NA	NA	NA	24.3	NA	NA	NA	NA	NA	NA
R34-5308	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	61.68
R35-5309	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	23.9
R41-5310	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	27.6
R42-5311	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.6
R44-SP 5313	NA	NA	NA	NA	33.4	NA	NA	NA	NA	NA	NA
R45-5314	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	19.5
O11-4315	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	72.8
O12-5316	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	54
O13-SP 5317	NA	NA	NA	NA	8.5	NA	NA	NA	NA	NA	NA
O14-5318	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	252.63
O23-SP 5322	NA	NA	NA	NA	16.2	NA	NA	NA	NA	NA	NA
O25-5324	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	34.6
OP34-SP 5328	NA	NA	NA	NA	62.9	NA	NA	NA	NA	NA	NA
O41-5330	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.9
O42-5331	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	63.8
O43-SP 5332	NA	NA	NA	NA	32.3	NA	NA	NA	NA	NA	NA
O44-5333	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	16.6
O45-5334	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	25.3
M14-5338	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	45
M15-5339	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	10.5
M21-5340	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.8
M24-5343	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	13
M25-5344	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.6
M33-SP 5347	NA	NA	NA	NA	39.8	NA	NA	NA	NA	NA	NA
M43-SP 5352	NA	NA	NA	NA	21.6	NA	NA	NA	NA	NA	NA
M45-5354	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	13.4
T11-5355	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	47.2
T12-5356	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	121.8
T15-5359	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	166.19
T21-5360	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	149.4
T22-5361	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	42.3
T24-5363	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	233
T25-5364	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	90
T31-5365	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	33
T34-5368	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	148.5
T35-5369	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	3,370.6
T41-5370	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	122.4
T42-5371	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	137.3
T44-5373	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	45.8
T45-5374	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	50.7
R11-SP 5375	NA	NA	NA	NA	69	NA	NA	NA	NA	NA	NA
P14-5376	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	37.9
P22-SP 5377	NA	NA	NA	NA	18.9	NA	NA	NA	NA	NA	NA
P25-5378	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	23.5
P13-5379	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	266.66
P42-5383	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	19.99
P45-5384	10/28/1981	NA	NA	NA	NA	NA	NA	NA	NA	NA	23.7
PDO-02	11/1/1982	Soil	EPA 600	NA	NA	NA	NA	NA	<1	<1	<1
PDO-03	11/1/1982	Soil	EPA 601	NA	NA	NA	NA	NA	<1	<1	<1
PDO-04	11/1/1982	Soil	EPA 602	NA	NA	NA	NA	NA	<1	<1	1
PDO-05	11/1/1982	Soil	EPA 603	NA	NA	NA	NA	NA	<1	<1	1
PDO-06	11/1/1982	Soil	EPA 604	NA	NA	NA	NA	NA	<1	<1	2
PDO-07	11/1/1982	Soil	EPA 605	NA	NA	NA	NA	NA	<1	<1	7
PDO-08	11/1/1982	Soil	EPA 606	NA	NA	NA	NA	NA	23*	<1	<1
PDO-09	11/1/1982	Soil	EPA 607	NA	NA	NA	NA	NA	<1	<1	1
PDO-10	11/1/1982	Soil	EPA 608	NA	NA	NA	NA	NA	<1	<1	<1
PDO-11	11/1/1982	Soil	EPA 609	NA	NA	NA	NA	NA	<1	<1	11
PDO-12	11/1/1982	Soil	EPA 610	NA	NA	NA	NA	NA	<1	<1	17
PDO-13	11/1/1982	Soil	EPA 611	NA	NA	NA	NA	NA	<1	<1	<1
DPDO-14	11/3/1982	Soil	EPA 612	NA	NA	NA	NA	NA	<1	<1	140
PDO-15	11/3/1982	Soil	EPA 613	NA	NA	NA	NA	NA	<1	<1	52
PDO-16	11/3/1982	Soil	EPA 614	NA	NA	NA	NA	NA	<1	<1	53

Table A-2: A24 Historical PCB Sampling Data

Sample ID	Sample Date	Matrix	Analysis Method	PCBs (mg/L)	PCBs (mg/kg)	Aroclor 1016 (µg/kg)	Aroclor 1221 (µg/kg)	Aroclor 1232 (µg/kg)	Aroclor 1242 (µg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
PDO-17	11/3/1982	Soil	EPA 615	NA	NA	NA	NA	NA	<1	<1	70
PDO-18	11/3/1982	Soil	EPA 616	NA	NA	NA	NA	NA	<1	<1	39
PDO-19	11/3/1982	Soil	EPA 617	NA	NA	NA	NA	NA	<1	<1	48
PDO-20	11/3/1982	Soil	EPA 618	NA	NA	NA	NA	NA	<1	<1	34
PDO-21	11/3/1982	Soil	EPA 619	NA	NA	NA	NA	NA	<1	<1	34
PDO-22	11/3/1982	Soil	EPA 620	NA	NA	NA	NA	NA	<1	<1	99
PDO-23	11/3/1982	Soil	EPA 621	NA	NA	NA	NA	NA	<1	<1	82
PDO-24	11/3/1982	Soil	EPA 622	NA	NA	NA	NA	NA	<1	<1	30
PDO-25	11/3/1982	Soil	EPA 623	NA	NA	NA	NA	NA	<1	<1	67
PDO-26	11/3/1982	Soil	EPA 624	NA	NA	NA	NA	NA	<1	<1	96
PDO-27	11/3/1982	Soil	EPA 625	NA	NA	NA	NA	NA	<1	<1	85
PDO-28	11/9/1982	Soil	EPA 626	NA	NA	NA	NA	NA	<1	<1	12
PDO-29	11/9/1982	Soil	EPA 627	NA	NA	NA	NA	NA	<1	<1	360
PDO-30	11/9/1982	Soil	EPA 628	NA	NA	NA	NA	NA	<1	<1	290
PDO-31	11/9/1982	Soil	EPA 629	NA	NA	NA	NA	NA	<1	<1	140
PDO-32	11/9/1982	Soil	EPA 630	NA	NA	NA	NA	NA	<1	<1	160
PDO-33	11/9/1982	Soil	EPA 631	NA	NA	NA	NA	NA	<1	<1	800
PDO-34	11/9/1982	Soil	EPA 632	NA	NA	NA	NA	NA	<1	<1	62
PDO-35	11/9/1982	Soil	EPA 633	NA	NA	NA	NA	NA	<1	<1	68
PDO-36	11/9/1982	Soil	EPA 634	NA	NA	NA	NA	NA	<1	190*	74
PDO-37	11/9/1982	Soil	EPA 635	NA	NA	NA	NA	NA	<1	<1	200
PDO-38	11/9/1982	Soil	EPA 636	NA	NA	NA	NA	NA	<1	<1	53
PDO-39	11/4/1982	Soil	EPA 637	NA	NA	NA	NA	NA	<1	<1	16
PDO-40	11/4/1982	Soil	EPA 638	NA	NA	NA	NA	NA	<1	<1	97
PDO-41-3	11/4/1982	Soil	EPA 639	NA	NA	NA	NA	NA	<1	<1	8
PDO-42-6	11/4/1982	Soil	EPA 640	NA	NA	NA	NA	NA	<1	<1	18
PDO-43-6	11/4/1982	Soil	EPA 641	NA	NA	NA	NA	NA	<1	<1	11
PDO-F	11/4/1982	Soil	EPA 642	NA	NA	NA	NA	NA	<1	<1	59
PDO-G	11/4/1982	Soil	EPA 643	NA	NA	NA	NA	NA	<1	<1	44
PDO-H	11/4/1982	Soil	EPA 644	NA	NA	NA	NA	NA	<1	<1	7
PDO-50	11/19/1982	Soil	EPA 645	NA	NA	NA	NA	NA	<1	<1	75
PDO-51	11/19/1982	Soil	EPA 646	NA	NA	NA	NA	NA	<1	<1	31
PDO-52	11/19/1982	Soil	EPA 647	NA	NA	NA	NA	NA	<1	<1	67
PDO-53	11/19/1982	Soil	EPA 648	NA	NA	NA	NA	NA	<1	<1	120
PDO-54	11/19/1982	Soil	EPA 649	NA	NA	NA	NA	NA	<1	<1	51
PDO-55	11/19/1982	Soil	EPA 650	NA	NA	NA	NA	NA	<1	<1	140
PDO-56	11/19/1982	Soil	EPA 651	NA	NA	NA	NA	NA	<1	<1	120
PDO-57	11/19/1982	Soil	EPA 652	NA	NA	NA	NA	NA	<1	<1	3,000
PDO-58	11/19/1982	Soil	EPA 653	NA	NA	NA	NA	NA	<1	<1	29
PDO-59	11/19/1982	Soil	EPA 654	NA	NA	NA	NA	NA	<1	<1	730
PDO-60	11/19/1982	Soil	EPA 655	NA	NA	NA	NA	NA	<1	<1	220
PDO-61	11/19/1982	Soil	EPA 656	NA	NA	NA	NA	NA	<1	<1	320
PDO-62	11/19/1982	Soil	EPA 657	NA	NA	NA	NA	NA	<1	<1	95
PDO-63	11/19/1982	Soil	EPA 658	NA	NA	NA	NA	NA	15	<1	24
PDO-64	11/19/1982	Soil	EPA 659	NA	NA	NA	NA	NA	<1	<1	100
PDO-65	11/19/1982	Soil	EPA 660	NA	NA	NA	NA	NA	<1	<1	15
PDO-66	11/19/1982	Soil	EPA 661	NA	NA	NA	NA	NA	<1	<1	240
PDO-67	11/19/1982	Soil	EPA 662	NA	NA	NA	NA	NA	<1	<1	68
PDO-68	11/19/1982	Soil	EPA 663	NA	NA	NA	NA	NA	<1	<1	11
PDO-69	11/19/1982	Soil	EPA 664	NA	NA	NA	NA	NA	<1	<1	38
PDO-70	11/19/1982	Soil	EPA 665	NA	NA	NA	NA	NA	<1	<1	2
PDO-71	11/19/1982	Soil	EPA 666	NA	NA	NA	NA	NA	<1	<1	5
PDO-72	12/10/1982	Soil	EPA 667	NA	NA	NA	NA	NA	<1	<1	5
PDO-73	12/10/1982	Soil	EPA 668	NA	NA	NA	NA	NA	<1	<1	18
PDO-74	12/10/1982	Soil	EPA 669	NA	NA	NA	NA	NA	<1	<1	9
PDO-75	12/10/1982	Soil	EPA 670	NA	NA	NA	NA	NA	<1	<1	98
PDO-76	12/10/1982	Soil	EPA 671	NA	NA	NA	NA	NA	<1	<1	190
PDO-77	12/10/1982	Soil	EPA 672	NA	NA	NA	NA	NA	<1	<1	63
PDO-78	12/10/1982	Soil	EPA 673	NA	NA	NA	NA	NA	<1	<1	95
PDO-79	12/10/1982	Soil	EPA 674	NA	NA	NA	NA	NA	<1	<1	120
PDO-80	12/10/1982	Soil	EPA 675	NA	NA	NA	NA	NA	<1	<1	23
PDO-81	12/10/1982	Soil	EPA 676	NA	NA	NA	NA	NA	<1	<1	95
PDO-82	12/10/1982	Soil	EPA 677	NA	NA	NA	NA	NA	<1	<1	97
PDO-83	12/10/1982	Soil	EPA 678	NA	NA	NA	NA	NA	<1	<1	54
PDO-84	12/10/1982	Soil	EPA 679	NA	NA	NA	NA	NA	<1	<1	4
PDO-85	12/10/1982	Soil	EPA 680	NA	NA	NA	NA	NA	<1	<1	21
PDO-86	12/10/1982	Soil	EPA 681	NA	NA	NA	NA	NA	<1	<1	<1
PDO-87	12/10/1982	Soil	EPA 682	NA	NA	NA	NA	NA	<1	<1	9
PDO-88	12/10/1982	Soil	EPA 683	NA	NA	NA	NA	NA	<1	<1	7
PDO-89	12/10/1982	Soil	EPA 684	NA	NA	NA	NA	NA	<1	<1	30
PDO-90	12/29/1982	Soil	EPA 685	NA	NA	NA	NA	NA	<1	<1	1
PDO-91	12/29/1982	Soil	EPA 686	NA	NA	NA	NA	NA	<1	<1	4
PDO-92	12/29/1982	Soil	EPA 687	NA	NA	NA	NA	NA	<1	<1	120
PDO-93	12/29/1982	Soil	EPA 688	NA	NA	NA	NA	NA	<1	<1	130
PDO-94	12/29/1982	Soil	EPA 689	NA	NA	NA	NA	NA	<1	<1	110
PDO-95	12/29/1982	Soil	EPA 690	NA	NA	NA	NA	NA	<1	<1	520
PDO-96	12/29/1982	Soil	EPA 691	NA	NA	NA	NA	NA	<1	<1	470
PDO-97	12/29/1982	Soil	EPA 692	NA	NA	NA	NA	NA	<1	<1	65
PDO-98	12/29/1982	Soil	EPA 693	NA	NA	NA	NA	NA	<1	<1	140
PDO-99	12/29/1982	Soil	EPA 694	NA	NA	NA	NA	NA	<1	<1	18
PDO-100	12/29/1982	Soil	EPA 695	NA	NA	NA	NA	NA	<1	<1	71
PDO-101	12/29/1982	Soil	EPA 696	NA	NA	NA	NA	NA	<1	<1	83
PDO-102	12/29/1982	Soil	EPA 697	NA	NA	NA	NA	NA	<1	<1	150
PDO-103	12/29/1982	Soil	EPA 698	NA	NA	NA	NA	NA	<1	<1	36
PDO-104	12/29/1982	Soil	EPA 699	NA	NA	NA	NA	NA	<1	<1	120
PDO-105	12/29/1982	Soil	EPA 700	NA	NA	NA	NA	NA	<1	<1	180
PDO-106	12/29/1982	Soil	EPA 701	NA	NA	NA	NA	NA	<1	<1	95
PDO-107	12/29/1982	Soil	EPA 702	NA	NA	NA	NA	NA	<1	<1	9
PDO-108	12/29/1982	Soil	EPA 703	NA	NA	NA	NA	NA	<1	<1	6
PDO-109	1/19/1983	Soil	EPA 704	NA	NA	NA	NA	NA	<1	<1	1
PDO-110	1/19/1983	Soil	EPA 705	NA	NA	NA	NA	NA	<1	<1	23
PDO-111	1/19/1983	Soil	EPA 706	NA	NA	NA	NA	NA	<1	<1	240
PDO-111 3-6"	2/1/1983	Soil	EPA 707	NA	NA	NA	NA	NA	NA	NA	32.1
PDO-111 6-9"	2/1/1983	Soil	EPA 708	NA	NA	NA	NA	NA	NA	NA	24.2
PDO-111 C	3/13/1983	Soil	EPA 709	NA	NA	NA	NA	NA	<1	<1	10
PDO-111 D	3/13/1983	Soil	EPA 710	NA	NA	NA	NA	NA	<1	<1	1
PDO-111 E	3/13/1983	Soil	EPA 711	NA	NA	NA	NA	NA	<1	<1	1
PDO-111 F	3/13/1983	Soil	EPA 712	NA	NA	NA	NA	NA	<1	<1	2
PDO-112	1/19/1983	Soil	EPA 713	NA	NA	NA	NA	NA	<1	<1	85
PDO-112 3-6"	2/1/1983	Soil	EPA 714	NA	NA	NA	NA	NA	NA	NA	300.6
PDO-112 6-9"	2/1/1983	Soil	EPA 715	NA	NA	NA	NA	NA	NA	NA	59.1
DPO-112 C	3/13/1983	Soil	EPA 716	NA	NA	NA	NA	NA	<1	<1	6

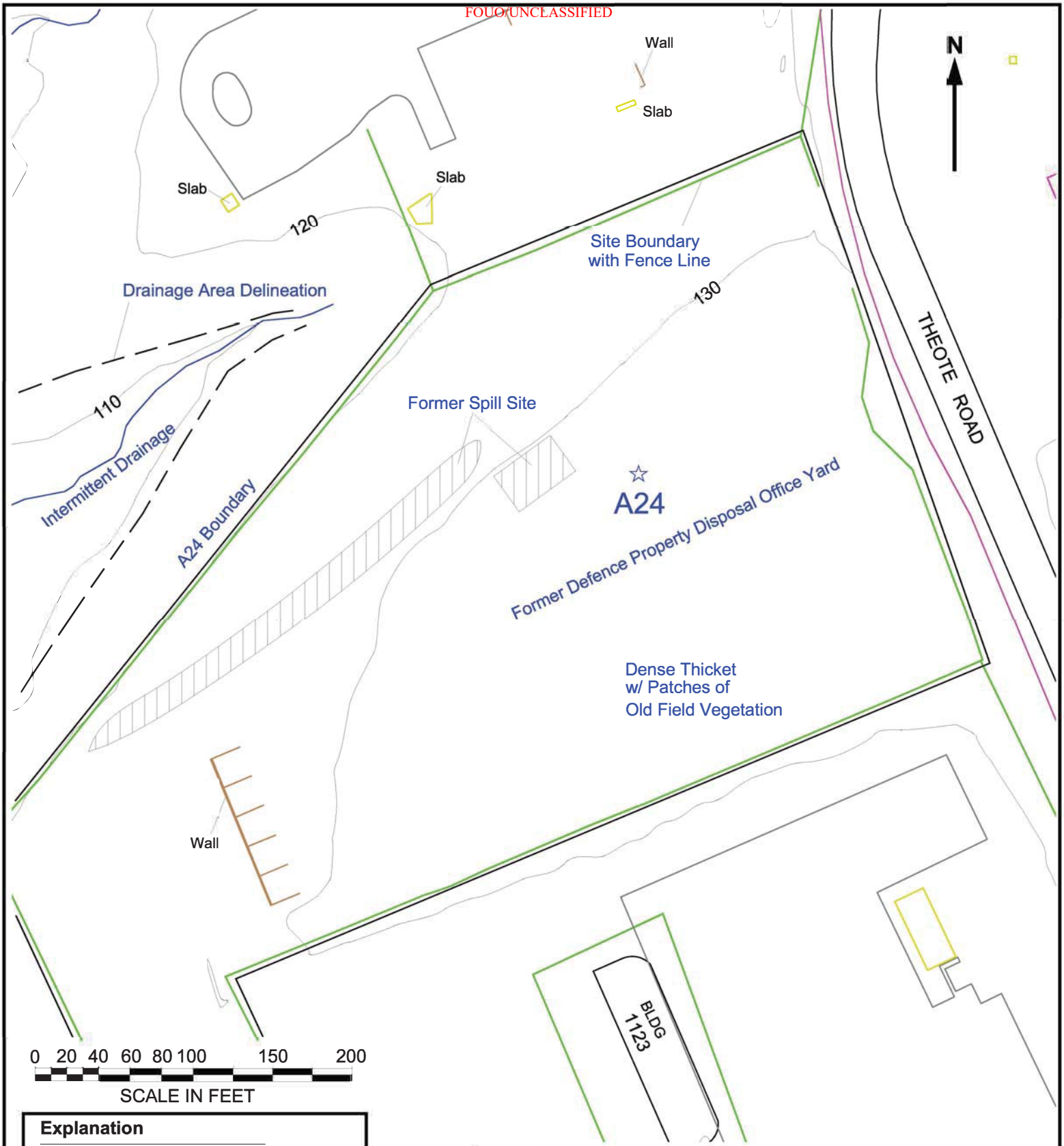
Table A-2: A24 Historical PCB Sampling Data

Sample ID	Sample Date	Matrix	Analysis Method	PCBs (mg/L)	PCBs (mg/kg)	Aroclor 1016 (µg/kg)	Aroclor 1221 (µg/kg)	Aroclor 1232 (µg/kg)	Aroclor 1242 (µg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
DPO-112 D	3/13/1983	Soil	EPA 717	NA	NA	NA	NA	NA	<1	<1	6
DPO-112 E	3/13/1983	Soil	EPA 718	NA	NA	NA	NA	NA	<1	<1	2
DPO-112 F	3/13/1983	Soil	EPA 719	NA	NA	NA	NA	NA	<1	<1	11
PDO-113	1/19/1983	Soil	EPA 720	NA	NA	NA	NA	NA	<1	<1	68
PDO-113 3-6"	2/1/1983	Soil	EPA 721	NA	NA	NA	NA	NA	NA	NA	134.9
PDO-113 6-9"	2/1/1983	Soil	EPA 722	NA	NA	NA	NA	NA	NA	NA	129.9
PDO-113 C	3/13/1983	Soil	EPA 723	NA	NA	NA	NA	NA	<1	<1	220
PDO-113 D	3/22/1983	Soil	EPA 724	NA	NA	NA	NA	NA	<1	<1	<1
PDO-113 E	3/22/1983	Soil	EPA 725	NA	NA	NA	NA	NA	<1	<1	<1
PDO-113 F	3/22/1983	Soil	EPA 726	NA	NA	NA	NA	NA	<1	<1	<1
PDO-114	1/19/1983	Soil	EPA 727	NA	NA	NA	NA	NA	<1	<1	71
PDO-114 3-6"	2/1/1983	Soil	EPA 728	NA	NA	NA	NA	NA	NA	NA	916
PDO-114 6-9"	2/1/1983	Soil	EPA 729	NA	NA	NA	NA	NA	NA	NA	139.7
PDO-114 C	3/22/1983	Soil	EPA 730	NA	NA	NA	NA	NA	<1	<1	40
PDO-114 D	3/22/1983	Soil	EPA 731	NA	NA	NA	NA	NA	<1	<1	4
PDO-114 E	3/22/1983	Soil	EPA 732	NA	NA	NA	NA	NA	<1	<1	<1
PDO-114 F	3/22/1983	Soil	EPA 733	NA	NA	NA	NA	NA	<1	<1	1
PDO-115	1/19/1983	Soil	EPA 734	NA	NA	NA	NA	NA	<1	<1	74
PDO-115 3-6"	2/1/1983	Soil	EPA 735	NA	NA	NA	NA	NA	NA	NA	130.9
PDO-115 6-9"	2/1/1983	Soil	EPA 736	NA	NA	NA	NA	NA	NA	NA	31.2
PDO-115 C	3/13/1983	Soil	EPA 737	NA	NA	NA	NA	NA	<1	<1	<1
PDO-115 D	3/22/1983	Soil	EPA 738	NA	NA	NA	NA	NA	<1	<1	1
PDO-115 E	3/22/1983	Soil	EPA 739	NA	NA	NA	NA	NA	<1	<1	4
PDO-116	1/19/1983	Soil	EPA 740	NA	NA	NA	NA	NA	<1	<1	51
PDO-116 3-6"	2/1/1983	Soil	EPA 741	NA	NA	NA	NA	NA	NA	NA	156.9
PDO-116 6-9"	2/1/1983	Soil	EPA 742	NA	NA	NA	NA	NA	NA	NA	13.2
PDO-116 C	3/13/1983	Soil	EPA 743	NA	NA	NA	NA	NA	<1	<1	2
PDO-116 D	3/13/1983	Soil	EPA 744	NA	NA	NA	NA	NA	<1	<1	1
PDO-116 E	3/22/1983	Soil	EPA 745	NA	NA	NA	NA	NA	<1	<1	2
PDO-117	1/19/1983	Soil	EPA 746	NA	NA	NA	NA	NA	<1	<1	1
PDO-117 3-6"	2/1/1983	Soil	EPA 747	NA	NA	NA	NA	NA	NA	NA	0.6
PDO-117 6-9"	2/1/1983	Soil	EPA 748	NA	NA	NA	NA	NA	NA	NA	131.2
PDO-117 C	3/13/1983	Soil	EPA 749	NA	NA	NA	NA	NA	<1	<1	100
PDO-117 D	3/13/1983	Soil	EPA 750	NA	NA	NA	NA	NA	<1	<1	10
PDO-117 E	3/22/1983	Soil	EPA 751	NA	NA	NA	NA	NA	<1	<1	<1
PDO-118	1/19/1983	Soil	EPA 752	NA	NA	NA	NA	NA	<1	<1	63
PDO-118 3-6"	2/1/1983	Soil	EPA 753	NA	NA	NA	NA	NA	NA	NA	44.4
PDO-118 3-6"	2/1/1983	Soil	EPA 754	NA	NA	NA	NA	NA	NA	NA	50.3
PDO-118 C	3/13/1983	Soil	EPA 755	NA	NA	NA	NA	NA	<1	<1	110
PDO-118 D	3/13/1983	Soil	EPA 756	NA	NA	NA	NA	NA	<1	<1	20
PDO-118 E	3/22/1983	Soil	EPA 757	NA	NA	NA	NA	NA	<1	<1	15
PDO-119	1/19/1983	Soil	EPA 758	NA	NA	NA	NA	NA	<1	<1	56
PDO-119 3-6"	2/1/1983	Soil	EPA 759	NA	NA	NA	NA	NA	NA	NA	20.2
PDO-119 6-9"	2/1/1983	Soil	EPA 760	NA	NA	NA	NA	NA	NA	NA	180.5
PDO-119 C	3/13/1983	Soil	EPA 761	NA	NA	NA	NA	NA	<1	<1	89
PDO-119 D	3/22/1983	Soil	EPA 762	NA	NA	NA	NA	NA	<1	<1	63
PDO-119 E	3/22/1983	Soil	EPA 763	NA	NA	NA	NA	NA	<1	<1	5
PDO-120	1/19/1983	Soil	EPA 764	NA	NA	NA	NA	NA	<1	<1	120
PDO-120 3-6"	2/1/1983	Soil	EPA 765	NA	NA	NA	NA	NA	NA	NA	81.3
PDO-120 6-9"	2/1/1983	Soil	EPA 766	NA	NA	NA	NA	NA	NA	NA	56.9
PDO-120 C	3/13/1983	Soil	EPA 767	NA	NA	NA	NA	NA	<1	<1	9
PDO-120 D	3/22/1983	Soil	EPA 768	NA	NA	NA	NA	NA	<1	<1	8
PDO-120 E	3/22/1983	Soil	EPA 769	NA	NA	NA	NA	NA	<1	<1	<1
PDO-121	1/19/1983	Soil	EPA 770	NA	NA	NA	NA	NA	<1	<1	3
PDO-121 3-6"	2/1/1983	Soil	EPA 771	NA	NA	NA	NA	NA	NA	NA	423.7
PDO-121 6-9"	2/1/1983	Soil	EPA 772	NA	NA	NA	NA	NA	NA	NA	286.2
PDO-121 C	3/13/1983	Soil	EPA 773	NA	NA	NA	NA	NA	<1	<1	57
PDO-121 D	3/13/1983	Soil	EPA 774	NA	NA	NA	NA	NA	<1	<1	36
PDO-121 E	3/13/1983	Soil	EPA 775	NA	NA	NA	NA	NA	<1	<1	43
PDO-121 F	3/13/1983	Soil	EPA 776	NA	NA	NA	NA	NA	<1	<1	<1
PDO-122	1/19/1983	Soil	EPA 777	NA	NA	NA	NA	NA	<1	<1	55
PDO-122 3-6"	2/1/1983	Soil	EPA 778	NA	NA	NA	NA	NA	NA	NA	9.1
PDO-122 6-9"	2/1/1983	Soil	EPA 779	NA	NA	NA	NA	NA	NA	NA	7.2
PDO-122 C	3/13/1983	Soil	EPA 780	NA	NA	NA	NA	NA	<1	<1	2
PDO-122 D	3/13/1983	Soil	EPA 781	NA	NA	NA	NA	NA	<1	<1	2
PDO-122 E	3/13/1983	Soil	EPA 782	NA	NA	NA	NA	NA	<1	<1	1
PDO-123	1/19/1983	Soil	EPA 783	NA	NA	NA	NA	NA	<1	<1	6
PDO-111x	4/5/1983	Soil	EPA 784	NA	NA	NA	NA	NA	<1	<1	12
PDO-112x	4/5/1983	Soil	EPA 785	NA	NA	NA	NA	NA	<1	<1	4
PDO-113x	4/5/1983	Soil	EPA 786	NA	NA	NA	NA	NA	<1	<1	18
PDO-114x	4/5/1983	Soil	EPA 787	NA	NA	NA	NA	NA	<1	<1	210
PDO-115x	4/5/1983	Soil	EPA 788	NA	NA	NA	NA	NA	<1	<1	2
PDO-116x	4/5/1983	Soil	EPA 789	NA	NA	NA	NA	NA	<1	<1	20
PDO-117x	4/5/1983	Soil	EPA 790	NA	NA	NA	NA	NA	<1	<1	85
PDO-118x	4/5/1983	Soil	EPA 791	NA	NA	NA	NA	NA	<1	<1	35
PDO-119x	4/5/1983	Soil	EPA 792	NA	NA	NA	NA	NA	<1	<1	71
PDO-120x	4/5/1983	Soil	EPA 793	NA	NA	NA	NA	NA	<1	<1	210
PDO-121x	4/5/1983	Soil	EPA 794	NA	NA	NA	NA	NA	<1	<1	90
PDO-122x	4/5/1983	Soil	EPA 795	NA	NA	NA	NA	NA	<1	<1	25
PDO-111y	4/14/1983	Soil	EPA 796	NA	NA	NA	NA	NA	<1	<1	65
PDO-112y	4/14/1983	Soil	EPA 797	NA	NA	NA	NA	NA	<1	<1	13
PDO-113y	4/14/1983	Soil	EPA 798	NA	NA	NA	NA	NA	<1	<1	120
PDO-114y	4/14/1983	Soil	EPA 799	NA	NA	NA	NA	NA	<1	<1	200
PDO-115y	4/14/1983	Soil	EPA 800	NA	NA	NA	NA	NA	<1	<1	3
PDO-116y	4/14/1983	Soil	EPA 801	NA	NA	NA	NA	NA	<1	<1	<1
PDO-117y	4/14/1983	Soil	EPA 802	NA	NA	NA	NA	NA	<1	<1	120
PDO-118y	4/14/1983	Soil	EPA 803	NA	NA	NA	NA	NA	<1	<1	250
PDO-119y	4/14/1983	Soil	EPA 804	NA	NA	NA	NA	NA	<1	<1	2,300
PDO-120y	4/14/1983	Soil	EPA 805	NA	NA	NA	NA	NA	<1	<1	420
PDO-121y	4/14/1983	Soil	EPA 806	NA	NA	NA	NA	NA	<1	<1	120
PDO-122y	4/14/1983	Soil	EPA 807	NA	NA	NA	NA	NA	<1	<1	7
PDO-111z	4/28/1983	Soil	EPA 808	NA	NA	NA	NA	NA	<1	<1	<1
PDO-112z	4/28/1983	Soil	EPA 809	NA	NA	NA	NA	NA	<1	<1	2
PDO-113z	4/28/1983	Soil	EPA 810	NA	NA	NA	NA	NA	<1	<1	5
PDO-114z	4/28/1983	Soil	EPA 811	NA	NA	NA	NA	NA	<1	<1	12
PDO-115z	4/28/1983	Soil	EPA 812	NA	NA	NA	NA	NA	<1	<1	6
PDO-116z	4/28/1983	Soil	EPA 813	NA	NA	NA	NA	NA	<1	<1	2
PDO-117z	4/28/1983	Soil	EPA 814	NA	NA	NA	NA	NA	<1	<1	2
PDO-118z	4/28/1983	Soil	EPA 815	NA	NA	NA	NA	NA	<1	<1	120
PDO-119z	4/28/1983	Soil	EPA 816	NA	NA	NA	NA	NA	<1	<1	70
PDO-120z	4/28/1983	Soil	EPA 817	NA	NA	NA	NA	NA	<1	<1	88
PDO-121z	4/28/1983	Soil	EPA 818	NA	NA	NA	NA	NA	<1	<1	33

Table A-2: A24 Historical PCB Sampling Data

Sample ID	Sample Date	Matrix	Analysis Method	PCBs (mg/L)	PCBs (mg/kg)	Aroclor 1016 (µg/kg)	Aroclor 1221 (µg/kg)	Aroclor 1232 (µg/kg)	Aroclor 1242 (µg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
PDO-122z	4/28/1983	Soil	EPA 819	NA	NA	NA	NA	NA	<1	<1	6
PDO-111z	5/12/1983	Soil	EPA 820	NA	NA	NA	NA	NA	NA	NA	<1
PDO-112z	5/12/1983	Soil	EPA 821	NA	NA	NA	NA	NA	NA	NA	2
PDO-113z	5/12/1983	Soil	EPA 822	NA	NA	NA	NA	NA	NA	NA	3
PDO-114z	5/12/1983	Soil	EPA 823	NA	NA	NA	NA	NA	NA	NA	25
PDO-115z	5/12/1983	Soil	EPA 824	NA	NA	NA	NA	NA	NA	NA	11
PDO-116z	5/12/1983	Soil	EPA 825	NA	NA	NA	NA	NA	NA	NA	4
PDO-117z	5/12/1983	Soil	EPA 826	NA	NA	NA	NA	NA	NA	NA	3
PDO-118z	5/12/1983	Soil	EPA 827	NA	NA	NA	NA	NA	NA	NA	120
PDO-119z	5/12/1983	Soil	EPA 828	NA	NA	NA	NA	NA	NA	NA	85
PDO-120z	5/12/1983	Soil	EPA 829	NA	NA	NA	NA	NA	NA	NA	94
PDO-121z	5/12/1983	Soil	EPA 830	NA	NA	NA	NA	NA	NA	NA	25
PDO-122z	5/12/1983	Soil	EPA 831	NA	NA	NA	NA	NA	NA	NA	<1
118 xx	5/19/1983	Soil	EPA 832	NA	NA	NA	NA	NA	<1	<1	1
119 xx	5/19/1983	Soil	EPA 833	NA	NA	NA	NA	NA	<1	<1	120
120 xx	5/19/1983	Soil	EPA 834	NA	NA	NA	NA	NA	<1	<1	4
119 yy	6/7/1983	Soil	EPA 835	NA	NA	NA	NA	NA	<1	<1	5
PDO Stream No. 1	6/7/1983	Soil	EPA 836	NA	NA	NA	NA	NA	<1	<1	32
PDO Stream No. 2	6/7/1983	Soil	EPA 837	NA	NA	NA	NA	NA	<1	<1	<1
PDO Stream No. 3	6/7/1983	Soil	EPA 838	NA	NA	NA	NA	NA	<1	<1	<1
A24-SD-01	7/15/2015	Sediment	SW8082A	NA	NA	ND	ND	ND	ND	ND	0.482
A24-SD-02	7/15/2015	Sediment	SW8082A	NA	NA	ND	ND	ND	ND	ND	2.610
A24-SD-02-DUP	7/15/2015	Sediment	SW8082A	NA	NA	ND	ND	ND	ND	ND	2.58 J+
A24-SD-03	7/15/2015	Sediment	SW8082A	NA	NA	ND	ND	ND	ND	ND	2.860
A24-SD-04	7/15/2015	Sediment	SW8082A	NA	NA	ND	ND	ND	ND	ND	1.650

J: Estimated
+: Value Biased High
NA: Not Available.
ND: Not Detected.
*Results calculated per Webb, R.G. McCall, A.C., Journal of Chromatographic Science, 11, 366 (1973).
The source of the data: Final version of Visual Site Inspection (TetraTech, 2008). ; Site Summary Report Addendum for Sites CC-A04A23: Former Coal Storage Area/PCB Spill Site and CC-A24: Flormer DPDO Storage Area/PCB Spill Site (EA Engineering, Science, and Technology, Inc., 2016).

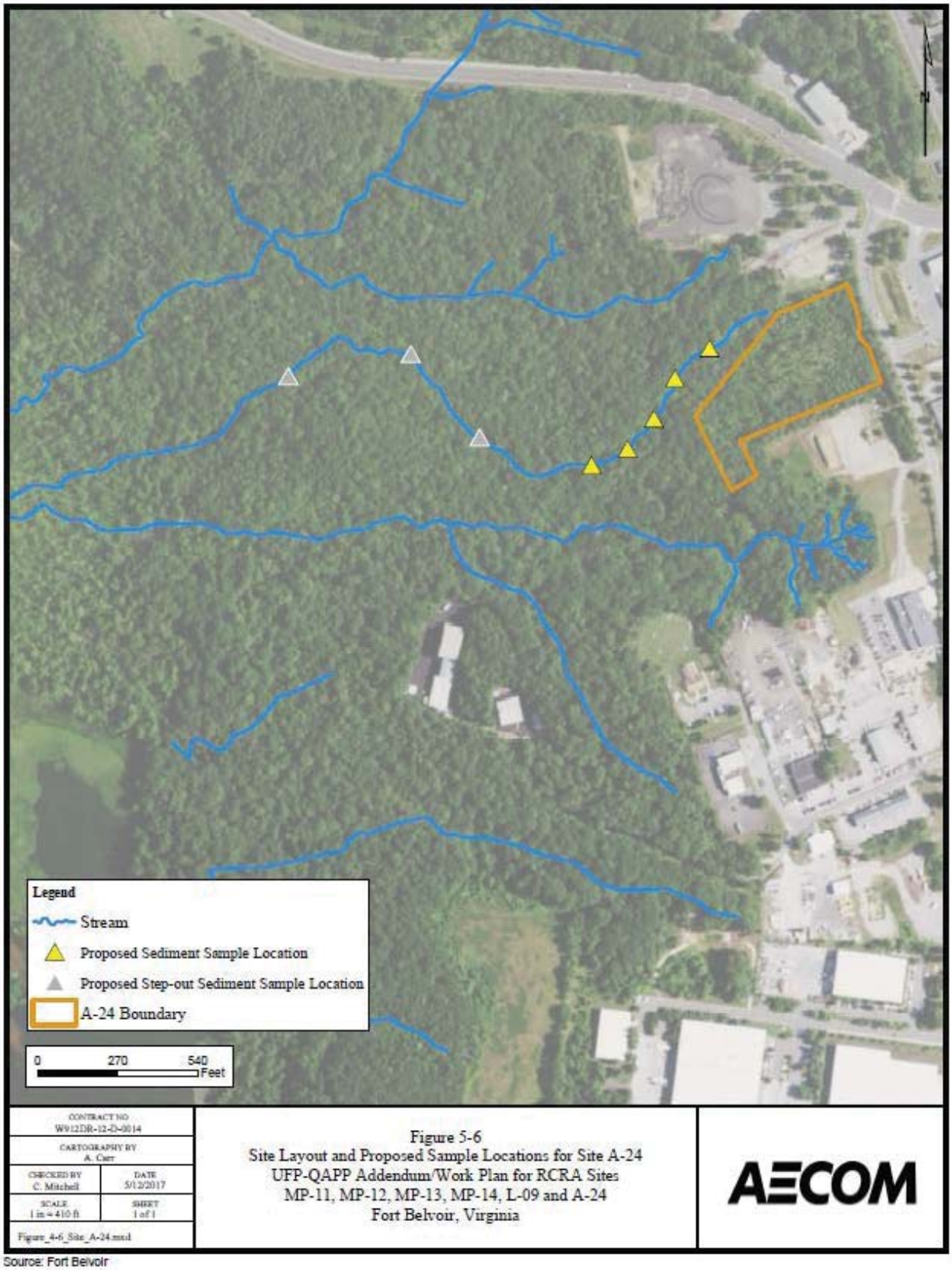


Explanation

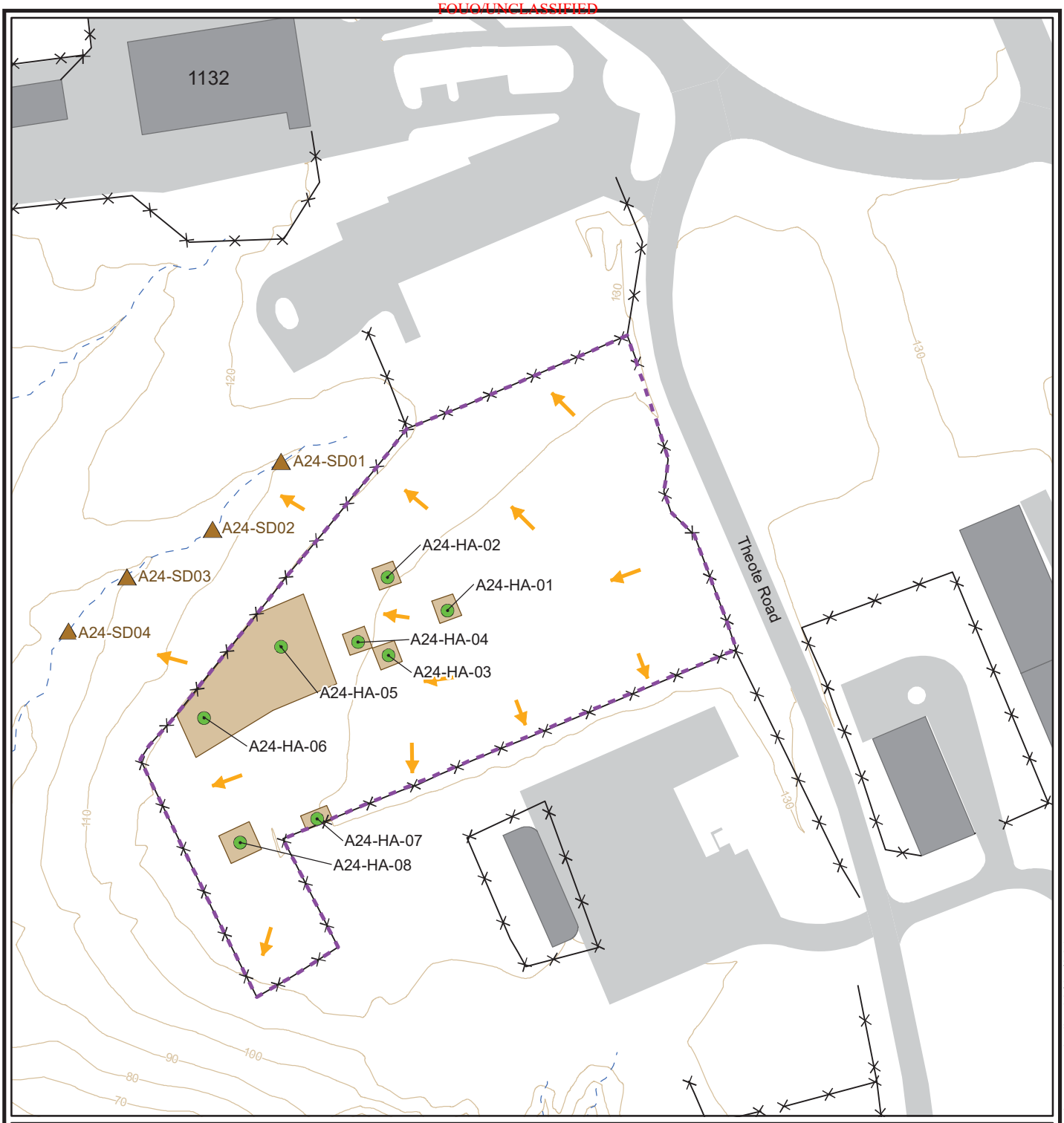
- Site Location
- Boundary of A24
- Drainage Area Delineation
- 120 Contour Elevation in ft
- 1123 Building and Number
- Road
- Sidewalk
- Fence
- Stream

DATE 1/18/2013	TIDEWATER INC	
DRAWN HS	Site Detailed Location Map A24 (Former DPDO Storage Area) Fort Belvoir, VA	
APPROVED WSY	DRAWING: Fig4_A24_Map.dwg	REV 1.0
	PROJECT: 4008-002 SCALE GRAPHIC	SHEET 1/1

Site Layout and Proposed Sample Locations for Site A-24



Source: Fort Belvoir



Legend

- Hand Auger Location
- Sediment Sample Location
- Previous Excavation/Soil Cover Area
- Approximate Site Boundary
- Inferred Surface Drainage Flow Direction
- Surface Contour (5 ft)
- Perennial Stream
- Intermittent Stream/Drainage
- Fence
- Road/Parking
- Building

N
W E
S

0 75 150
Feet

Data Sources: Fort Belvoir GIS 2010, Tetra Tech 2014b

Main Post
U.S. Army Garrison
Fort Belvoir, Virginia

Site CC-A24 Sample Locations

EA Engineering, Science, and Technology, Inc., PBC

C:\Users\ccampbell\Desktop\A24_Locations.mxd ccampbell 10/15/2015

2020

B03: Former Building 632 Hazardous Waste Storage Area

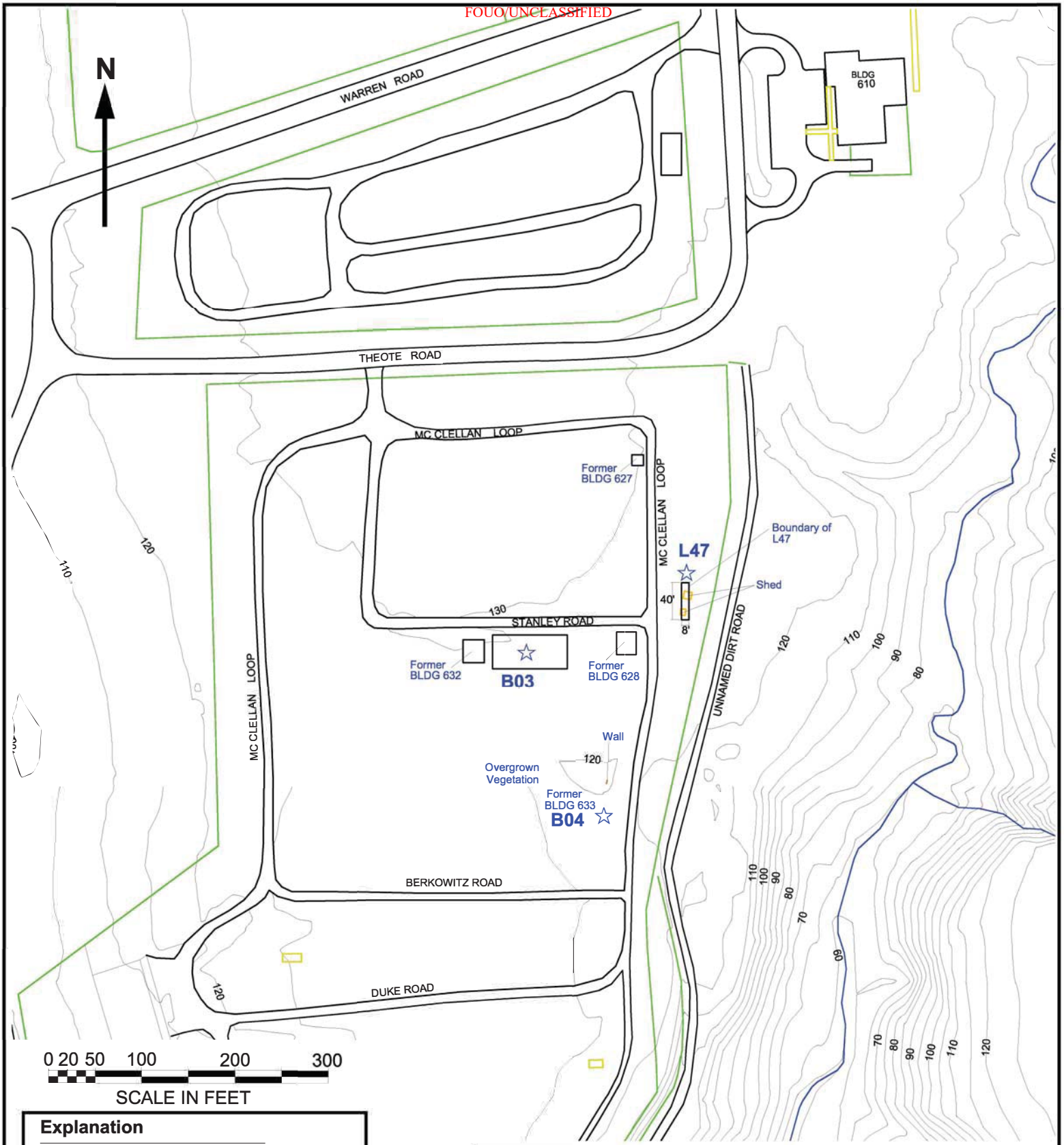
PCB TMDL ACTION PLAN – APPENDIX A-3

FORT BELVOIR

Table A-3: B03 Historical PCB Sampling Data

Sample ID	Sample Date	Matrix	Analysis Mehthod	Total PCBs (ρg/L)	Aroclor 1016 (mg/kg)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1248 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
600-BG-01	2/8/1994	NA	8080	NA	<21	<21	<21	<21	<21	<21	<21
600-BG-02	2/8/1994	NA	8080	NA	<21	<21	<21	<21	<21	<21	<21
600-BG-03	2/8/1994	NA	8080	NA	<21	<21	<21	<21	<21	<21	<21
600-BG-04	2/8/1994	NA	8080	NA	<21	<21	<21	<21	<21	<21	<21

NA: Not Available
The source of data: Building 632 Closure Report (Department of the Army, July 1996)



Explanation

- ☆ Site Location
- Boundaries of B03, B04, L47
- Drainage Area Delineation
- 90 Contour Elevation in ft
- 632 Building and Number
- Road
- Slab
- Fence
- Stream

DATE 1/17/2013	TIDEWATER INC
DRAWN HS	**Site Detailed Location Map for B03/B04/L47 Fort Belvoir, VA**
APPROVED WSY	
DRAWING: Fig5_B03_B04_L47_Map.dwg	REV 1.0
PROJECT: 4008-002 SCALE GRAPHIC	SHEET 1/1

2020

B04: Former Building 633 Hazardous Waste Storage Area

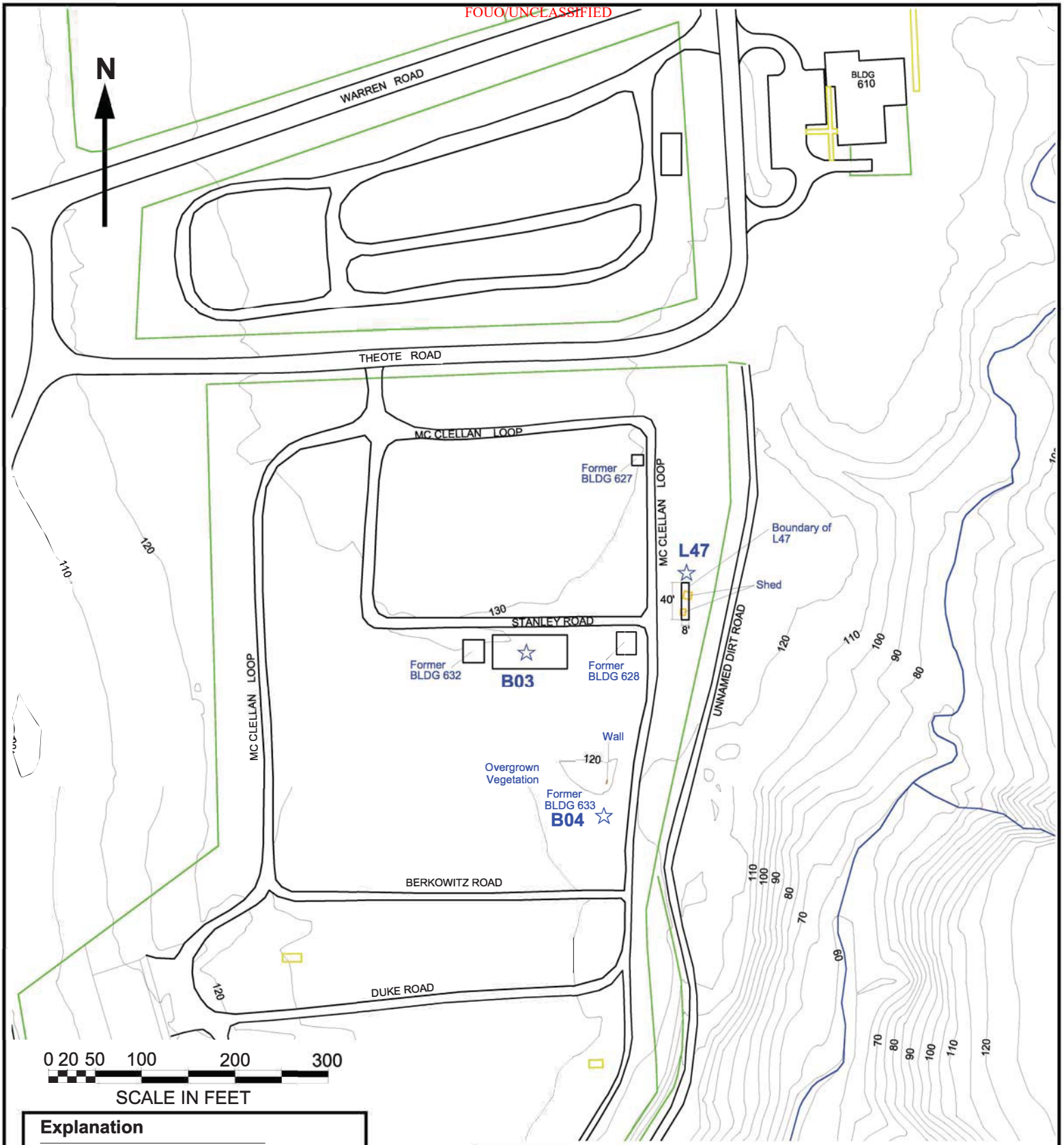
PCB TMDL ACTION PLAN – APPENDIX A-4

FORT BELVOIR

Table A-4: B04 Historical PCB Sampling Data

Sample ID	Sample Date	Matrix	Analysis Method	Total PCBs (pg/L)	Aroclor 1016 (µg/kg)	Aroclor 1221 (µg/kg)	Aroclor 1232 (µg/kg)	Aroclor 1242 (µg/kg)	Aroclor 1248 (µg/kg)	Aroclor 1254 (µg/kg)	Aroclor 1260 (µg/kg)
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

NA: Not Available



Explanation

- ☆ Site Location
- Boundaries of B03, B04, L47
- Drainage Area Delineation
- 90 Contour Elevation in ft
- 632 Building and Number
- Road
- Slab
- Fence
- Stream

DATE 1/17/2013	TIDEWATER INC
DRAWN HS	**Site Detailed Location Map for B03/B04/L47 Fort Belvoir, VA**
APPROVED WSY	
DRAWING: Fig5_B03_B04_L47_Map.dwg	REV 1.0
PROJECT: 4008-002 SCALE GRAPHIC	SHEET 1/1

2020

B09: Former Building 1430 Transformer Storage Area

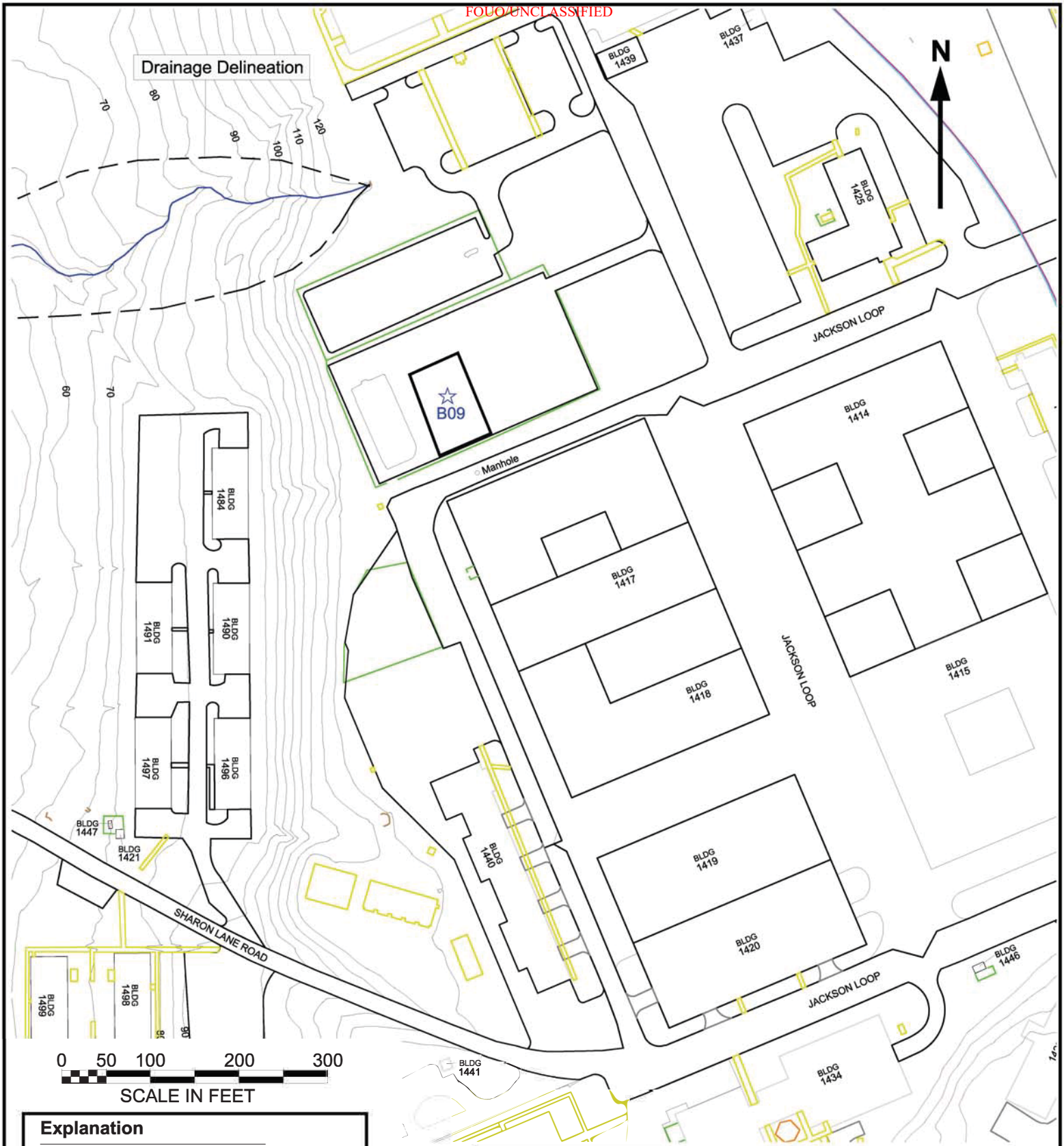
PCB TMDL ACTION PLAN – APPENDIX A-5

FORT BELVOIR

Table A-5: B09 Historical PCB Sampling Data

Sample ID	Sample Date	Analysis Method	Matrix	Total PCBs (pg/L)	Aroclor 1016 (mg/kg)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1248 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
B1430-CONC1	6/19/1997	EPA 8081	Soil	NA	<1	<1	<1	<1	<1	<1	<1
B1430-CONC2	6/19/1997	EPA 8081	Soil	NA	<1	<1	<1	<1	<1	<1	<1
B1430-CONC3	6/19/1997	EPA 8081	Soil	NA	<1	<1	<1	<1	<1	<1	<1
B1430-CONC4	6/19/1997	EPA 8081	Soil	NA	<1	<1	<1	<1	<1	<1	<1
B1430-CONC5	6/19/1997	EPA 8081	Soil	NA	<1	<1	<1	<1	<1	<1	<1
B1430-CONC6	6/19/1997	EPA 8081	Soil	NA	<1	<1	<1	<1	<1	<1	<1
B1430-SOIL1	6/19/1997	EPA 8081	Soil	NA	<1	<1	<1	<1	<1	<1	<1
B1430-SOIL2	6/19/1997	EPA 8081	Soil	NA	<1	<1	<1	<1	<1	<1	<1
B1430-SOIL3	6/19/1997	EPA 8081	Soil	NA	<1	<1	<1	<1	<1	<1	<1
B1430-SOIL4	6/19/1997	EPA 8081	Soil	NA	<1	<1	<1	<1	<1	<1	<1
B1430-SOIL5	6/19/1997	EPA 8081	Soil	NA	<1	<1	<1	<1	<1	<1	<1
B1430-SOIL6	6/19/1997	EPA 8081	Soil	NA	<1	<1	<1	<1	<1	<1	<1
B1430-SOIL7	6/19/1997	EPA 8081	Soil	NA	<1	<1	<1	<1	<1	<1	<1
B1430-SOIL8	6/19/1997	EPA 8081	Soil	NA	<1	<1	<1	<1	<1	<1	<1
B1430-SOIL9	6/19/1997	EPA 8081	Soil	NA	<1	<1	<1	<1	<1	<1	<1
B1430-SOIL10	6/19/1997	EPA 8081	Soil	NA	<1	<1	<1	<1	<1	<1	<1
B1430-SOIL11	6/19/1997	EPA 8081	Soil	NA	<1	<1	<1	<1	<1	<1	<1
B1430-SOIL12	6/18/1997	EPA 8081	Soil	NA	<1	<1	<1	<1	<1	<1	<1
PCB WIPES (µg/wipe)											
B1430W1	6/23/1997	EPA 600	Wipe	NA	<5	<5	<5	<5	<5	<5	<5
B1430W2	6/23/1997	EPA 600	Wipe	NA	<5	<5	<5	<5	<5	<5	<5
B1430W3	6/23/1997	EPA 600	Wipe	NA	<5	<5	<5	<5	<5	<5	<5
B1430W4	6/23/1997	EPA 600	Wipe	NA	<5	<5	<5	<5	<5	<5	<5
B1430W5	6/23/1997	EPA 600	Wipe	NA	<5	<5	<5	<5	<5	<5	<5
B1430W6	6/23/1997	EPA 600	Wipe	NA	<5	<5	<5	<5	<5	<5	<5

The source of the data: Final version of Visual Site Inspection (TetraTech, 2008).



Explanation

- ☆ Site Location
- Drainage Area Delineation
- ○ Manhole
- 50 Contour Elevation in ft
- 1492 Building Number
- Road
- Sidewalk
- Fence
- Stream

DATE 1/18/2013	TIDEWATER INC	
DRAWN HS	**Site Detailed Location Map B09 (Former Bldg. 1430) Fort Belvoir, VA**	
APPROVED WSY	DRAWING: Fig6_B09_Map.dwg	REV 1.0
	PROJECT: 4008-002 SCALE GRAPHIC	SHEET 1/1

2020

B10: Building 190 Former Indoor Storage Room

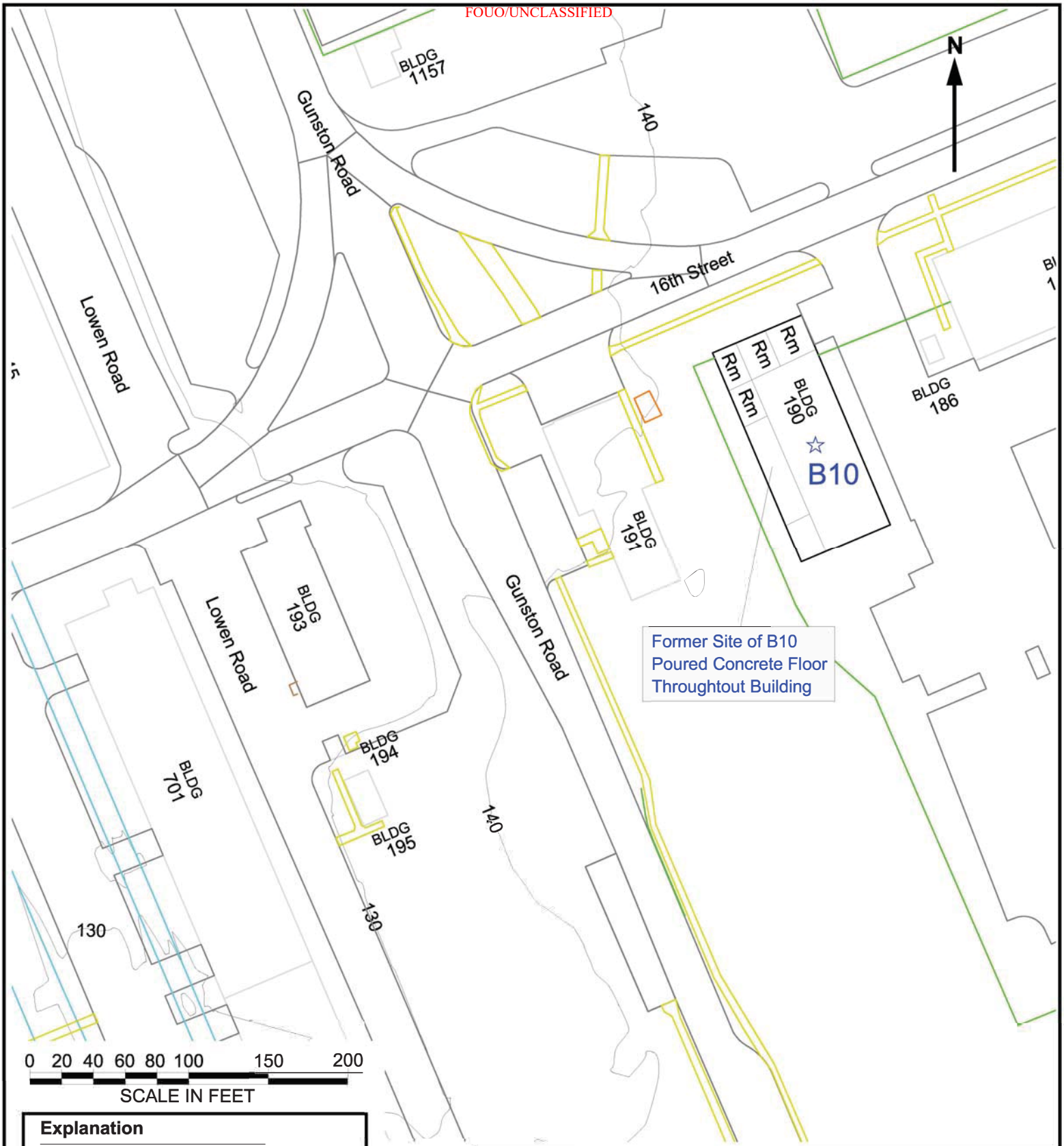
PCB TMDL ACTION PLAN – APPENDIX A-6

FORT BELVOIR

Table A-6. B10 Historical PCB Sampling Data

Sample ID	Sample Date	Matrix	Analysis Method	Total PCBs (pg/L)	Aroclor 1016 (µg/kg)	Aroclor 1221 (µg/kg)	Aroclor 1232 (µg/kg)	Aroclor 1242 (µg/kg)	Aroclor 1248 (µg/kg)	Aroclor 1254 (µg/kg)	Aroclor 1260 (µg/kg)
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

NA: Not available.



Explanation

- Site Location
- Drainage Area Delineation
- Pavilion
- 130 Contour Elevation in ft
- 701 Building and Number
- Road
- Sidewalk
- Fence
- Railroad

DATE 1/18/2013	TIDEWATER INC
DRAWN HS	**Site Detailed Location Map B10 (Former Bldg. 190) Fort Belvoir, VA**
APPROVED WSY	DRAWING: Fig7_B10_Map.dwg REV 1.0
PROJECT: 4008-002	SCALE GRAPHIC SHEET 1/1

2020

L03: Former Asphalt Storage Pad; Building 2596

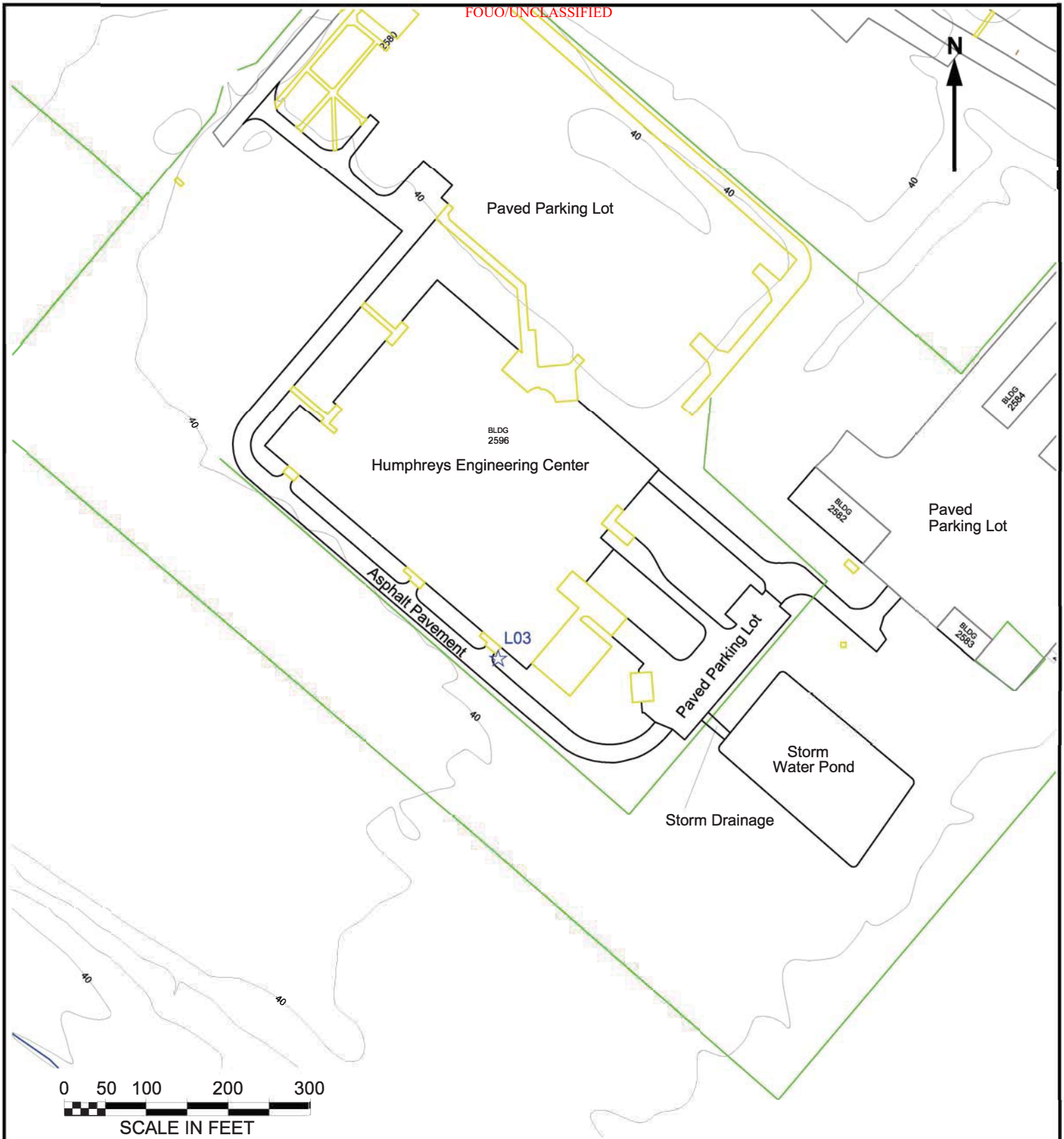
PCB TMDL ACTION PLAN – APPENDIX A-7

FORT BELVOIR

Table A-7. L03 Historical PCB Sampling Data

Sample ID	Sample Date	Matrix	Analysis Mehthod	PCBs (mg/kg)	Aroclor 1016 (µg/kg)	Aroclor 1221 (µg/kg)	Aroclor 1232 (µg/kg)	Aroclor 1242 (µg/kg)	Aroclor 1248 (µg/kg)	Aroclor 1254 (µg/kg)	Aroclor 1260 (µg/kg)
L03-SB01-2.5-4.5	1/15/2013	Soil	ND	NA	ND	ND	ND	ND	ND	ND	ND
L03-SB02-2.5-4.5	1/15/2013	Soil	ND	NA	ND	ND	ND	ND	ND	ND	ND
L03-SB03-2.5-4.5	1/15/2013	Soil	ND	NA	ND	ND	ND	ND	ND	ND	ND
L03-SB-DUP	1/15/2013	Soil	ND	NA	ND	ND	ND	ND	ND	ND	ND

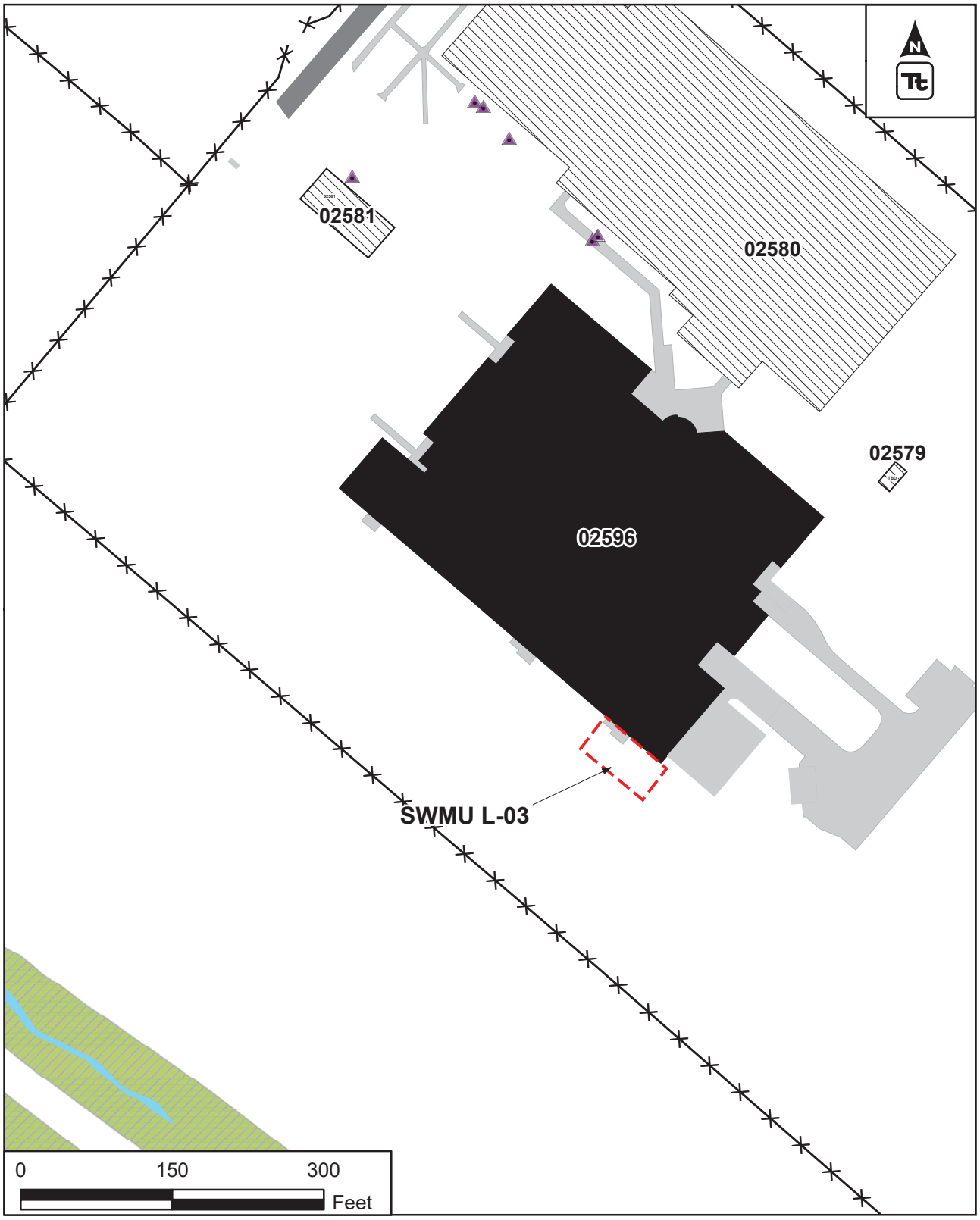
NA: Not Available.
The source of this data: Final RCRA Facility Investigation Report Solid Waste Management Unit (SWMU) L-03 (Tetra Tech, 2013).



Explanation

- ☆ Site Location
- Drainage Area Delineation
- 40 Contour Elevation in ft
- 2596 Building and Number
- Road
- Sidewalk
- Fence

DATE 1/18/2013	TIDEWATER INC
DRAWN HS	**Site Detailed Location Map L03 (Paved Asphalt Parking Lot at Bldg. 2596) Fort Belvoir, VA**
APPROVED WSY	DRAWING: Fig8_L03_Map.dwg REV 1.0
PROJECT: 4008-002	SCALE GRAPHIC SHEET 1/1



LEGEND

- Humphreys Engineer Center
- Approximate SWMU L-03 Boundary
- Demolished Buildings
- Fence
- Existing Buildings
- UST/AST
- Water Feature
- Riparian Area Buffer

Solid Waste Management Unit (SWMU) L-03 Site Configuration

Sources: Fort Belvoir GIS, 2006; Tetra Tech GIS, 2008.

2020

L04: Former Outdoor Concrete Pad Transformer Storage Area

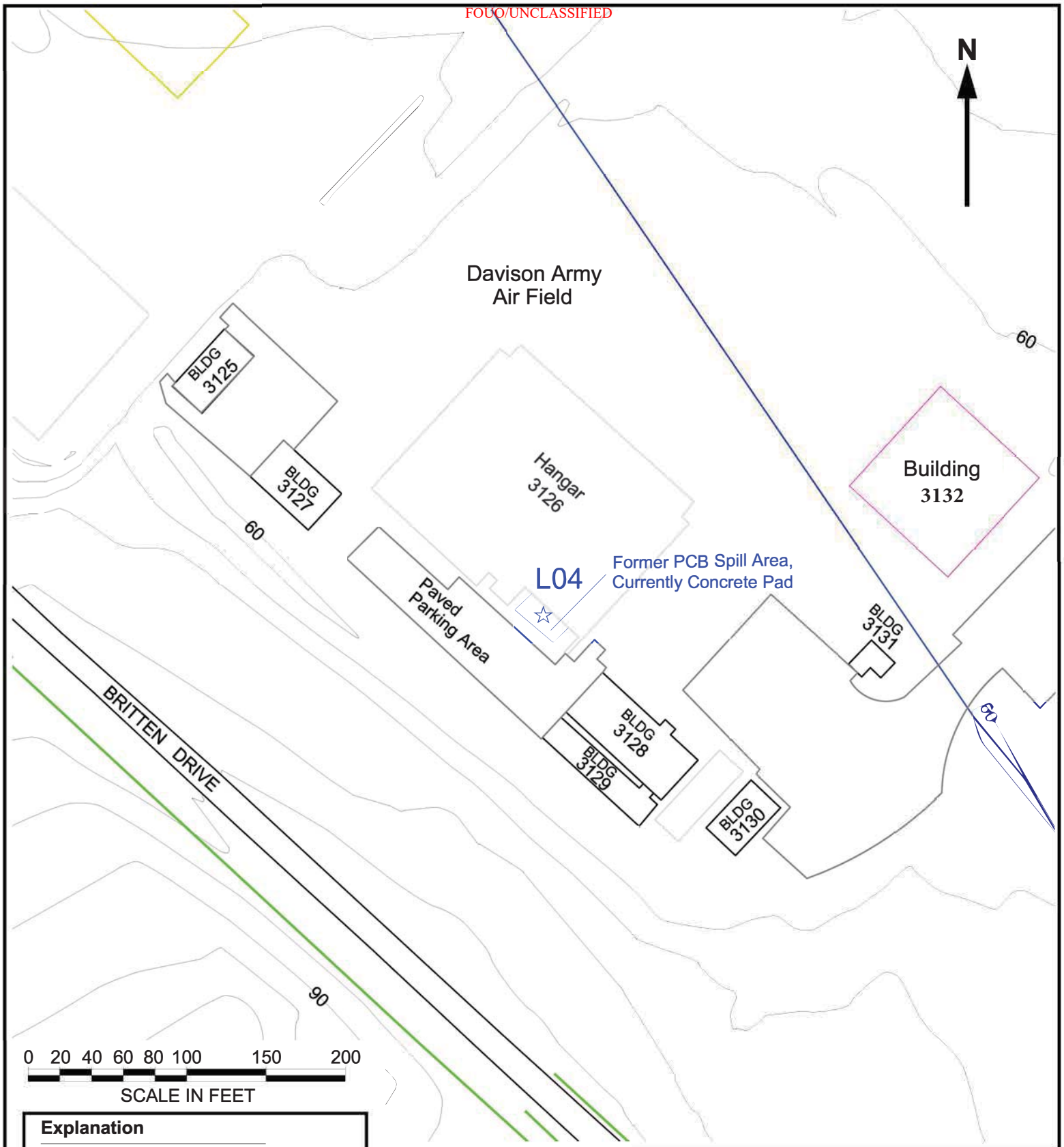
PCB TMDL ACTION PLAN – APPENDIX A-8

FORT BELVOIR

Table A-8: L04 Historical PCB Sampling Data

Sample ID	Sample Date	Matrix	Analysis Method	PCBs (mg/kg)	Aroclor 1016 (µg/kg)	Aroclor 1221 (µg/kg)	Aroclor 1232 (µg/kg)	Aroclor 1242 (µg/kg)	Aroclor 1248 (µg/kg)	Aroclor 1254 (µg/kg)	Aroclor 1260 (µg/kg)
SN: 2448702	1/31/1997	Soil	EPA 8081	6	NA	NA	NA	NA	NA	NA	NA
SN: 1728509	1/31/1997	Soil	EPA 8081	<5	NA	NA	NA	NA	NA	NA	NA
SN: 2448718	1/31/1997	Soil	EPA 8081	24	NA	NA	NA	NA	NA	NA	NA
B 3126-Soil	1/8/1998	Soil	EPA 8081	<1	NA	NA	NA	NA	NA	NA	NA

NA: Not available
The source of the data: Final version of Visual Site Inspection (TetraTech, 2008).



Explanation

- Site Location
- Drainage Area Delineation
- Future Building
- 90 Contour Elevation in ft
- 3126 Building Number
- Road
- Sidewalk
- Fence
- Stream

DATE 1/18/2013	TIDEWATER INC	
DRAWN HS	Site Detailed Location Map L04 (Hangar 3126 at Davison Army Air Field) Fort Belvoir, VA	
APPROVED WSY	DRAWING: Fig9_L04_Map.dwg	REV 1.0
	PROJECT: 4008-002 SCALE GRAPHIC	SHEET 1/1

2020

L47: Former Concrete Pad Transformer Storage Area

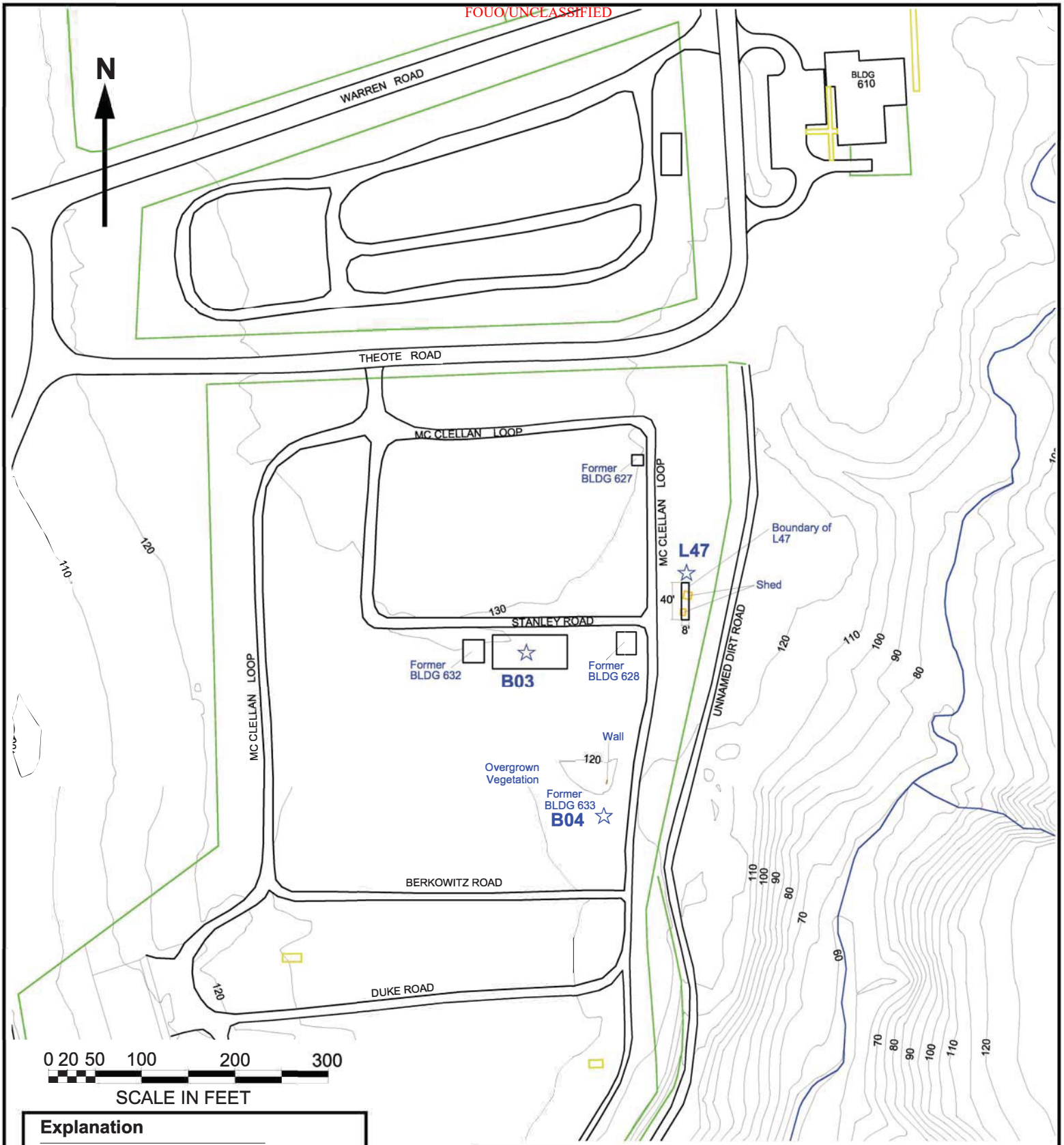
PCB TMDL ACTION PLAN – APPENDIX A-9

FORT BELVOIR

Table A-9: L47 Historical PCB Sampling Data

Sample ID	Sample Date	Matrix	Analysis Method	Total PCBs (pg/L)	Aroclor 1016 (µg/kg)	Aroclor 1221 (µg/kg)	Aroclor 1232 (µg/kg)	Aroclor 1242 (µg/kg)	Aroclor 1248 (µg/kg)	Aroclor 1254 (µg/kg)	Aroclor 1260 (µg/kg)
L47-SB01	1/10/2013	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	ND
L47-SB02	1/10/2013	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	ND
L47-SB03	1/10/2013	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	ND

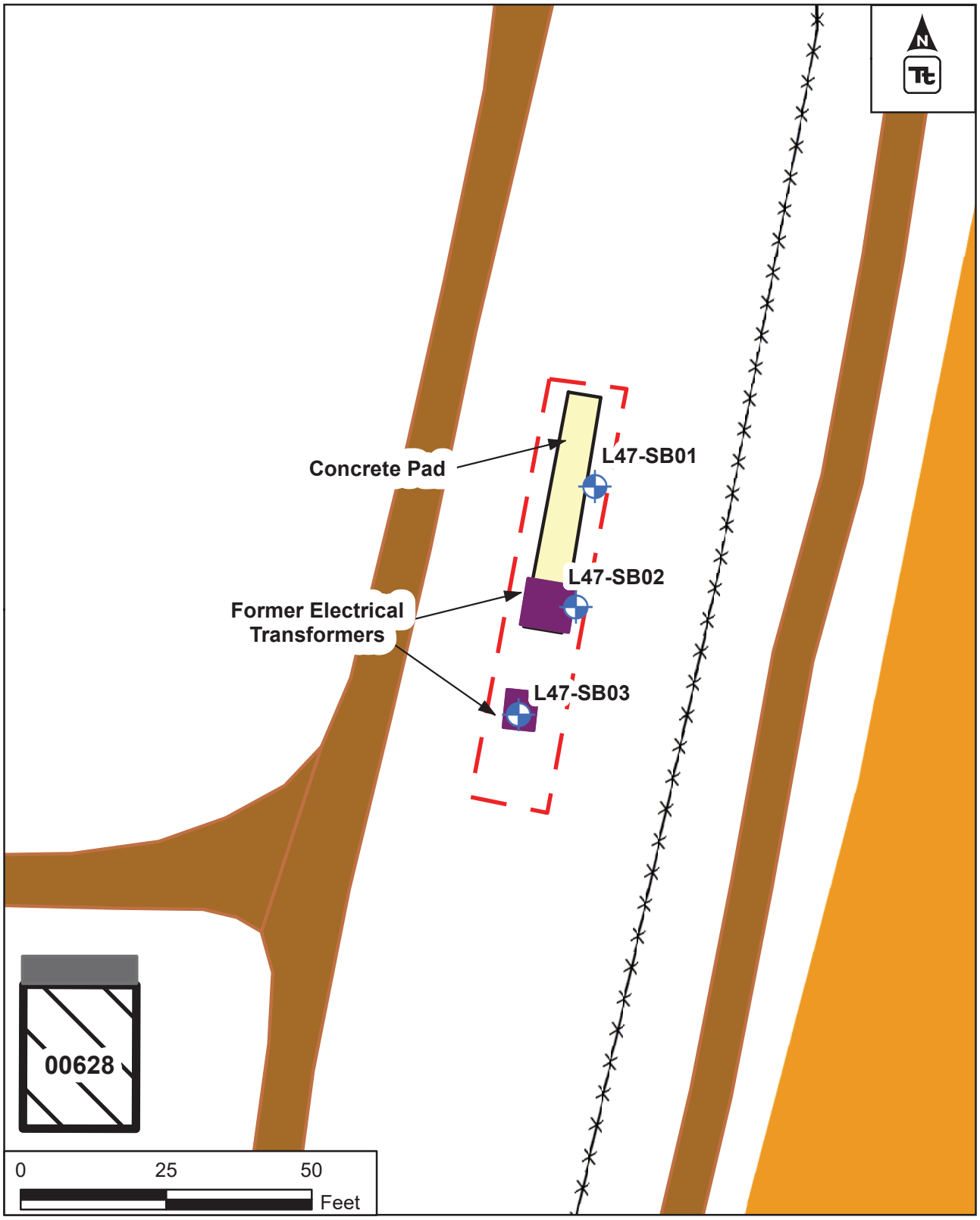
NA: Not Available.
ND: Not Detected
The source of the data: Final RCRA Facility Investigation Report Solid Waste Management Unit (SWMU) L-47 (Tetra Tech, 2013).



Explanation

- ☆ Site Location
- Boundaries of B03, B04, L47
- Drainage Area Delineation
- 90 Contour Elevation in ft
- 632 Building and Number
- Road
- Slab
- Fence
- Stream

DATE 1/17/2013	TIDEWATER INC
DRAWN HS	**Site Detailed Location Map for B03/B04/L47 Fort Belvoir, VA**
APPROVED WSY	
DRAWING: Fig5_B03_B04_L47_Map.dwg	REV 1.0
PROJECT: 4008-002 SCALE GRAPHIC	SHEET 1/1



LEGEND

- Concrete Slabs
- Approximate SWMU L-47 Limits
- SWMU L-47 Transformer Pad
- SWMU A-28
- Fence
- Unpaved Road
- Demolished Buildings
- Former Electric Transformers
- Soil Boring Locations

Solid Waste Management Unit (SWMU) L-47 Soil Boring Sample Locations

Sources: Fort Belvoir GIS, 2006; Tetra Tech GIS, 2008.

2020

N13: Building 1490 Hazardous Material Storage Area

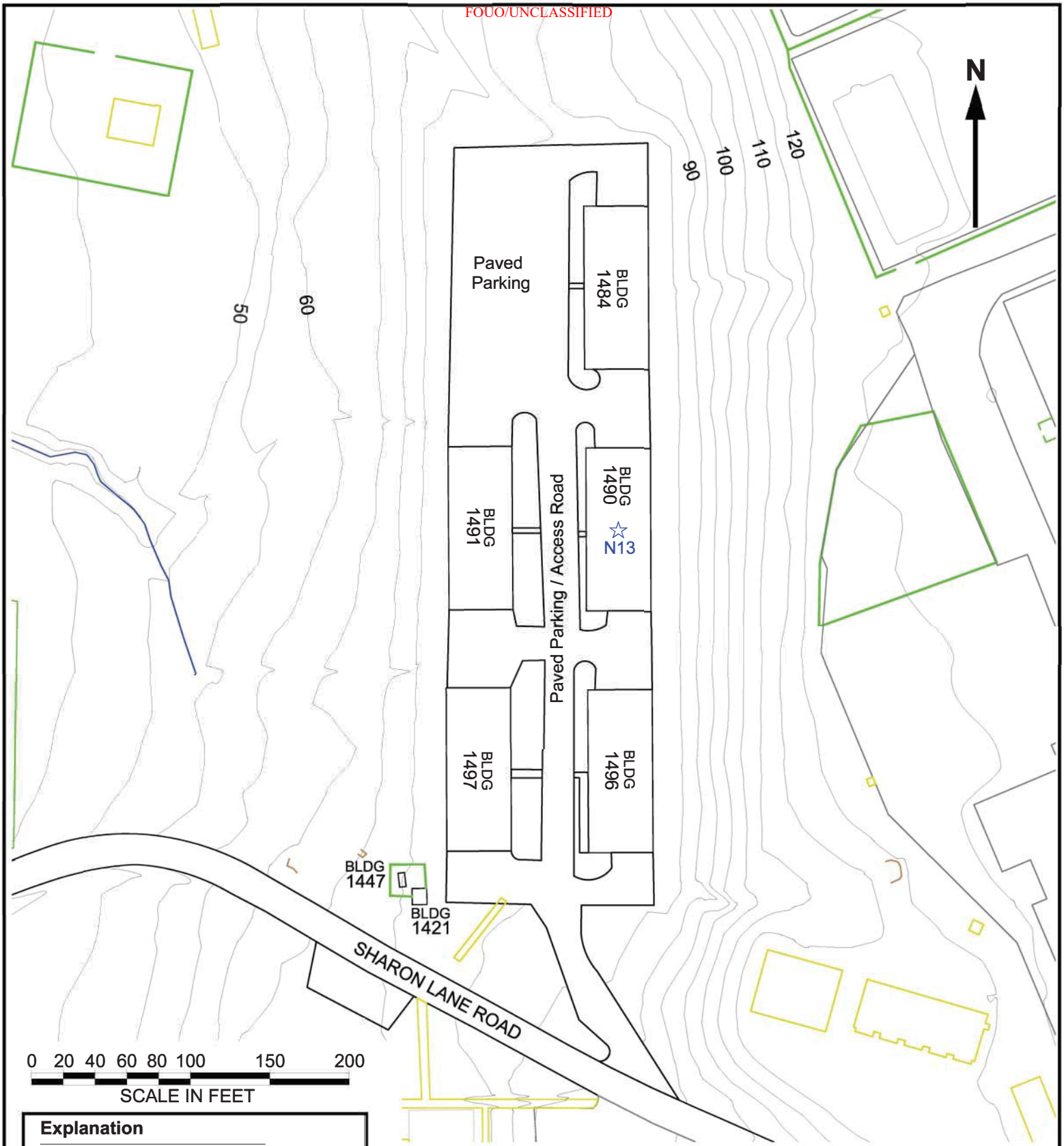
PCB TMDL ACTION PLAN – APPENDIX A-10

FORT BELVOIR

Table A-10: N13 Historical PCB Sampling Data

Sample ID	Sample Date	Matrix	Analysis Method	Total PCBs (pg/L)	Aroclor 1016 (µg/kg)	Aroclor 1221 (µg/kg)	Aroclor 1232 (µg/kg)	Aroclor 1242 (µg/kg)	Aroclor 1248 (µg/kg)	Aroclor 1254 (µg/kg)	Aroclor 1260 (µg/kg)
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

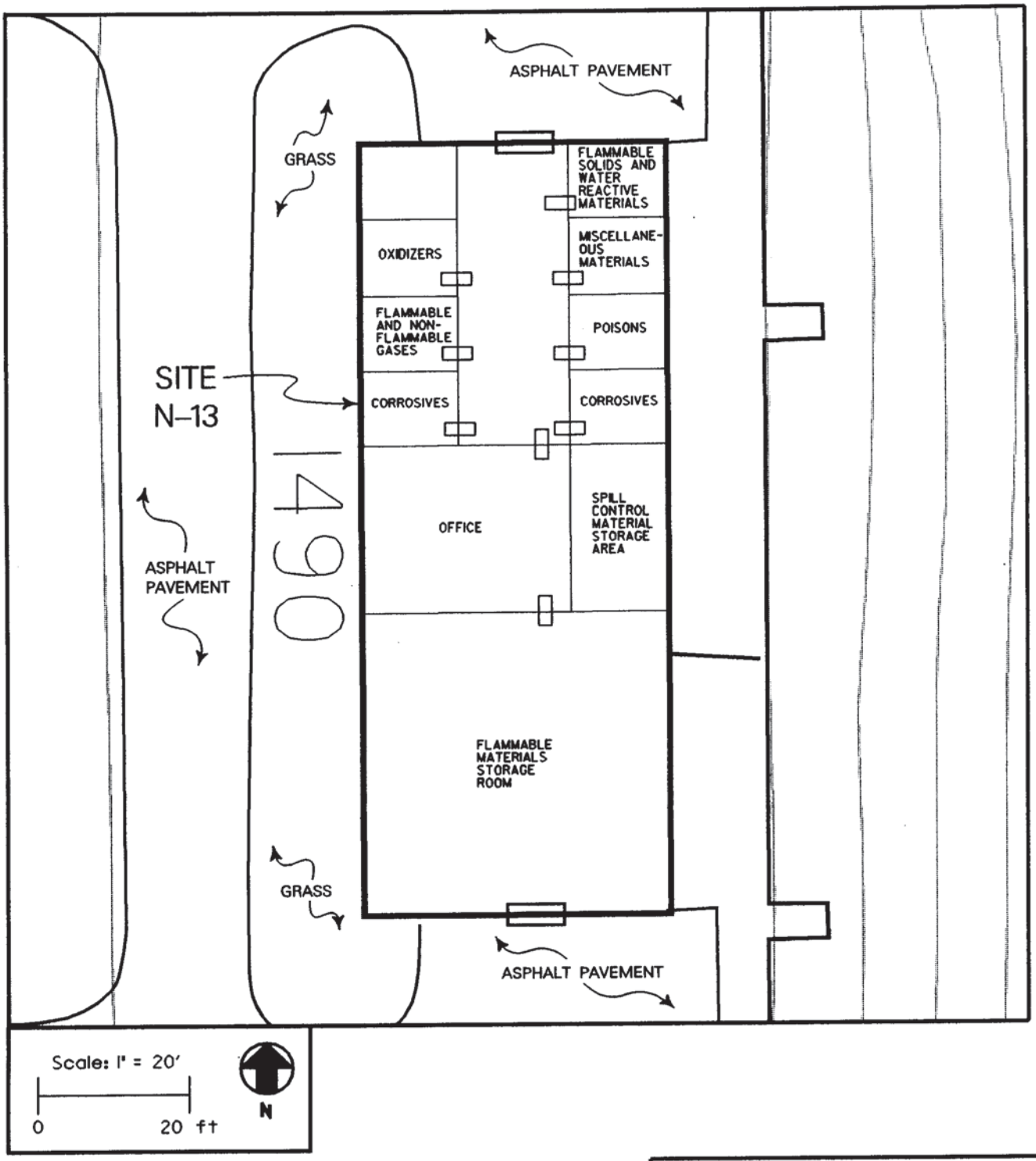
NA: Not available.



Explanation

- ☆ Site Location
- Drainage Area Delineation
- Proposed Sample Location
- 50 Contour Elevation in ft
- 1492 Building Number
- Road
- Sidewalk
- Fence
- Stream

DATE 1/25/2013	TIDEWATER INC
DRAWN HS	**Site Location Map N13 (Hazardous Waste Storage Building) Fort Belvoir, VA**
APPROVED WSY	DRAWING: Fig11_N13_Map.dwg REV 1.0
PROJECT: 4008-002	SCALE GRAPHIC SHEET 1/1



FORT BELVOIR
SOLID WASTE MANAGEMENT UNIT

Detailed Site Plan
Site N-13

Hazardous Materials Storage
(Building 1490)

Figure 2

2020

MP11: Building 1495 Former Outdoor Transformer Storage Area

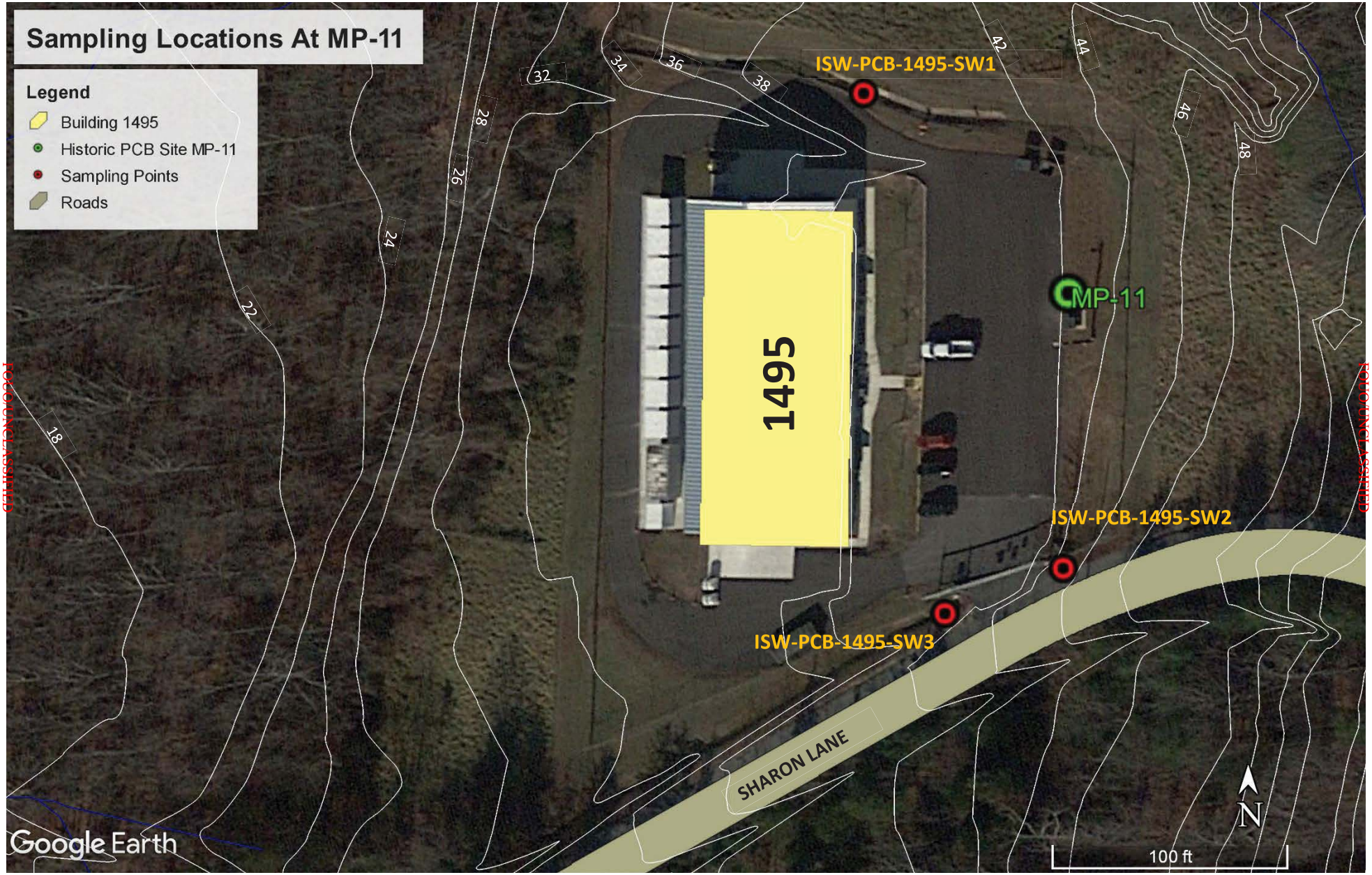
PCB TMDL ACTION PLAN – APPENDIX A-11

FORT BELVOIR

Table A-11. MP11 (1495) Historical PCB Sample Data

Sample ID	Sample Date	Matrix	Analysis Method	Total PCBs (pg/L)	Aroclor 1016 (µg/kg)	Aroclor 1221 (µg/kg)	Aroclor 1232 (µg/kg)	Aroclor 1242 (µg/kg)	Aroclor 1248 (µg/kg)	Aroclor 1254 (µg/kg)	Aroclor 1260 (µg/kg)	Aroclor 1262 (µg/kg)	Aroclor 1268 (µg/kg)
1151/33	4/20/2012	Soil	8082	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
FBB1495SS61N	8/20/2012	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	230	ND	ND
FBB1495ASP	8/20/2012	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	3170	ND	ND
FBB1495SS12IN	8/20/2012	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
B1495-SS-1	8/12/2013	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	43.9	ND	ND
FBB1495-P3FT	8/13/2013	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
FBB1495WL5-13	8/27/2013	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
B1495-SS1-0-10	6/23/2014	Soil	8081/808	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
B1495-SS2-0-10	6/23/2014	Soil	8081/808	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
1495-1-4ft	7/9/2014	Soil	8081/808	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
1495-2-3ft	7/9/2014	Soil	8081/808	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
1495-3-3ft	7/9/2014	Soil	8081/808	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
1495-4-3ft	7/9/2014	Soil	8081/808	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
1495-5-5ft	7/9/2014	Soil	8081/808	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
#1 PCB EPA 8082	10/27/2014	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
1495-H.A.1	6/22/2015	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
1495-H.A.2	6/22/2015	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	36	NA	NA
1495-H.A.3	6/22/2015	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
1495-H.A.4	6/22/2015	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
1495-H.A.5	6/22/2015	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
1495-H.A.6	6/22/2015	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
1495-H.A.7	6/22/2015	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
1495-H.A.8	6/22/2015	Soil	8082A	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
1495-SW-01	7/6/2015	Water	8082A	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
1495-SW-02	7/6/2015	Water	8082A	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
1495-SW-03	7/6/2015	Water	8082A	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA
SW001	4/30/2015	Water	1668A	93100	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW003	4/30/2015	Water	1668A	12300	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW001	9/29/2015	Water	1668A	328	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW003	9/29/2015	Water	1668A	1680	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW001	2/28/2017	Water	1668A	2237	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW003	2/28/2017	Water	1668A	3029	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW003	2/28/2019	Water	1668A	475	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW001	3/21/2019	Water	1668A	677	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW003	11/22/2019	Water	1668A	667	NA	NA	NA	NA	NA	NA	NA	NA	NA

The source of the data: EA Engineering, 2012. ; EA Engineering, 2013. ; Inspection Experts Inc., 2015. ; Angler Environmental, 2015. ; Angler Environmental 2017, RES Environmental 2019.

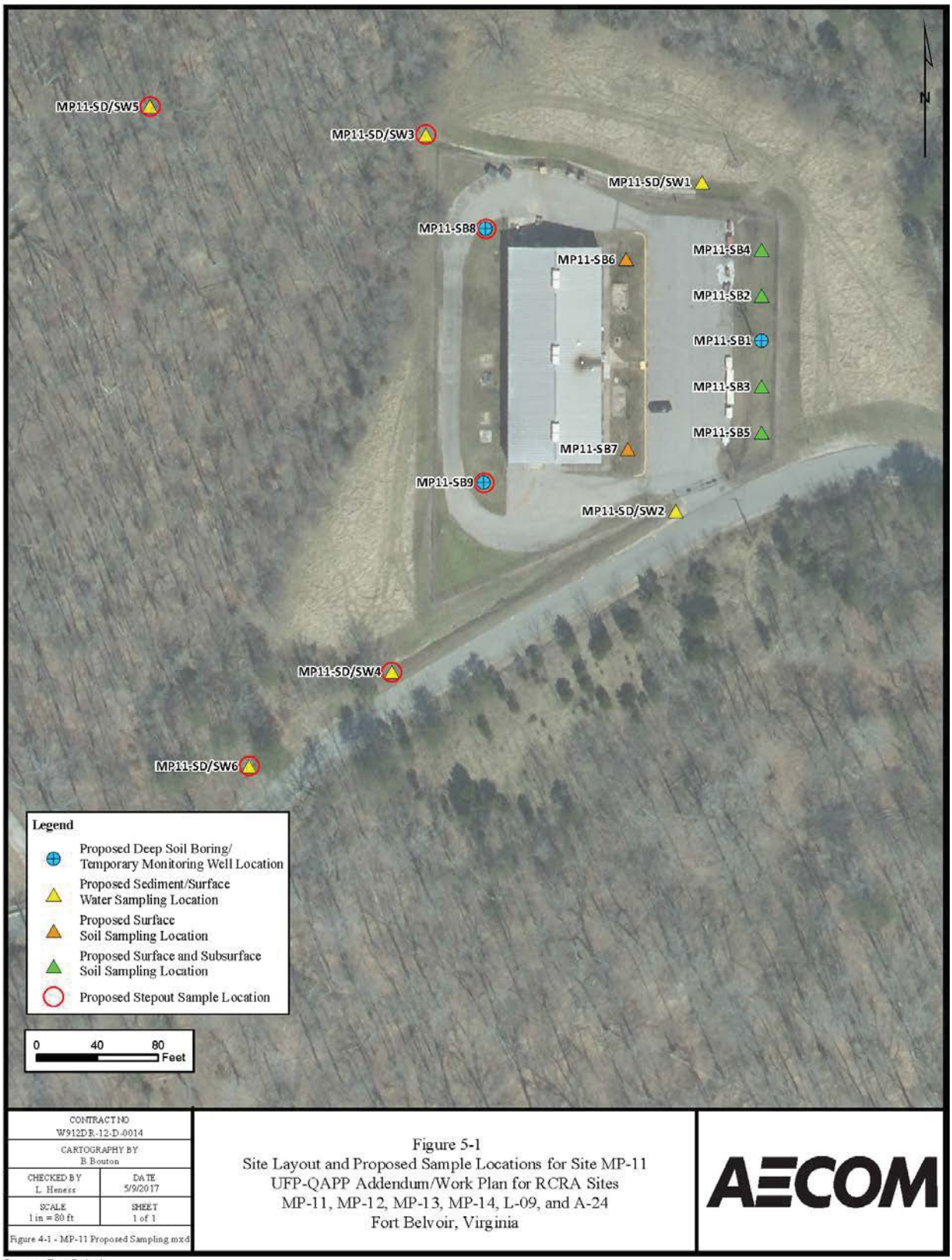


Created For:
U.S. Army Garrison

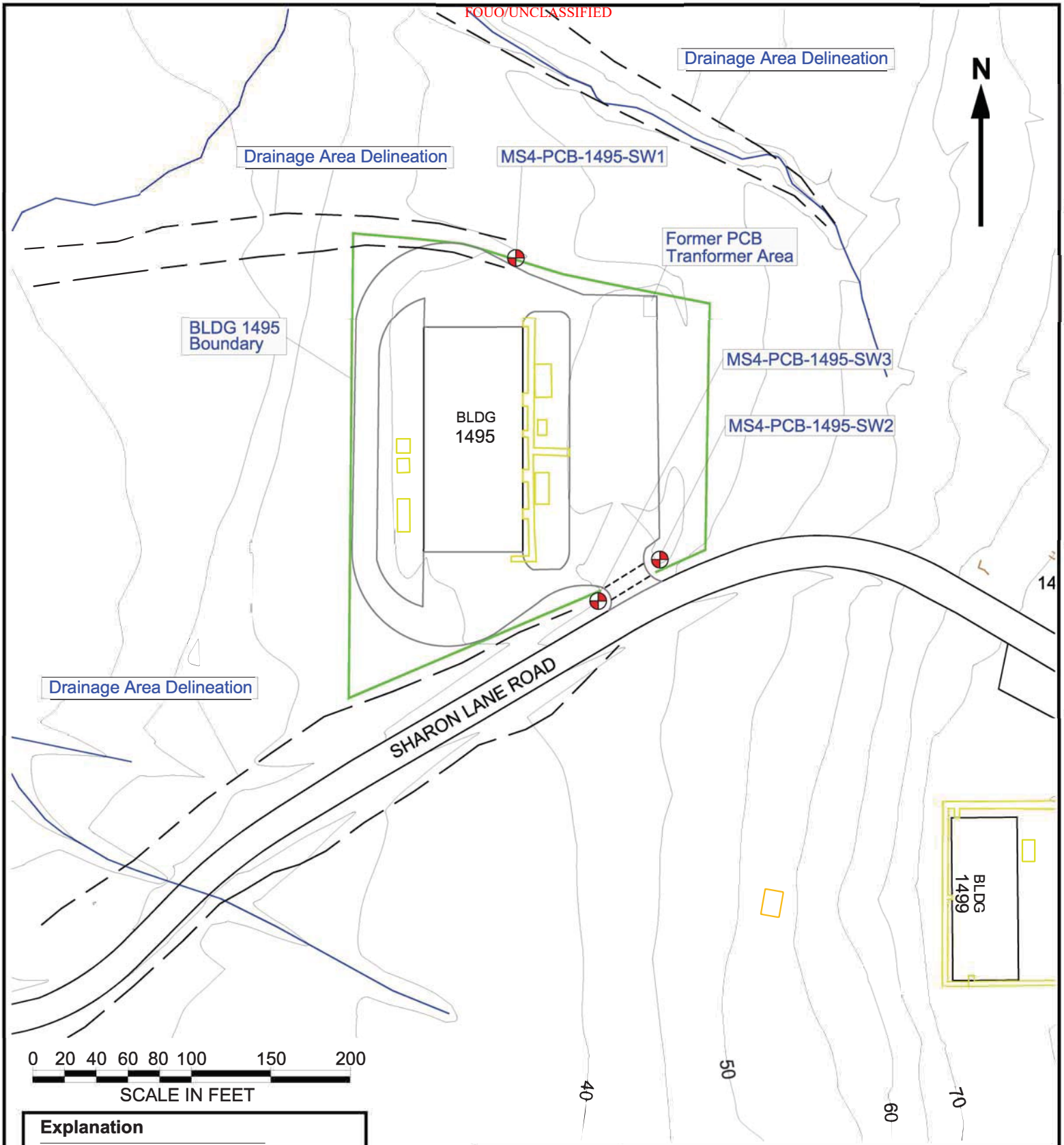
PCB Sampling Locations at Historic PCB Site MP11

Created By:
SCF Construction and Fuel Services LLC

Site Layout and Proposed Sample Locations for Site MP-11 RFI



Source: Fort Belvoir



Explanation

- Culvert
- Drainage Area Delineation
- Proposed Sample Location
- 50 Contour Elevation in ft
- 701 Building and Number
- Road
- Sidewalk
- Fence
- Stream

DATE 1/16/2013	TIDEWATER INC	
DRAWN HS	Sampling Location at Bldg 1495 (Hazardous Waste Storage Building) Fort Belvoir, VA	
APPROVED WSY	DRAWING: Fig10_1495_Map.dwg	REV 1.0
PROJECT: 4008-002	SCALE GRAPHIC	SHEET 1/1

2020

MP12: 249th Motorpool Area Stream Contamination

PCB TMDL ACTION PLAN – APPENDIX A-12

FORT BELVOIR

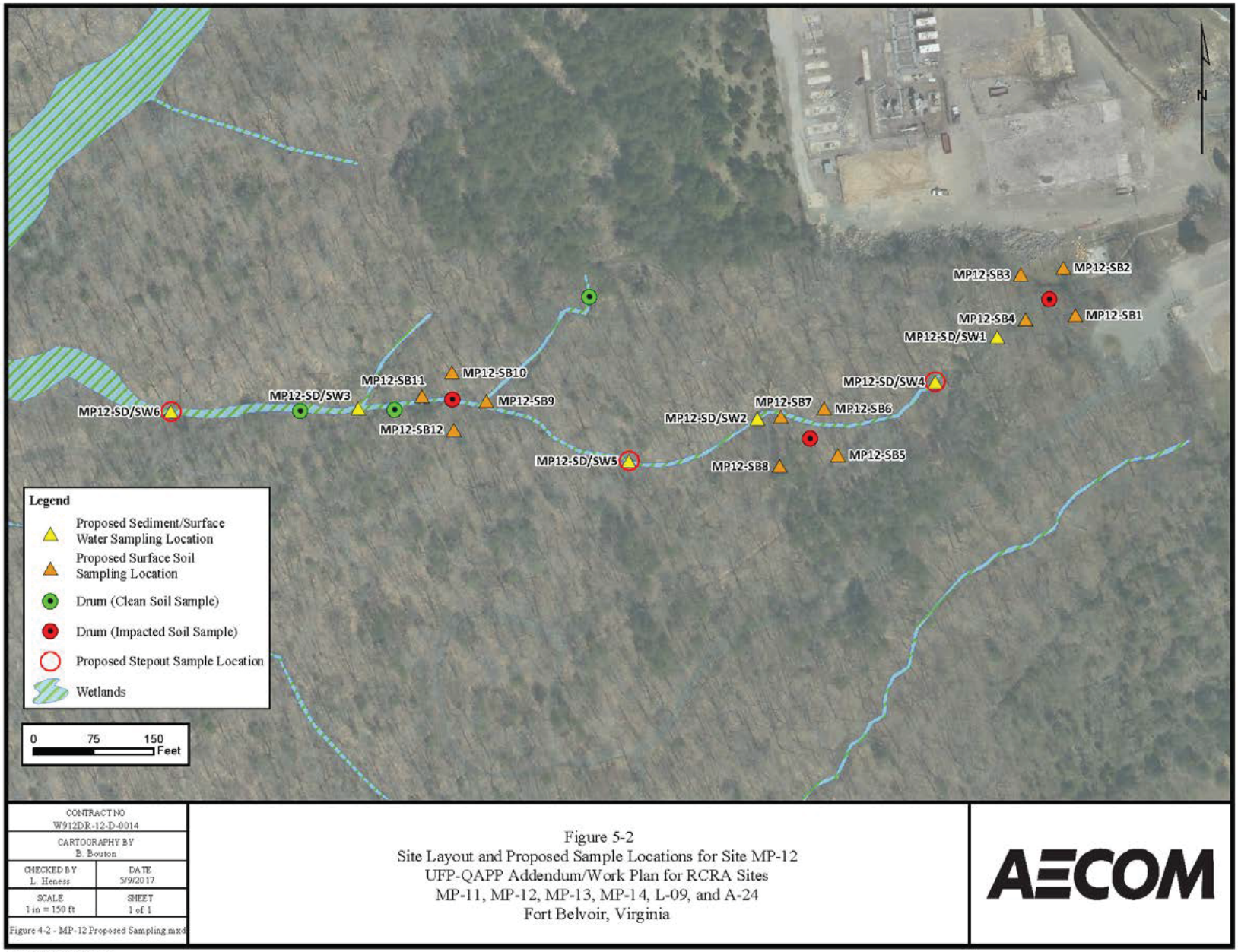
Table A-12: MP12 Historical PCB Sampling Data

Sample ID	Sample Date	Matrix	Analysis Method	Total PCBs (pg/L)	Aroclor 1016 (µg/kg)	Aroclor 1221 (µg/kg)	Aroclor 1232 (µg/kg)	Aroclor 1242 (µg/kg)	Aroclor 1248 (µg/kg)	Aroclor 1254 (µg/kg)	Aroclor 1260 (µg/kg)
SS01	10/19/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND0	ND
SS02	10/19/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	100
SS03	10/19/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	150
SS04	10/19/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
SS05	10/19/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
SS06	10/19/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
SS07	10/19/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND

ND: Not Detected
NA: Not Available
The source of the data: TestAmerica, 2015.

DRAFT FINAL

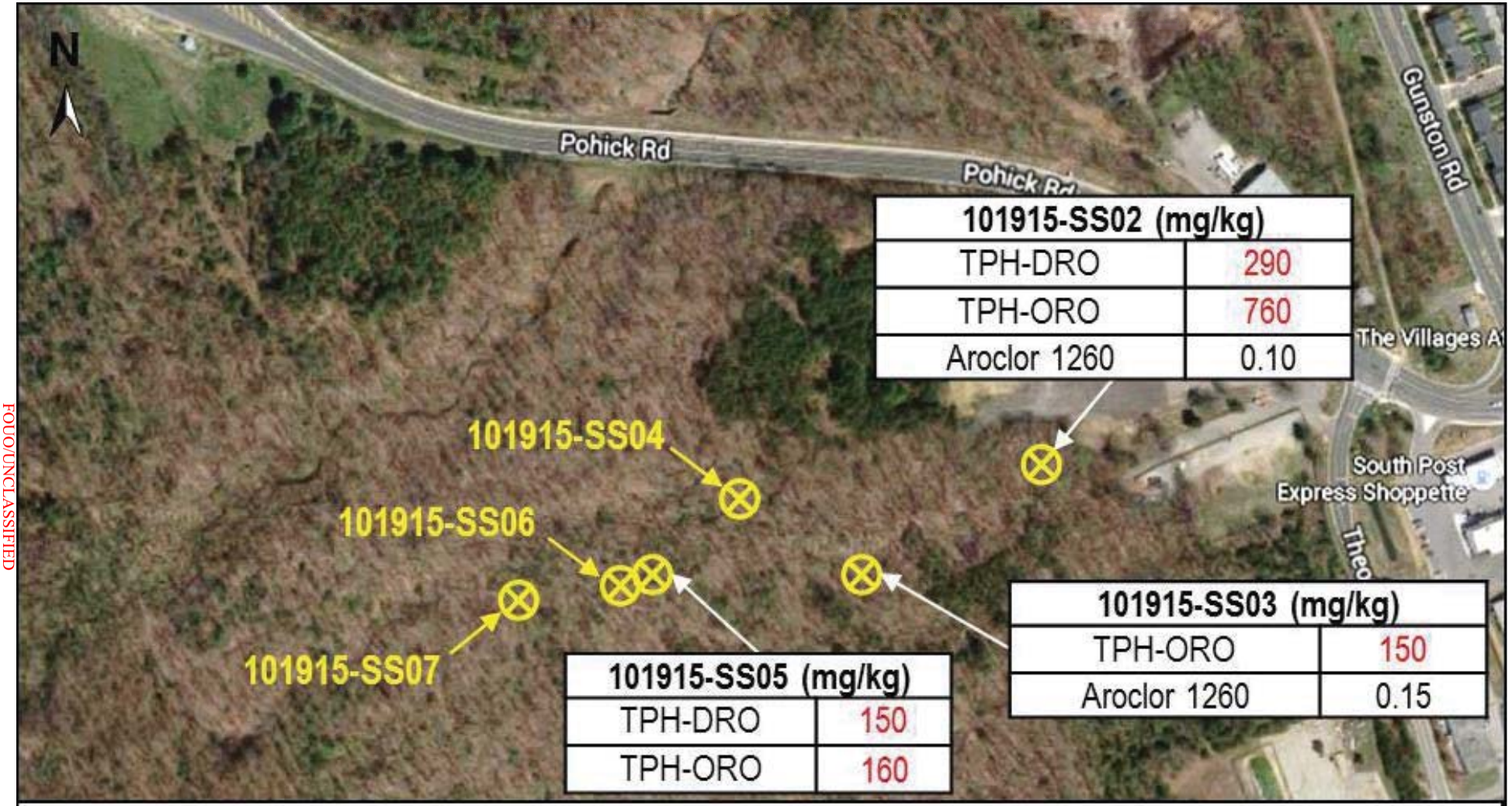
Site Layout and Proposed Sample Locations for Site MP-12 RFI



Source: Fort Belvoir

FOUO/UNCLASSIFIED

FOUO/UNCLASSIFIED



IEI
Inspection Experts, Inc.

TPH (Exceeded) and PCB Sampling Results
Fort Belvoir, VA

2020

MP13: Theote Road/ Warren Road Wash Yard Area

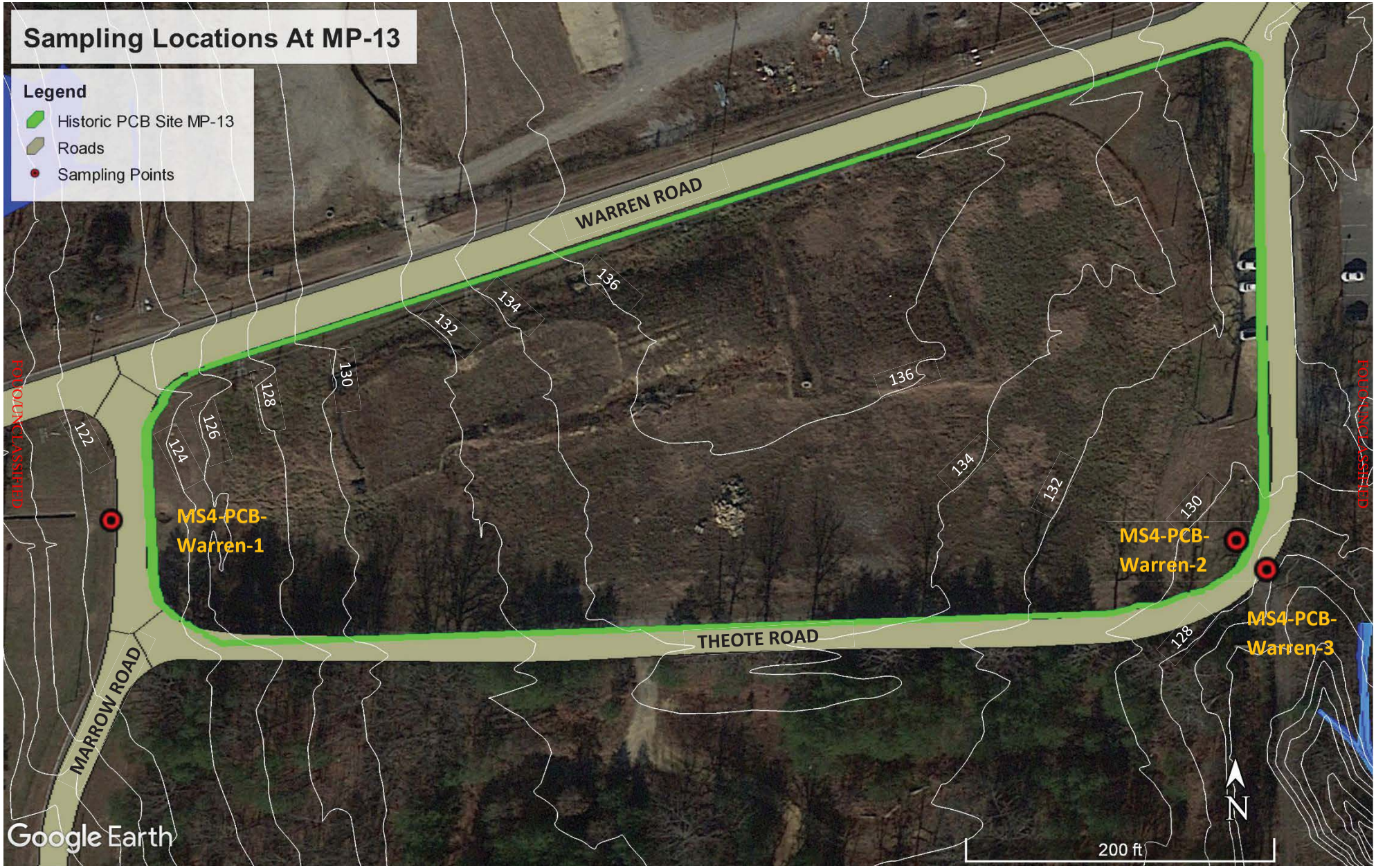
PCB TMDL ACTION PLAN – APPENDIX A-13

FORT BELVOIR

Table A-13: MP13 Historical PCB Sampling Data

Sample ID	Sample Date	Matrix	Analysis Method	Total PCBs (pg/L)	Aroclor 1016 (µg/kg)	Aroclor 1221 (µg/kg)	Aroclor 1232 (µg/kg)	Aroclor 1242 (µg/kg)	Aroclor 1248 (µg/kg)	Aroclor 1254 (µg/kg)	Aroclor 1260 (µg/kg)
WYSS-01	12/9/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	69
WYSS-02	12/9/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	13 J
WYSS-03	12/9/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	14 J
WYSS-04	12/9/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	19
WYSS-05	12/9/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	19
WYSS-06	12/9/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	18 J
WYSS-07	12/9/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	8.9 J
WYSS-08	12/9/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	9.4 J
WYSS-09	12/9/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	11 J
WYSS-10	12/9/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	15 J
WYSS-11	12/9/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	39
SS01	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
SS02	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	70
SS03	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
SS04	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	34
SS04D	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	38
SS05	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	100
SS06	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
SS07	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
SS08	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	13 J
SS09	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	12 J
SS10	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	14 J
SS11	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
SS12	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	41
SS13	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
SS13D	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	9.5 J
SS14	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	11 J
SS15	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	11 J
SS16	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	27
SS17	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	32
SS18	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	16 J
SS19	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
SS20	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	11 J
SS21	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	26
SS22	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	12 Jp
SS23	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	48
SS24	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	12 J
SS25	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	67
SS26	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	41
SS27	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
SS28	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
SS28D	2/4/2016	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
Warren Road 1	8/7/2017	Water	1668A	692.28	NA	NA	NA	NA	NA	NA	NA
Warren Road 2	8/7/2017	Water	1668A	2468.26	NA	NA	NA	NA	NA	NA	NA
Warren Road 1	2/24/2019	Water	1668A	494.89	NA	NA	NA	NA	NA	NA	NA
Warren Road 2	2/24/2019	Water	1668A	10456.22	NA	NA	NA	NA	NA	NA	NA

J: Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value
p: The %RPD between the primary and confirmation column/detector is >40%. The lower vaule has been reported
ND: Not Detected
NA: Not Available
The source of this data: TestAmerica, 2015.



Created For:
U.S. Army Garrison

PCB Sampling Locations at Historic PCB Site MP13

Created By:
SCF Construction and Fuel Services LLC

Site Layout and Proposed Sample Locations for Site MP-13 RFI

Source: Fort Belvoir

2020

MP14: Building 2476 Former Hazmat Storage Locker

PCB TMDL ACTION PLAN – APPENDIX A-14

FORT BELVOIR

Table A-14: MP14 Historal PCB Sampling Data

Sample ID	Sample Date	Matrix	Analysis Method	Total PCBs (pg/L)	Aroclor 1016 (µg/kg)	Aroclor 1221 (µg/kg)	Aroclor 1232 (µg/kg)	Aroclor 1242 (µg/kg)	Aroclor 1248 (µg/kg)	Aroclor 1254 (µg/kg)	Aroclor 1260 (µg/kg)
SS-2476-01	8/26/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
SS-2476-02	8/26/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
SS-2476-03	8/26/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	16 J	98
SS-2476-04	8/26/2015	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
MP14-SB1-SS	3/27/2018	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
MP14-SB2-SS	3/27/2018	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
MP14-SB3-SS	3/27/2018	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
MP14-SB4-SS	3/27/2018	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
MP14-SB5-SS	3/27/2018	Solid	8082A	NA	ND	ND	ND	132 J	ND	ND	ND
MP14-SB6-SS	3/27/2018	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
MP14-SB1-SB	3/27/2018	Solid	8082A	NA	ND	ND	ND	ND	ND	ND	ND
MP14-SB1-GW	3/27/2018	Water	8082A	NA	ND	ND	ND	ND	ND	ND	ND

J: Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value
ND: Not Detected
NA: Not Available
All Total PCB (tPCB) data presented are adjusted ('censored') valves
The source of this data: TestAmerica, 2015

Site Layout and Proposed Sample Locations for Site MP-14 RFI

Source: Fort Belvoir

2020

APPENDIX B.1

HISTORIC PCB USE INVENTORY

FORT BELVOIR

The historical use inventory fulfills Section I B 6 requirements to evaluate properties for potential sources of the WLA pollutant. For PCB TMDL the inventory is looking for sites where PCBs are currently or have been historically stored, transferred, transported, or spilled in a manner that would expose it to precipitation.

The historical use inventory adhered to the following steps:

1. Several lists of sites were provided by the Fort Belvoir DPW-ENRD. Tidewater collected the various lists and compared them for consistency.
2. A site walk for outfall reconnaissance inventory was completed on November 5, 2012 for 10 sites identified by Fort Belvoir DPW-ENRD.
3. An internet search for "PCB and Fort Belvoir" was completed to recover any other sources referencing PCBs at Fort Belvoir to ensure the list of sites provided by DPW-ENRD was comprehensive.
4. The Fairfax County Planning department was contacted to follow up on a PCB site reference recovered during the internet search.
5. Information was requested and received from VDEQ regarding a site referenced in the Potomac River Watershed PCB TMDL Study Report.

Details and findings are provided from each step.

Step 1 – Collecting and comparing ENRD lists for consistency

Details:

A cursory review was conducted in May 2012 by DPW-ENRD personnel that indicated there are approximately 10 locations at Fort Belvoir where historical PCB presence is documented. The number of 10 locations is noted in background section in the contract scope of work.

Wilamena Harback provided a text summary of PCB information for 9 sites received by Tidewater via email from Pam Couch. (A23, A24, B03, B04, B09, B10, L03, L04, L47) The summaries also include notes regarding each sites potential drainage area.

Amy Martin provided a spreadsheet summary of information on 9 SWMUs of potential PCB concern received by Tidewater via email from Pam Couch. (A23, A24, B03, B04, B09, B10, L03, L04, L47)

Carol Robertson of SCF LLC, the contractor that supports SWMUs, MMRP and Petroleum Management Programs at Fort Belvoir, provided a list of 7 SWMUs of potential PCB concern with a statement of current site status received by Tidewater via email from Pam Couch. (A23, A24, B03, B04, B10, L03, L47). It was noted that Phase I work will begin in Fall 2012 at L03 and L47.

The above 9 sites are established environmental clean-up sites. The site ID's were established by the 1988 RCRA Facility Assessment at Fort Belvoir. The tenth site is Building 1495. This location was recently brought to DPW-ENRD's attention when it was observed that transformers possibly containing PCBs were being stored outside and unprotected at the Northeast corner of the parking lot.

The 10 locations provided by DPW-ENRD personnel for consideration in this historical use inventory are as follows:

Site ID	Description	PCB Presence
A23	Former Coal Storage Area	One time PCB Spill
A24	Former DPDO Storage Area	One time PCB Spill
B03	Former BLDG632 Hazardous Waste Storage Area	Included PCB contaminated materials
B04	Former BLDG633 Hazardous Waste Storage Area	Included PCB contaminated materials
L47	Former Concrete Pad Transformer Storage Area	Transformers contained PCBs
B09	Former Building 1430 Transformer Storage Area	Transformers contained PCBs
B10	Building 190 Former Indoor Storage Room	PCB containing material stored in room
L03	Former Asphalt Storage Pad near Building 2596	Transformers possibly contained PCBs
L04	Hangar 3126 Former outdoor concrete pad transformer storage area	Transformers contained PCBs
Building 1495	Outdoor Transformer Storage Area	Transformers possibly contained PCBs

Findings:

The list of 10 sites is consistent between various lists by DPW-ENRD.

Step 2 – Site Visit for Outfall Reconnaissance Inventory

Details: Site walk took place from 0800-1600 on November 5, 2012. Participants included the following:

Pamela Couch	Fort Belvoir DPW-ENRD
Sam Yoon	Tidewater
Sara McGarity	Tidewater
Andrew Solomon	Tidewater

Sites visited in order were:

1. L47
2. B03
3. B04
4. A23
5. B10
6. A24
7. Building 1495
8. B09
9. L03
10. L04

During the reconnaissance, notes were taken regarding each site's current status. In addition, pictures were also taken of each site showing each site's current status. All photos were provided to DPW-ENRD on CD. Many of the sites were included in a visual site assessment completed in 2005. Fewer notes were taken when the 2005 observations matched what was observed during this visit. Also, proximity of each PCB site to an outfall to surface waters was reviewed.

Findings:

L47 – Former Concrete Pad Transformer Storage Area

This site was challenging to locate since the concrete pad is no longer present at the site and much vegetation has grown up around it. There was no visual evidence of PCBs at the site. There were no storm drains close by, but it was noted that on the other side of the road on the other side to the fence adjacent to the site, there is a steep drainage area that leads to a creek. It was concluded that this site would not be a likely source of PCBs given the site was cleaned up in the past and it is a significant distance from any storm drains. While at the site, 2 flags were discovered that seemed to signify sampling locations. When going back and looking at the sites lists, the email from Carol Robertson of SCF indicated Phase I work was planned for L47 starting in Fall 2012. More information regarding this Phase I work should be gathered if possible to ensure it does not involved PCBs.

B03 – Former BLDG632 Hazardous Waste Storage Area

This site was near L47 and there is no visual evidence of PCBs at the site. Building 632 has been removed from the location; the site was remediated, and received regulatory closure from VDEQ in 1997. There are no stormwater drains nearby. Currently the site is wooded with substantial brush growth. It was concluded that this site would not be a likely source of PCBs as there is no longer evidence of the hazardous waste storage area where PCBs were stored, the site was remediated, re-vegetated, and there are no nearby storm drains.

B04 – Former BLDG633 Hazardous Waste Storage Area

This site was also near L47 and again there is no visual evidence of PCBs at the site. Building 633 has been removed from the location; the site was remediated, and received regulatory closure from VDEQ in 1997. There were no stormwater drains nearby, but a culvert leading to the nearby steep drainage was located slightly north of the former building site. Currently the site is wooded with substantial brush growth. It was concluded that this site would not be a likely source of PCBs as there is no longer evidence of the hazardous waste storage area where PCBs were stored, the site was remediated, re-vegetated, and there are no nearby storm drains.

A23 – Former Coal Storage Area

The site was challenging as the historical documentation regarding the exact location of the spill was disorganized and comingled with information from site A24. Site A23 is currently used as a materials recycling sorting and storage area. In the late 1970's a onetime PCB spill occurred. The site underwent remediation. There were several stormwater drains located within the concrete sorting area. Near one drain there was vegetation growing. The natural drainage channel to the West of the site reference in historical documents was difficult to locate. Drainage channels to the East and to the South were indentified during the site visit, but in fact do not seem related to the PCB spill at the site or of concern with regard to PCBs in stormwater. The spill area was remediated in the early 1980s and there is no longer evidence of the PCB spill at the site. Due to the extensive site remediation, it was concluded that this site would not be likely to be a source of PCBs. However, it was noted that this site should be given special consideration in the site analysis.

B10 – Building 190 Former Indoor Storage Room

This site was once located inside of Building 190. Building 190 was not entered during the site visit as the finding from the 2005 visual inspection appeared to hold that the indoor storage room was entirely renovated such that there was no evidence of the storage area. It was concluded that this site would not be a likely source of PCBs because there were no reported PCB spills at the site, the storage area was located inside such that the materials were not exposed to precipitation, and the area has since been renovated.

A24 – Former DPDO Storage Area

In the late 1970's a one-time PCB spill occurred at the site. During the 2005 site assessment, this site could only be observed from the outside due to fencing surrounding the area. On this most recent site visit, the area was accessed through a part of the fencing that had been torn down. The site is currently wooded with thick brush. There was no visual evidence of the PCB spill. A drainage feature was identified along the northern fence line. However, based on location of the PCB spill cleanup, the drainage feature would not have been impacted. A natural creek to the northwest of the site was also observed. In the early 1980's the site underwent successful remediation to remove PCB contaminated soil and prevent PCBs from migrating from the site. Due to the extensive site remediation and available clean up documentation, it was concluded that this site would not be likely to be a source of PCBs.

Building 1495 – Outdoor Transformer Storage Area

This site was recently used as a location where transformers were stored. There was visual indication of transformer fluid leaks on the pavement. Containment measures were in place around the area where fluid had leaked. The area was exposed to precipitation. A north drainage channel to the north and natural drainage channel east of the site were observed. To the east of the site is a steep slope to the entrance of the building. It was concluded that this site would be a likely source of PCBs and should be carried through to the next step of establishing a sampling plan. Potential sampling locations were suggested during the site visit.

B09 – Former Building 1430 Transformer Storage Area

This site is currently inaccessible due to fencing surrounding the area, and Building 1430 no longer exists. The site is currently being used to store trailers, some containing generators. The raised berm and ramp constructed after 1991 were visible. The exact area where PCB containing transformers were stored is not identifiable and there was no visual indication of PCBs. One storm drain is located nearby, and the area is entirely paved. Historic documents indicated that the area was sampled in 1997 to determine any possible impact of PCBs. All of the samples were non-detect using EPA Method 8082. It was concluded that this site would be an unlikely source of PCBs due the paved nature of the and past sampling that did not detect any PCBs at the site.

L03 – Former Asphalt Storage Pad near Building 2596

This site is located behind the fenced in restricted access area of Building 2596, Humphreys Engineering Center. During the site visit, it was not possible to determine the exact location of the site as described in the historical documents. The historical documents reference an asphalt pad where debris, drums and transformers were stored. In agreement with the 2005 observations, there was no evidence of this storage area currently present at the site. Since the site area was unknown, a dry stormwater retention pond was visually observed. It was concluded that this site would not be a likely source of PCBs since there is

presently no evidence of PCBs at the site. When going back and looking at the sites lists, the email from Carol Robertson of SCF indicated Phase I work was planned for L03 starting in Fall 2012. More information regarding this Phase I work should be gathered if possible to ensure it does not involved PCBs.

L04 – Hanger 3126 Former Outdoor Concrete Pad Transformer Storage Area

This area no longer resembles the site as described in the historical record. According to the record, transformers were once stored on a fenced-in concrete pad. The concrete pad is no longer present and the area of transformer storage is now covered with gravel and contains a picnic bench and grill. There is a natural drainage feature to the southwest of the site. It was concluded that this site would not be a likely source of PCBs due to renovated nature of the area.

Step 3. – Internet Search

Details:

In addition to base personnel information, potential PCB sites were also investigated by searching for historical and current documents reasonably accessible documents that mention PCBs and Fort Belvoir.

Findings:

A 1994 GAO report was recovered that highlights the need for DOD to better identify and monitor equipment containing PCBs (GAO, 1994). As a part of the report investigations, an inspection was carried out at Fort Belvoir. The report notes that the fire department at Fort Belvoir received its first inventory of the Fort's known PCB equipment the day prior to the inspectors visit. Efforts were not made to recover this inventory as the SWMU and RCRA assessments are more recent and are assumed to incorporate any information that would have been contained in the GAO inventory.

A reference of PCBs at Fort Belvoir is made in the Fairfax County Comprehensive Plan, 2011 Edition Springfield Planning District, Area IV. Page 10 of the plan states, "A comprehensive evaluation of existing environmental conditions at the FBNA site revealed petroleum hydrocarbon contamination at some locations, **as well as PCB concentrations in three transformers that exceed federal guidelines.** Clean-up of any contaminated sites at the FBNA is required prior to any dedication or development of the Fort Belvoir North Area **(FBNA)** site." (Emphasis added).

Step 4 – Follow up with Fairfax County

Details:

The Fairfax County Planning Department was contacted by phone to determine if more information regarding the site referenced in their plans was available.

Findings:

The specific site referenced in the document is unknown. It is also unknown whether the site is even still in existence or if it has been dealt with in conjunction with redevelopment of the area. It was confirmed that the area of the referenced PCB site is the Fort Belvoir North Area (FBNA), not to be confused with the

Fort Belvoir North Post Area. The FBNA is under the jurisdiction of the Fort Belvoir MS4 permit. The referenced site is not included in this investigation due to lack of available information.

Step 5 – VDEQ

Details:

The Potomac River Watershed PCB TMDL Study Report notes a site at Fort Belvoir in Appendix A page A-30 as contributing a PCB load of 1.74 g/yr to the POTPCB model. The site is not identified by name. However, the longitude and latitude provided in the table on page A-30 corresponds to the location of site A23. While A23 is already identified as a site for historical use analysis in this action plan, the inclusion of A23 as a direct PCB contributor is of concern due to the extensive remediation that has taken place at the site. Investigating this reference further, in the Final Visual Inspection Report for Site A23 page 48 is a copy of a 2006 email from Katie Conaway to Marcia Kicos of DPW-ENRD. Katie Conaway is cited as an author of the Potomac PCB TMDL report. In the email Katie Conaway notes that after looking over the data provided on PCB contaminated sites at Fort Belvoir, they want to focus on A23 and A24. Katie Conaway of VDEQ was contacted on 11/30/2012 and was able to provide Tidewater with the two original emails between VDEQ and Fort Belvoir DPW-ENRD regarding PCB sites. The first email is dated 10/04/2006 and the second is dated January 11, 2007.

Findings:

The 10/04/2006 email contains an excel file with two lists of possible PCB sites. The first list was made by VDEQ by looking through the full list of SWMU registered to Fort Belvoir of which 11 mention PCBs. The VDEQ list contained the same 9 sites as the most recent DPW-ENRD lists and also noted A04 and N13, but did not include Building 1495. The second list was done by Laura Curtis of DPW-ENRD and is a follow up to the VDEQ list. Fort Belvoir DPW-ENRD responded proposing a list of only 4 sites being considered because there are only 4 sites where PCB spill had occurred. These four sites were A23, A24, B09, and L04.

A04 is the larger Former Coal Storage Area that includes A23 and other areas. Site A23 is contained within A04 and therefore A04 need not be addressed separately. N13 is Building 1490 Hazardous Material Storage Area. According to historical records, this building held hazardous waste including PCB containing transformers. It is unknown why this site was omitted from the DPW-ENRD lists. However, based on the site assessment as documented in the SWMU summary, this site would not be a likely source of PCBs as there were no recorded releases that occurred at the site. Whether or not to include this site in the analysis will need to be determined by DPW-ENRD personnel. It is recommended that inclusion or exclusion of this site between consistent with how B03 and B04 be incorporated as the sites are very similar.

Inventory Conclusions

The DPW-ENRD list of 10 sites is an accurate list of PCB sites at Fort Belvoir with the omission of N13 which should be included unless other rationale and support can be provided for its exclusion.

The table below includes all sites mentioned or researched during this inventory, with the exception of the NFBA site from the Fairfax County Comprehensive Planning Document which was determined not to be relevant.

Site ID	2012 ENRD Review	2006 DEQ Correspondence - Long List	2006 DEQ Correspondence - Short List	2008 Potomac Watershed PCB TMDL Study	Description	PCB Concern
A04		X			Former Coal Storage Area	Larger area containing A23 where a onetime PCB spill occurred
A23	X	X	X	X	Former Coal Storage Area	One time PCB Spill
A24	X	X	X		Former DPDO Storage Area	One time PCB Spill
B03	X	X			Former BLDG632 Hazardous Waste Storage Area	Included PCB contaminated materials
B04	X	X			Former BLDG633 Hazardous Waste Storage Area	Included PCB contaminated materials
B09	X	X	X		Former Building 1430 Transformer Storage Area	Transformers contained PCBs
B10	X	X			Building 190 Former Indoor Storage Room	PCB containing material stored in room
L03	X	X			Former Asphalt Storage Pad near Building 2596	Transformers possibly contained PCBs
L04	X	X	X		Hangar 3126 Former outdoor concrete pad transformer storage area	Transformers contained PCBs
L47	X	X			Former Concrete Pad Transformer Storage Area	Transformers contained PCBs
N13		X			Building 1490 Hazardous Material Storage Area	Included drums of PCB oils
Building 1495	X				Building 1495 Outdoor Transformer Storage Area	Transformers possibly contained PCBs

Historic use analysis will be carried out on the 11 sites below:

A23
A24
B03
B04
B09
B10
L03
L04
L47
N13
Building 1495

This PCB TMDL Action Plan was updated in 2018 and 2020 by SES Construction and Fuel Services (SCF) in compliance with Section.I.B of 9VAC25-890-40, the General Municipal stormwater discharges permit (MS4 Permit VAR040093 effective July 1, 2013) and Part I.C.4 of the Industrial Stormwater Major Permit (ISW Permit VA0092771 effective January 1, 2017). SCF conducted a full review of all previous historical use inventories, as well as compiled data for an additional three (3) new sites added by recommendation from Fort Belvoir DPW-ENRD's Defense Environmental Restoration Program (DERP).

The 2017/2018 review and update of the historical use inventory adhered to the following steps:

1. Virginia Department of Environmental Quality (VDEQ) comments on the approved 2013 PCB TMDL Action Plan were reviewed, along with all relevant Fort Belvoir permits, policies, and procedures.
2. A review of the approved 2013 PCB TMDL Action Plan was conducted to identify all relevant sites previously identified.
3. All available historical records for known PCB sites were reviewed and data were compiled, including all data available for newly identified sites.
4. Site visits were conducted to evaluate current onsite conditions of all sites.

Details and findings are provided for each step.

Step 1 – Reviewing VDEQ comments and Fort Belvoir permits, policies, and plans

The VDEQ comments from December 16, 2015 on the approved 2013 PCB TMDL Action Plan were reviewed in order to collect and review a list of all relevant Fort Belvoir policies and procedures that may be applicable to the plan. Each document was carefully considered and notes were taken on their potential to mitigate PCB contamination. In addition the Fort Belvoir policies the MS4 General Permit (2013-2018) and the Industrial Stormwater Major Permit (2017-2021) were reviewed to identify requirements for the Action Plan.

Findings:

Reviewed documents stated a need for the inclusion of a section within the PCB TMDL Action Plan on legal authorities. It was also noted that information and tables needed to be updated to reflect requirements for the new MS4 permit. In addition Fort Belvoir was recently issued an individual Major Industrial Permit and requested that the updated Action Plan met the requirements for both programs.

Many of Fort Belvoir's existing policies, plans, and permits already addressed PCB contamination in an appropriate manner. Examples of this include, but are not limited to the Master Spill Plan, the Hazardous Waste Management and Minimization Plan, the MS4 Program Plan, and Stormwater Pollution Prevention Plans (SWPPPs) developed for the installation as well as some higher risk facilities.

Potential additions to existing stormwater plans and best management practices were discussed with DPW-ENRD. SCF worked to produce additional guidance and materials for a PCB awareness, education, and outreach program. The materials discussed are to be used in personnel training sessions, fact sheets are to be included in facility SWPPPs, and brochures were to be distributed to the public with a focus on the hunting community.

Step 2 – Review the 2013 PCB TMDL Action Plan to identify needed updates to site status

Source sites of PCB contamination were identified through a review of the approved 2013 PCB TMDL Action Plan, review of the DERP Restoration Repository, and discussions with the DPW-ENRD DERP. All 10 historical sites previously investigated by Tidewater in 2012 were re-evaluated with special consideration given to any additional remediation completed at each site.

An investigation and document review was conducted for any new contamination sites identified since the 2013 PCB Action Plan, for their potential to discharge to surface waters or come into contact with precipitation which may transport PCBs to surface waters.

Findings:

A review of historical documents and forward progress made at the 10 sites included in the original 2013 PCB TMDL Action Plan showed that many, if not all, of the sites have been fully remediated to either residential or industrial standards and have received concurrence from the EPA and/or VDEQ. An additional three (3) sites, discovered between 2012 and 2018, were identified to be included in the historical use analysis. Noted site status changes are summarized below

Site L03 is located within the HECSA complex which was acquired by the Army Corp of Engineers in 1981 at which point Fort Belvoir lost all accountability and is therefore no longer accounted for by the Fort Belvoir PCB TMDL Action Plan. L03 is considered a 'legacy' site and will remain within the narrative of the plan to prevent future confusion. In addition, results from Phase I investigation at L03 which occurred in 2013 confirmed that no residual PCBs were detected in soil borings. Site L47 underwent a Phase I investigation during the same time period and no PCBs were detected in soil borings from this site either.

The site referred to as Building 1495 in the 2013 PCB TMDL documents was picked up as a cleanup site under DERP and was renamed MP11 to ensure consistency in the repository nomenclature. MP11 is a confirmed source site of historic PCB contamination and has undergone stormwater characterization sampling under the 2013 PCB TMDL Action Plan to determine the mobility of the contamination. Because the site has been added to the Restoration Repository it is scheduled for a RCRA Facility Investigation (RFI) by the DERP to define the limits and extent of PCB contamination.

MP12 is a potential PCB source site which consists of in stream contamination near the new 249th Motorpool due to six (6) abandoned barrels that were found in or along the banks of the stream on September 18, 2015 during a wetland delineation.

MP13 is a potential source site. MP13 was used as a wash yard for construction equipment in conjunction with the Building 1495 (site MP11) remodeling project in August 2013. Stained soils and an odor were found during a project site inspection by the construction contractor conducting the work. As outlined in the contracted company's dig permit, DPW was alerted. While DPW personnel were on site, the contractor mentioned they had been using the areas as a wash yard although this was not an approved action on the site.

MP14 was discovered when the 911th Technical Rescue Engineer Company removed a hazardous material storage locker from the facility's parking lot in August of 2015. A rusted hole in the bottom of the locker was noticed upon removal as well as soil discoloration. No secondary containment was used with this storage locker.

Step 3 – Review and compile new and historical sampling records

Details:

The DERP Information Repository, facility investigation reports, and previous PCB TMDL Action Plan appendices were all accessed and reviewed. Any additional data found not listed in the 2013 PCB TMDL Action Plan was added to Appendix A. Only the newest site maps and sample summaries are presented in the updated appendices, the historical collection of maps will be maintained in the ENRD library within in the approved 2013 PCB TMDL Plan for future reference.

Findings:

Sites A23 (A04) and A24 have received two rounds of investigations since 2013 plan was approved. The investigations focused on the integrity of the concrete cap at A23 and soil cap at A24. Both caps were found to be in good condition. Sampling of a receiving stream channel for A24 was sampled in 2015 and had low level detections of Aroclor 1260 this area will be remediated under site A24a, no additional sampling was conducted at A23. Both sites reached No Further Action (NFA) and regulatory closure in 2014 on the condition that A24a be remediated down to the ecological screening level for PCB in soils. All tables and Appendix A were updated with discovered information.

No work was conducted at B03, B04, B09, B10, and L04 as these sites received regulatory closure with a status of Unlimited Use/Unlimited Exposure (UU/UE) in 2012. This sites were included in the 2014 Statement of Basis release by VADEQ for the RCRA Part B permit.

RCRA Phase I investigations were conducted at L03 and L47 in January 2013 and PCBs were not detected in any of the soil borings from either site. These sites received regulatory closure with a status of Unlimited Use/Unlimited Exposure (UU/UE) in 2013. This site was included in the 2014 Statement of Basis release by VADEQ for the RCRA Part B permit. All tables and Appendix A were updated with discovered information

N13 remains permitted as a one year hazardous waste storage facility under the Fort Belvoir RCRA Part B Permit under EPA ID VA7213720082. According to site records the facility has not accepted waste since 2011 and is mainly used to store unused drums, pallets, and tri-walls. This site is being considered for closure and possible demolition. No sampling has occurred at this facility

MP11 was previously referred to as building 1495. Multiple sets of both soil and water sampling has been conducted since site discovery in 2012. Surface water samples have been taken as per the 2013 PCB TMDL Action Plan in order to characterize stormwater leaving the site. Sampling data revealed fluctuations in PCBs detected, but had an overall decline since soil removal was done as a part of a utility project in the area. These fluctuations indicate that there may still be residual PCB discharges from the

site which will be further evaluated by DERP with a RCRA Facility investigation. All sample results are presented in Appendix A.

Site MP12 is an in-stream contamination that was discovered in 2015 during field work by ENRD staff. The locations where drums were found were sampled and showed very low level detections (below WQC) of Aroclor 1260. The site has been added to the DERP sites for further investigation. All preliminary sample results are presented in Appendix A.

Site MP13 was discovered in 2015 during an inspection of unassociated utility project. The area associated with MP13 was sampled in 2015 and 2016 and showed low level detections for Aroclor 1260 at multiple sampling locations. Due to the direct drainage pathways around the site MP13 requires stormwater characterization to determine whether it is a source site of PCB contamination to surface waters, water samples were taken in August 2017. All preliminary sample results are presented in Appendix A.

Site MP14 was discovered in 2015 and preliminary sampling was conducted shortly after and showed low level detections of Aroclor 1254 and 1260. The site has been added to the DERP sites for further investigation. All preliminary sample results are presented in Appendix A.

Step 4 – Evaluating current onsite conditions

Details:

Site visits were conducted to evaluate current onsite conditions for all historical and new sites by personnel from DPW-ENRD's Industrial Stormwater Program. Characteristics such as site drainage, potential PCB conveyance, existing structural Best Management Practices (BMPs), public access prevention, and the potential for stormwater to drain to a permitted stormwater outfall were assessed. Site specific BMPs were also recommended during these site visits.

Findings:

A23 – Former Coal Storage Area

The site is currently used as a materials storage and recycling sorting area. A concrete berm separating the recycling area from the wooded stream to the east and a grass berm separating the sorting area and the concrete cap over the historical PCB spill are currently in use on the site. Annual cap inspections are conducted and a dump permitting process is in place to regulate accepted materials onsite. There were multiple (four) inlets located in the middle of the facility that were found to be in disrepair, a work order is currently awaiting funding for a long term fix for these inlets. An additional project has been submitted for the design and construction of a covered area for material handling and stormwater management structures. The current BMPs along with the proposed projects were determined to be sufficient and no further actions were recommended.

A24 – Former DPDO Storage Area

The site is now naturally vegetated with thick brush and mature trees within the existing fence line preventing soil erosion and PCB migration with a soil cap over the historic PCB spill. Annual cap inspections and additional Resource Conservation and Recovery Act (RCRA) investigations are planned

for the receiving stream which will be remediated down to the ecological risk level. The site is not in use and there are no plans for land disturbance in the area. A fence and sign prevent unauthorized access to the site prevent future dumping. Existing BMPs are considered sufficient and no further recommendations are made.

B03 – Former Building 632 Hazardous Waste Storage Area
The building at this site (near sites B04 and L47) has been demolished and experienced remediation resulting in the regulatory closure in 1997 by VDEQ. This site is currently naturally vegetated with tall grass, medium brush, and mature trees. Because the site is no longer in use and all buildings and storage areas have been demolished, no BMPs are recommended.

B04 – Former Building 633 Hazardous Waste Storage Area
The building was removed from this site (near sites B03 and L47) and experienced remediation resulting in the closure of the site in 1997 by VDEQ. The site is now naturally vegetated with thick brush and mature trees. Because the site is no longer in use and the building and all storage areas have been demolished, no BMPs are recommended.

B09 – Former Building 1430 Transformer Storage Area
The area is now used as a material and generator storage area for the 249th Engineering Battalion the building no longer exists. No storm inlets exist within the storage lot, and swales are currently in use to catch stormwater. Because the building and all storage areas have been demolished and the impacted area is not exposed to precipitation, no additional BMPs are recommended.

B10 – Building 190 Former Indoor Storage Room
This is now used as a maintenance facility for government managed vehicles and part of the Transportation Motor Pool (TMP). The area of contamination was located internally within the building and therefore there is no potential to come in contact with precipitation. All building drains feed to sanitary and storm inlets located at the northeast corner of the facility to catch stormwater. BMPs were not recommended because the storage area no longer exists and the impacted area is not exposed to precipitation.

L03 – Former Asphalt Storage Pad near Building 2596
The site was not visited because it is no longer operated by Fort Belvoir. The site historically stored debris, drums, and transformers. In 2005, visual observations with limited access to the restricted site determined that the site was an unlikely source of PCB contamination due to lack of evidence of PCBs. Regulatory closure was reached in 2013. A concrete pad currently exists over the historical PCB spill and extensive remediation was conducted, the original storage pad has since been demolished and the site is now an access road. No additional BMP are recommended.

L04 – Hanger 3126 Former Outdoor Concrete Pad Transformer Storage Area
Historically this site stored transformers on a fenced-in concrete pad. The site had been renovated and is now a picnic and barbeque area. Regulatory closure was reached in 2012. A concrete pad exists over the historic PCB spill with a grassy area surrounding it limiting PCB migration to impaired waters. BMP recommendations were not made for this site because the storage pad has been demolished and the area has been completely renovated.

L47 – Former Concrete Pad Transformer Storage Area

The site is now a naturally vegetated area with tall grasses, medium brush, and young and mature trees. This site was previously determined unlikely to be a source site of PCB contamination due to its distance from an outfall and regulatory closure was reached in 2013. Because the site is no longer in use and all buildings and storage areas have been demolished, no BMPs are recommended.

N13 – Building 1490 Hazardous Material Storage Area

This site has been used as a hazardous waste storage facility since 1984 and regulatory closure was reached in 2012 because the site is not considered a SWMU under RCRA and is currently operating under a Part B permit. Secondary containment cells are in use and the structure is roofed preventing contact with precipitation. The site is currently being managed under the RCRA Part B Permit VA0092771 which requires weekly inspections, annual training, and facility operating records. The site has not accepted waste since 2011 and all containment cells look to be in good shape. Existing BMPs were determined to be sufficient and no addition recommendations were made.

MP11 – Former Building 1495 Outdoor Transformer Storage Area

The site has area has been completely renovated to include a new building and asphalting of all parking and loading/unloading zones. An asphalt cap now exists over the reported PCB spill but after stormwater characterization was conducted as per the 2013 PCB TMDL Plan, the site was confirmed as a source of PCB contamination. Although there has been multiple remediation efforts PCBs are still being detected in surface water. During the site visit it was noted that sediment accumulation was apparent in the concrete swale running along the northern fence line. These sedimentation areas have grass growing in them which is a sign that these have been there for a while. These sediment patches may be housing PCB contaminated soils which is being captured during sampling. It is recommended that these sediment patches be removed and monitoring continue at ISW-PCB-1495-SW1 to see if these are the cause. Additionally, the grass swale located along the southern fence line is showing signs of down cutting this area is also recommended to be restored. The site is currently operated as a <90 day hazardous waste storage facility and as such receives weekly inspections, annual training, and maintains facility operating records. The site is also receiving PCB monitoring, under this plan and additional RCRA investigations are planned to determine the limits and extent of contamination. While existing BMPs were determined sufficient, PCBs will continue to be monitored under this plan until RCRA site closure is achieved or Water Quality Criteria (WQC) is met for two consecutive sampling events as per the sampling plan. Although work to restore the stormwater conveyance system in the area is recommended it should be noted that coordination with DERP will be required.

MP12 – 249th Motorpool Area Stream Contamination

Six (6) abandoned barrels were found on this site during a wetland delineation in 2015 of an unnamed tributary which drains into Accotink Bay. Additional RCRA investigations are planned to determine the limits and extent of contamination. These drums are all located within the streambed, some of which look to be acting as check dams. BMP recommendations are not made for this site due to the nature of the in stream contamination. Investigation and remediation under DERP should determine potential site BMPs once the extent of contamination has been delineated.

MP13 – Theote Road/Warren Road Wash Yard Area

This site was used as an unauthorized equipment wash yard by a construction contractor in 2014. The site is one large grassy patch surrounded by Warren, Theote, and Marrow roads. There are noticeable soil piles along Warren road which have been stabilized and show no signs of erosion. The site area along Theote is much flatter and is also stabilized. Drainage across the site is conveyed via sheet flow to two culverts, one under Marrow road to the west and one under Theote Road to the east. The eastern culvert drains to a stream which flows to Gunston Cove, this culvert outlet is located south of the vet clinic but is difficult to find due to heavy vegetation including briers. The culvert inlet is almost all the way buried and therefore water pools in this area. The western culvert drains to a concrete swale before crossing Warren road and discharging to a heavily wooded area. No BMPs are currently in use onsite and were determined insufficient in addressing PCB concerns. Stormwater characterization sampling was recommended for the site. Until characterization or site remediation is complete, traffic barriers are recommended to prevent unauthorized vehicle access and further contamination from wash waters. Site specific BMPs should be reevaluated and updated once characterization and/or remediation is complete.

MP14 – Building 2476 Former Hazmat Storage Locker

Building 2476 was built as a Vehicle Maintenance Shop/Motorpool. In 2015, the hazardous material storage locker was removed from the parking lot and a rusted hole was found in the bottom of the locker by personnel. The storage locker did not have secondary containment. The location where the storage locker used to stand is right along the corner at the southeastern part of the fence along the unpaved road south of Burbeck Road. Most of the area associated with building 2476 is asphalted with about a 3 foot grass buffer surrounding the fence. No direct stormwater conveyance is located in the area, grassed swales are used to catch stormwater and a grassy area surrounds the impacted area limiting PCB migration to impaired waters. Additionally the site is on the DERP list for RCRA Facility Investigation to determine the limits and extent of contamination. Existing BMPs were determined sufficient and no additional BMP are recommended until further information on site conditions are made.

Inventory Conclusions

The review of historical data found that many sites were closed as listed in the 2013 PCB TMDL Action Plan and remain in similar conditions as that of the 2012 field evaluations. Since 2013 investigations and/or remediation have been completed at multiple sites with two sites reaching regulatory closure. Three additional sites have been found on Fort Belvoir that were not previously included in the DERP database, these site will be undergoing investigation and remediation under the Corrective Action Module of the RCRA Part B Permit.

All data sets have been revised with the most up-to-date data available. Narrative descriptions for each site has been updated to show conditions as of December 2017. Methodology previously used by Tetratech in 2012 was adopted for this evaluation for the sake of consistency. The Table below shows a comparison of all data available. The 2018 PCB TMDL Action Plan update was conducted using all sites identified in the table below under the “2018 ENRD Review”.

Site ID	2018 ENRD Review	2013 PCB TMDL Action Plan	2012 ENRD Review	2008 Potomac Watershed PCB TMDL Study	2006 DEQ Correspondence - Long List	2006 DEQ Correspondence - Short List	Description	PCB Concern
A04	X	X			X		Former Coal Storage Area	Smaller area within A23 where a onetime PCB spill occurred
A23	X	X	X	X	X	X	Former Coal Storage Area	One time PCB Spill
A24	X	X	X		X	X	Former DPDO Storage Area	One time PCB Spill
B03	X	X	X		X		Former BLDG632 Hazardous Waste Storage Area	Included PCB contaminated materials
B04	X	X	X		X		Former BLDG633 Hazardous Waste Storage Area	Included PCB contaminated materials
B09	X	X	X		X	X	Former Building 1430 Transformer Storage Area	Transformers contained PCBs
B10	X	X	X		X		Building 190 Former Indoor Storage Room	PCB containing material stored in room
L03	X	X	X		X		Former Asphalt Storage Pad near Building 2596	Transformers possibly contained PCBs
L04	X	X	X		X	X	Hangar 3126 Former outdoor concrete pad transformer storage area	Transformers contained PCBs
L47	X	X	X		X		Former Concrete Pad Transformer Storage Area	Transformers contained PCBs
N13	X	X			X		Building 1490 Hazardous Material Storage Area	Included drums of PCB oils
MP11	X	X	X				Building 1495 Outdoor Transformer Storage Area	Transformers contained PCBs
MP12	X						249th Motorpool Area Stream Contamination	Drums contaminated with PCBs
MP13	X						Theote Road/Warren Road Wash Yard Area	Area used as a PCB Wash Yard
MP14	X						Building 2476 Former Hazmat Storage Locker	Included PCB contaminated materials

2020

APPENDIX B.2

HISTORIC PCB USE ANALYSIS

FORT BELVOIR

The following document by Tidewater Inc. was revised and updated by SES Construction and Fuel Services, LLC (SCF) in January 2018 and March 2020. All revisions made by SFC LLC are noted in red font or with a strikeout.

The purpose of the historic use analysis is to evaluate each site to determine the location of outfalls discharging to surface waters that would have the potential to discharge PCBs in stormwater during a rain event and recommend outfall sampling points. As a part of the 2017/2018 update all site data was reviewed and new sites were evaluated for their potential to discharge PCBs to surface waters.

In order for PCBs to discharge in stormwater they first must be present at the site and exposed to precipitation. If it can be concluded, based on multiple lines of evidence, that PCBs are no longer present at a particular site or exposed to precipitation, it is reasonable to conclude that PCBs would not be discharged in stormwater from that site. Additionally, if PCBs are still thought to be present at a site, even in very low concentrations, in order for PCBs to be discharged in stormwater from the site, drainage area analysis of the site would need to show a likely pathway for the stormwater discharging to surface waters via a system outfall.

The historic use and sampling point analysis proceeded as follows:

1. A rubric of parameter questions was established to use to evaluate each site.
2. Historical documents from each site were reviewed to evaluate each site using the list of established parameters.
3. A map showing the area of interest for the site, site elevations and the nearest stormwater outfalls and features, was created for each site.
4. Drainage to a specific water body was categorized for each site and determined to direct or indirect drainage.
5. Conclusions were drawn regarding each site and presented using a weight of evidence approach. At each site for which it is appropriate, sampling locations are suggested.

Drainage

A summary list was provided by DPW-ENRD that contains specification of site drainage. The list was confirmed and updated with new site data.

Watershed Delineation Project and Problem Site Descriptions including Maps and Photographs, Volumes I-III" dated 1 March 1999 prepared for Fort Belvoir (Performance Group, Inc. 1999) were used. Mr. Chris Landgraf of Performance Group, Inc. performed the work to verify drainage descriptions and receiving water bodies. In addition, the current stormwater GIS layers and map book were used to evaluate stormwater conveyance structures for each site.

The table below provides the DPW-ENRD description, the water body of interest to the PCB TMDL, and classification of the site as direct or indirect drainage. Direct drainage sites drain to a swale or tributary and then directly to named PCB TMDL receiving waters. Indirect drainage sites drain first to a swale or tributary, then to another swale or tributary or unnamed water body before finally draining to named PCB TMDL receiving waters. PCB TMDL receiving waters related to Fort Belvoir permitted outfalls include Gunston Cove, Accotink Creek, and Dogue Creek.

Site	Description	Drainage Description ~~from Fort Belvoir DPW-ENRD~~	Receiving PCB TMDL Water Body	Direct or Indirect Drainage
A23	Former Coal Storage Area	The closest receiving stream is an unnamed tributary (intermittent at the area closest to the site) to Gunston Cove.	Gunston Cove	Direct
A24	Former DPDO Storage Area	The closest receiving stream is an unnamed tributary (intermittent at the area closest to the site) to Accotink Bay.	Accotink Bay	Direct
B03	Former BLDG632 Hazardous Waste Storage Area	This location is on the top of a hill and drains to stormwater swales, to an unnamed tributary that drains to Gunston Cove.	Gunston Cove	Indirect
B04	Former BLDG633 Hazardous Waste Storage Area	This location is on the top of a hill and drains to stormwater swales, to an unnamed tributary that drains to Gunston Cove.	Gunston Cove	Indirect
B09	Former Building 1430 Transformer Storage Area	This location does not have any direct drainage swales but the closest stream is an unnamed tributary to Accotink Creek.	Accotink Creek	Indirect
B10	Building 190 Former Indoor Storage Room	This location does not have a direct stormwater discharge, but the curb inlets and sheet flow would eventually discharge to an unnamed tributary that flows into Accotink Bay.	Accotink Bay	Indirect
L03	Former Asphalt Storage Pad near Building 2596	This area would drain to stormwater swales, to an unnamed tributary, to the wetlands in Jackson Miles Abbott Wetland Refuge, to Mulligan Pond, to Dogue Creek, to the Potomac River.	Dogue Creek	Indirect
L04	Hangar 3126 Former outdoor concrete pad transformer storage area	This area would drain to drainage swales to an unnamed tributary to the Accotink Creek and to Accotink Bay.	Accotink Creek	Indirect
L47	Former Concrete Pad Transformer Storage Area	This location is on the top of a hill and drains to stormwater swales, to an unnamed tributary that drains to Gunston Cove.	Gunston Cove	Indirect
N13	Building 1490 Hazardous Material Storage Area	This area would drain to drainage swales to unnamed tributary to wetlands to Accotink Creek.	Accotink Creek	Indirect
~~Building 1495~~ MP11	Building 1495 Outdoor Transformer Storage Area	This area would drain to drainage swales to unnamed tributary to wetlands to Accotink Creek.	Accotink Creek	Indirect
MP12	249th Motorpool Area Stream Contamination	This area is located within a stream; the stream is an unnamed tributary to Accotink Bay	Accotink Bay	Direct
MP13	Theote Road/Warren Road Wash Yard Area	This area drainage via a culvert to an unnamed tributary to Gunston Cove	Gunston Cove	Direct
MP14	Building 2476 Former Hazmat Storage Locker	This area has no stormwater infrastructure; it would drain via sheet flow across an unpaved road to wetlands before going through a culvert and discharging to Accotink Creek	Accotink Creek	Indirect

Rubric Parameters

The rubric parameter questions were established to provide important details and help support developing lines of evidence regarding the status of each site. The same rubric, with some additional questions, and methodology was used to assess all sites for the 2017/2018 update to the PCB TMDL Action Plan.

The parameters used ~~are~~were as follows:

- Were PCBs confirmed present at the site and how?
- Was there observable staining likely or confirmed from PCB fluids?
- Was there a reportable PCB release and when?
- Has the site undergone remediation?
- Has the site undergone ~~demolition~~demolition/renovation?
- Is the site now wooded?
- Is the site still in use,
- Is it ~~but~~ now serving a different purpose?
- Was PCB data collected at the site?
- Has the site been recommended for closure in past evaluations?
- Has the site been closed through a regulatory agency and when?
- Has the final site determination been documented in a Statement of Basis?
- Were PCBs stored indoors or outdoors?
- Was the site a formal storage area?
- Was there secondary containment present at storage sites?
- Were transformers noted as being present at some point or established as the source of PCBs at the site?
- Does runoff from the site reach impaired water directly or indirectly?

For each site evaluated the following is presented:

Description

A short narrative description of site characteristics and previous remediation efforts, site changes, and structural practices installed at the site.

Completed Rubric

A table showing the completed rubric for each site is shown.

Site Conclusions

For each site a final conclusion is made in regards to the requirements of the PCB TMDL Action Plan. The conclusion is based on the historical site assessment and site visits and includes the weight of evidence available in support of a conclusion for no further action (NFA) required for the site in regards to the PCB TMDL Action Plan.

Maps

Maps were created showing the location of each site, site elevations and the nearest stormwater outfalls and features. These maps are presented in Appendix A. If the evaluation of the site resulted in a determination that characterization or monitoring is a required a map showing suggested sampling locations is presented below the rubric.

A23: Although site A23 is the site of a PCB release, it has undergone extensive remediation. Confirmation soil samples indicated that any remaining PCB levels were below regulatory limits (Sample Data provided in Appendix A). As such, the site as a SWMU has been recommended for no further action. With regard to the PCB TMDL, in the past PCBs were spilled and exposed to precipitation. However, the extensive remediation that took place at the site removed the bulk of exposed PCBs and created a barrier for PCB exposure by adding clean fill to areas that were excavated and installing a concrete cap. It is unlikely that any residual remaining PCBs present at the site would discharge to surface waters. PCBs are carried primarily by sediment and the concrete cap and partially wooded nature of the site would reduce potential for any potentially contaminated sediments to travel.

Site	**A23**
Description	Former Coal Storage Area
Was the site a formal storage area?	Yes
Were transformers present within the storage area?	Yes
Were PCBs confirmed to be present at the site?	Yes
Were PCBs stored indoors or outdoors?	Outdoor
Was secondary containment present at storage sites?	No
Was there observable staining suggesting the presence of PCBs?	Yes
Was there a reportable PCB release and when?	Yes, ~~reported~~ 1979
Has the site undergone remediation?	Yes
Has the site undergone ~~demolition~~demolition/renovation?	N/A
Is the site now wooded?	Partially
Is the site still in use~~, but now serving a different purpose~~?	Yes
Is it being used for the same or different purpose?	Different
Was PCB soil data collected at the site?	Yes
Has the site been recommended for closure or No Further Action in past evaluations?	Yes, NFA
Has the site been closed through a regulatory agency and when?	Yes, 2014
Has the final site determination been documented in a Statement of Basis?	Pending
Does runoff from the site reach impaired water directly or indirectly?	Direct

Weight of Evidence:

- Extensive remediation,
- Sampling confirming PCBs are below regulatory limits,
- Received regulatory concurrence for NFA as a SWMU with land use controls to include inspection of the concrete cap, and
- Has a concrete cap and is partially wooded minimizing PCB transport~~.~~

Conclusion: No Further Action

A24: Although site A24 is the site of a PCB release, it has undergone extensive remediation. Confirmation soil samples indicated that any remaining PCB levels were below regulatory limits (Sample Data provided in Appendix A). As such, the site as a SWMU was ~~has been~~ recommended for no further action which the EPA approved in 2014 after the evaluation of the installed soil cap. During the investigation of the cap some low level detections of Aroclor 1260 were found in a drainage ditch near A24. The PCBs found in the drainage ditch soil did not exceed the TSCA threshold but did exceed EPA's Ecological Screening Level (ESL) for the masked shrew. The drainage ditch downgradient of SWMU A-24 will be investigated in the future under a separate action by Fort Belvoir as A24a. With regard to the PCB TMDL, in the past PCBs were spilled and exposed to precipitation. However, the extensive remediation that took place at the site removed the bulk of the exposed PCBs and protected against future exposure by placing clean fill in areas that were excavated. It is unlikely that any residual remaining PCBs present at the site would discharge to surface waters. PCBs are carried primarily by sediment and the thickly wooded nature of the site would reduce potential for any potentially contaminated sediments to travel. Additionally, the downgradient channel will receive further investigation and remediation to meet the ESL which would further diminish any movement of contaminated sediment.

Site	**A24**
Description	Former DPDO Storage Area
Was the site a formal storage area?	Yes
Were transformers present within the storage area?	Yes
Were PCBs confirmed to be present at the site?	Yes
Were PCBs stored indoors or outdoors?	Outdoor
Was secondary containment present at storage sites?	No
Was there observable staining suggesting the presence of PCBs?	Yes
Was there a reportable PCB release and when?	Yes, 1979
Has the site undergone remediation?	Yes
Has the site undergone demolition/renovation?	N/A
Is the site now wooded?	Yes
Is the site still in use?	No
Is it being used for the same or different purpose?	N/A
Was PCB soil data collected at the site?	Yes
Has the site been recommended for closure or No Further Action in past evaluations?	Yes, NFA
Has the site been closed through a regulatory agency and when?	Yes, 2014
Has the final site determination been documented in a Statement of Basis?	No
Does runoff from the site reach impaired water directly or indirectly?	Direct

Weight of Evidence:

- Extensive remediation,
- Sampling confirming PCBs are below regulatory limits,
- Fully wooded, and
- Clean fill and soil cap installed minimizing PCB transport.~~.~~

Conclusion: No Further Action

B03: Site B03 was a site used for PCB storage. No PCB releases were reported to have occurred at B03. The storage building has been demolished and the area remediated. The site has achieved regulatory closure and the closure report documents the absence of PCBs at the site. This site was included in the 2014 Statement of Basis for approval of final closure with no land use restrictions.

Site	**B03**
Description	Former BLDG632 Hazardous Waste Storage Area
Was the site a formal storage area?	Yes
Were transformers present within the storage area?	Unknown
Were PCBs confirmed to be present at the site?	No
Were PCBs stored indoors or outdoors?	Indoor
Was secondary containment present at storage sites?	Yes
Was there observable staining suggesting the presence of PCBs?	Unknown
Was there a reportable PCB release and when?	No
Has the site undergone remediation?	Yes
Has the site undergone demolition/renovation?	Yes
Is the site now wooded?	Yes
Is the site still in use?	No
Is it being used for the same or different purpose?	N/A
Was PCB soil data collected at the site?	No
Has the site been recommended for closure or No Further Action in past evaluations?	Yes, Closure
Has the site been closed through a regulatory agency and when?	Yes, 1997
Has the final site determination been documented in a Statement of Basis?	Yes, 2014
Does runoff from the site reach impaired water directly or indirectly?	Indirect

Weight of Evidence:

- PCB items kept indoors not exposed to precipitation,
- Storage building demolished and site remediated,
- Sampling confirms absence of PCBs,
- Regulatory closure achieved with no land use restrictions, and
- Indirect drainage path.

Conclusion: No Further Action

B04: Site B04 was a site used for PCB storage. No PCB releases were reported to have occurred at B0~~3~~4. The storage building has been demolished and the area remediated. The site has achieved regulatory closure and the closure report documents the absence of PCBs at the site. This site was included in the 2014 Statement of Basis for approval of final closure with no land use restrictions.

Site	**B04**
Description	Former BLDG633 Hazardous Waste Storage Area
Was the site a formal storage area?	Yes
Were transformers present within the storage area?	Unknown
Were PCBs confirmed to be present at the site?	No
Were PCBs stored indoors or outdoors?	Indoor
Was secondary containment present at storage sites?	Yes
Was there observable staining suggesting the presence of PCBs?	Unknown
Was there a reportable PCB release and when?	No
Has the site undergone remediation?	Yes
Has the site undergone demolition/renovation?	Yes
Is the site now wooded?	Yes
Is the site still in use?	No
Is it being used for the same or different purpose?	N/A
Was PCB soil data collected at the site?	No
Has the site been recommended for closure or No Further Action in past evaluations?	Yes, Closure
Has the site been closed through a regulatory agency and when?	Yes, 1997
Has the final site determination been documented in a Statement of Basis?	Yes, 2014
Does runoff from the site reach impaired water directly or indirectly?	Indirect

Weight of Evidence:

- PCB items kept indoors not exposed to precipitation,
- Storage building demolished and site remediated,
- Sampling confirms absence of PCBs,
- Regulatory closure achieved with no land use restrictions, and
- Indirect drainage path.

Conclusion: No Further Action

B09: Site B09 was a transformer storage area formerly located at Building 1430. While transformers were stored indoors and outdoors at this site, secondary containment was present. Building 1430 no longer exists and the area where the building once stood is now used as a storage area for trailers and large generators. Soil samples and wipe sample confirmed the absence of any PCBs at the site. This site was administratively closed in 2012 and included in the 2014 Statement of Basis for approval of final closure with no land use restrictions.

Site	**B09**
Description	Former Building 1430 Transformer Storage Area
Was the site a formal storage area?	Yes
Were transformers present within the storage area?	Yes
Were PCBs confirmed to be present at the site?	No
Were PCBs stored indoors or outdoors?	Both
Was secondary containment present at storage sites?	Yes
Was there observable staining suggesting the presence of PCBs?	No
Was there a reportable PCB release and when?	No
Has the site undergone remediation?	No
Has the site undergone demolition/renovation?	Yes
Is the site now wooded?	No
Is the site still in use?	Yes
Is it being used for the same or different purpose?	Different
Was PCB soil data collected at the site?	Yes
Has the site been recommended for closure or No Further Action in past evaluations?	Yes, Closure
Has the site been closed through a regulatory agency and when?	Yes, 2012
Has the final site determination been documented in a Statement of Basis?	Yes, 2014
Does runoff from the site reach impaired water directly or indirectly?	Indirect

Weight of Evidence:

- Secondary containment was present,
- ~~s~~Storage building demolished,
- S~~s~~ampling confirms absence of PCBs, ~~and recommended for NFA as a SWMU.~~
- Regulatory closure achieved with no land use restrictions, and~~.~~
- Indirect drainage path.

Conclusion: No Further Action

B10: B10 was an indoor storage area that was noted to have stored PCB containing equipment. Specifics of what was stored there and for how long are unknown. There were never any reported releases at this site, nor was staining suggesting leaks ever reported. The storage room also had secondary containment. B10 as a SWMU achieved regulatory closure in 1999. This site was included in the 2014 Statement of Basis for approval of final closure with no land use restrictions.

Site	**B10**
Description	Building 190 Former Indoor Storage Room
Was the site a formal storage area?	Yes
Were transformers present within the storage area?	Unknown
Were PCBs confirmed to be present at the site?	Yes
Were PCBs stored indoors or outdoors?	Indoor
Was secondary containment present at storage sites?	Yes
Was there observable staining suggesting the presence of PCBs?	No
Was there a reportable PCB release and when?	No
Has the site undergone remediation?	No
Has the site undergone demolition/renovation?	No
Is the site now wooded?	No
Is the site still in use?	Yes
Is it being used for the same or different purpose?	Different
Was PCB soil data collected at the site?	No
Has the site been recommended for closure or No Further Action in past evaluations?	Yes, Closure
Has the site been closed through a regulatory agency and when?	Yes, 1999
Has the final site determination been documented in a Statement of Basis?	Yes, 2014
Does runoff from the site reach impaired water directly or indirectly?	Indirect

Weight of Evidence:

- ~~Any~~ PCB containing equipment was stored indoors and not exposed to precipitation,
- S~~s~~econdary containment was present,~~ and~~
- R~~r~~egulatory closure achieved ~~for SWMU site.~~with no land use restrictions, and
- Indirect drainage path

Conclusion: No Further Action

L03: Site L03 was never an official storage area. Transformers were reported being located at the site and fluid staining the asphalt was also noted. ~~However, no known s~~ Sampling occurred at the site in 2013 and there is no documentation of PCB contamination being present. Additionally, the area that would have once been impacted has been ~~the asphalt pad has been demolished and~~ redeveloped as part of a parking lot. Given the lack of evidence of the site being an environmental concern, the site was recommended for NFA as a SWMU. The site has achieved regulatory closure in 2013 and closure report documents the absence of PCBs at the site. Additionally, this site is located within the boundaries of HECSA, land which was transferred to the Army Corp of Engineers in 1981 and does not receive coverage under Fort Belvoir permits.

Site	**L03**
Description	Former Asphalt Storage Pad near Building 2596
Was the site a formal storage area?	No
Were transformers present within the storage area?	Yes
Were PCBs confirmed to be present at the site?	Yes
Were PCBs stored indoors or outdoors?	Outdoor
Was secondary containment present at storage sites?	No
Was there observable staining suggesting the presence of PCBs?	Yes
Was there a reportable PCB release and when?	No
Has the site undergone remediation?	No
Has the site undergone demolition/renovation?	Yes
Is the site now wooded?	No
Is the site still in use?	No
Is it being used for the same or different purpose?	N/A
Was PCB soil data collected at the site?	Yes
Has the site been recommended for closure or No Further Action in past evaluations?	Yes, Closure
Has the site been closed through a regulatory agency and when?	Yes, 2013
Has the final site determination been documented in a Statement of Basis?	Yes, 2014
Does runoff from the site reach impaired water directly or indirectly?	Indirect

Weight of Evidence:

- PCB contamination never confirmed at the site,
- Concrete pad and old building have been demolished and the area entirely redeveloped,
- Regulatory closure achieved with no land use restrictions,
- Indirect drainage path, and
- This site is not regulated under Fort Belvoir's permit due to not being classified as urban and not being owned/operated by the permittees.

Conclusion: No Further Action

L04: Site L04 was a concrete pad that housed actively used transformers. While reports indicated leaking fluid was visible, soil samples collected later confirmed the absence of PCBs at the site. There is no longer evidence of the transformer area and the site was demolished and has been redeveloped as a picnic and barbeque area. L04 achieved regulatory closure in 2012 and was included in the 2014 Statement of Basis.

Site	**L04**
Description	Hangar 3126 Former outdoor concrete pad transformer storage area
Was the site a formal storage area?	Yes
Were transformers present within the storage area?	Yes
Were PCBs confirmed to be present at the site?	No
Were PCBs stored indoors or outdoors?	Outdoor
Was secondary containment present at storage sites?	No
Was there observable staining suggesting the presence of PCBs?	No
Was there a reportable PCB release and when?	No
Has the site undergone remediation?	No
Has the site undergone demolition/renovation?	Yes
Is the site now wooded?	No
Is the site still in use?	Yes
Is it being used for the same or different purpose?	Different
Was PCB soil data collected at the site?	Yes
Has the site been recommended for closure or No Further Action in past evaluations?	Yes, Closure
Has the site been closed through a regulatory agency and when?	Yes, 2012
Has the final site determination been documented in a Statement of Basis?	Yes, 2014
Does runoff from the site reach impaired water directly or indirectly?	Indirect

Weight of Evidence:

- Transformer area demolished and redeveloped,
- Sampling confirmed absence of PCBs,
- Regulatory closure was achieved with no land use restrictions, and
- Indirect drainage path

Conclusion: No Further Action

L47: Site L47 was a concrete pad that was used to store transformers until they could be tested for PCBs and then disposed of properly or moved to another storage area. The pad was located outside and transformers were exposed to precipitation. However, there were no reportable releases and even though stains on the pad were reported it is unknown whether the staining liquid contained PCBs or not since the transformers at the site were being held for PCB testing. The pad has since been removed and the site is now ~~t~~ wooded with thick brush. Sampling occurred at the site in January of 2013 and determined that no PCBs were detected in soils surrounding the pad location. -PCBs are carried primarily by sediment and the thickly wooded nature of the site would reduce potential for any potentially contaminated sediments to travel. Additionally, there are no stormwater drainage features nearby suggesting potential residual PCB contamination would not have a likely pathway to drain to surface waters. The site achieved regulatory closure and closure report documents the absence of PCBs at the site.

Site	**L47**
Description	Former Concrete Pad Transformer Storage Area
Was the site a formal storage area?	Yes
Were transformers present within the storage area?	Yes
Were PCBs confirmed to be present at the site?	Yes
Were PCBs stored indoors or outdoors?	Outdoor
Was secondary containment present at storage sites?	Unknown
Was there observable staining suggesting the presence of PCBs?	No
Was there a reportable PCB release and when?	No
Has the site undergone remediation?	No
Has the site undergone demolition/renovation?	Yes
Is the site now wooded?	Yes
Is the site still in use?	No
Is it being used for the same or different purpose?	N/A
Was PCB soil data collected at the site?	Yes
Has the site been recommended for closure or No Further Action in past evaluations?	Yes, Closure
Has the site been closed through a regulatory agency and when?	Yes, 2013
Has the final site determination been documented in a Statement of Basis?	Yes, 2014
Does runoff from the site reach impaired water directly or indirectly?	Indirect

Weight of Evidence:

- No reportable releases,
- Transformer pad area demolished,
- Fully wooded,
- Regulatory closure achieved with no land use restrictions, and
- Indirect drainage path

Conclusion: No Further Action

N13: Site N13 was an indoor storage area for hazardous materials including PCB containing materials. It is permitted and managed as a one year hazardous waste storage area under a RCRA Part B Permit. The site has not accepted any waste, hazardous or otherwise, since 2011. Because this site is permitted it was administratively closed in 2012. If the site were to be closed the approved Closure Plan within the permit would be implemented to include any sampling, decontamination, and/or remediation.

Site	**N13**
Description	Building 1490 Hazardous Material Storage Area
Was the site a formal storage area?	Yes
Were transformers present within the storage area?	Unknown
Were PCBs confirmed to be present at the site?	No
Were PCBs stored indoors or outdoors?	Indoor
Was secondary containment present at storage sites?	Yes
Was there observable staining suggesting the presence of PCBs?	No
Was there a reportable PCB release and when?	No
Has the site undergone remediation?	No
Has the site undergone demolition/renovation?	No
Is the site now wooded?	No
Is the site still in use?	Yes
Is it being used for the same or different purpose?	Same
Was PCB soil data collected at the site?	No
Has the site been recommended for closure or No Further Action in past evaluations?	Yes, NFA
Has the site been closed through a regulatory agency and when?	Yes, 2012
Has the final site determination been documented in a Statement of Basis?	Yes, 2014
Does runoff from the site reach impaired water directly or indirectly?	Indirect

Weight of Evidence:

- No reportable releases,
- PCB materials stored indoors and not exposed to precipitation,
- Secondary-containment is in place,
- Regulatory closure achieved due to permit coverage, and
- Indirect drainage path.

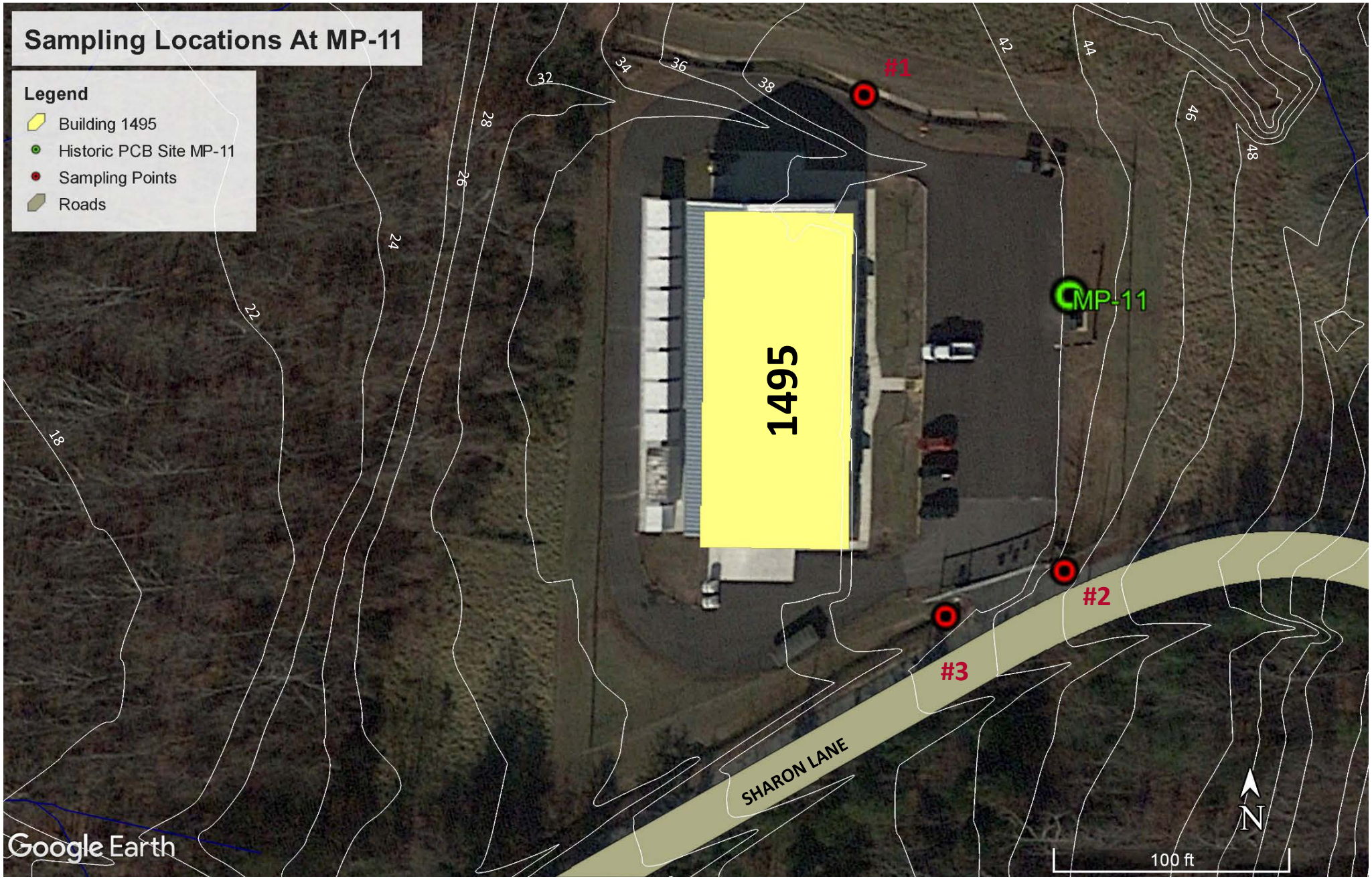
Conclusion: No Further Action

~~**Building 1495**~~ **MP11:** The Building 1495 site consists of the northeast corner of the parking lot for building 1495. PCB containing transformers were stored in the area and fluid was reported as leaking from the transformers during 2012. ~~Currently s~~Stains were~~are~~ visible on the asphalt at the site and containment materials had~~have~~ been placed around the affected areas. Portions of the site have been remediated through soil removal at impacted areas during a utility project. Additionally building 1495 was fully renovated in 2015 to include the parking area which was asphalted, which now acts as a cap over portions of the contaminated site. ~~The site has not yet been remediated.~~ The full extent of contamination from the leaking transformers has not yet been determined and ~~Additionally,~~ there are stormwater drainage features nearby that provide a likely pathway for potentially PCB contaminated stormwater to discharge to surface waters. Since PCBs are currently present at the site and there is a likely pathway this site requires additional investigation.

Site	**MP11**
Description	Building 1495 Outdoor Transformer Storage Area
Was the site a formal storage area?	No
Were transformers present within the storage area?	Yes
Were PCBs confirmed to be present at the site?	Yes
Were PCBs stored indoors or outdoors?	Outdoor
Was secondary containment present at storage sites?	No
Was there observable staining suggesting the presence of PCBs?	Yes
Was there a reportable PCB release and when?	Yes, 2012
Has the site undergone remediation?	Yes
Has the site undergone demolition/renovation?	Yes
Is the site now wooded?	No
Is the site still in use?	Yes
Is it being used for the same or different purpose?	Same
Was PCB soil data collected at the site?	Yes
Has the site been recommended for closure or No Further Action in past evaluations?	No
Has the site been closed through a regulatory agency and when?	No
Has the final site determination been documented in a Statement of Basis?	No
Does runoff from the site reach impaired water directly or indirectly?	Indirect

Recommended Sampling Locations: Two stormwater sampling locations were~~are~~ recommended at the Building 1495 site. The first location (#1) is north of the affected asphalt area at the ~~beginning of the~~ concrete channel that runs along the northern border of the property. Location #1 is located outside of the fenced area. The second location (#2) is south of the affected asphalt area just before the entrance to the culvert running under the access driveway to the parking lot. A backup sampling location at the exit of the culvert ~~was also~~ designated ~~for~~ location #3~~2~~ since the culvert entrance is located behind the access fence and may results in access problem. The exit of the culvert is outside of the fenced area. The recommended sampling locations are shown on the ~~aerial view of the site below~~map below.

Conclusion: Characterization has been completed and monitoring should continue until MP11 achieves regulatory closure or sampling determines that Water Quality Criteria has been met.



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MP12: Site MP12 is comprised of six (6) abandoned barrels which are located in and along the bank of the stream receiving discharge from the new 249th Engineering Battalion Motorpool. The drums were discovered during a wetland stream assessment, they are corroded, unlabeled, and randomly distributed in the stream channel. The source or former contents of the drums is unknown as the dumping was not authorized. Preliminary surface soil samples were collected near the abandoned drums. Sample results indicated the presence of some low level PCBs at two of the drum locations. The site is located in stream, does not discharge through the MS4 system, and is downstream from ISW RO-033. The site will be receiving a full RCRA facility investigation in order to determine the natural and extent of contamination.

Site	**MP12**
Description	249th Motorpool Area Stream Contamination
Was the site a formal storage area?	No
Were transformers present within the storage area?	No
Were PCBs confirmed to be present at the site?	Yes
Were PCBs stored indoors or outdoors?	Outdoor
Was secondary containment present at storage sites?	No
Was there observable staining suggesting the presence of PCBs?	No
Was there a reportable PCB release and when?	No
Has the site undergone remediation?	No
Has the site undergone demolition/renovation?	N/A
Is the site now wooded?	Yes
Is the site still in use?	No
Is it being used for the same or different purpose?	N/A
Was PCB soil data collected at the site?	Yes
Has the site been recommended for closure or No Further Action in past evaluations?	No
Has the site been closed through a regulatory agency and when?	No
Has the final site determination been documented in a Statement of Basis?	No
Does runoff from the site reach impaired water directly or indirectly?	Direct

Weight of Evidence:

- Site is located instream and therefore does not discharge through the permitted MS4
- Site will be investigated under DERP
- Initial sampling at the site showed PCBs below residential levels

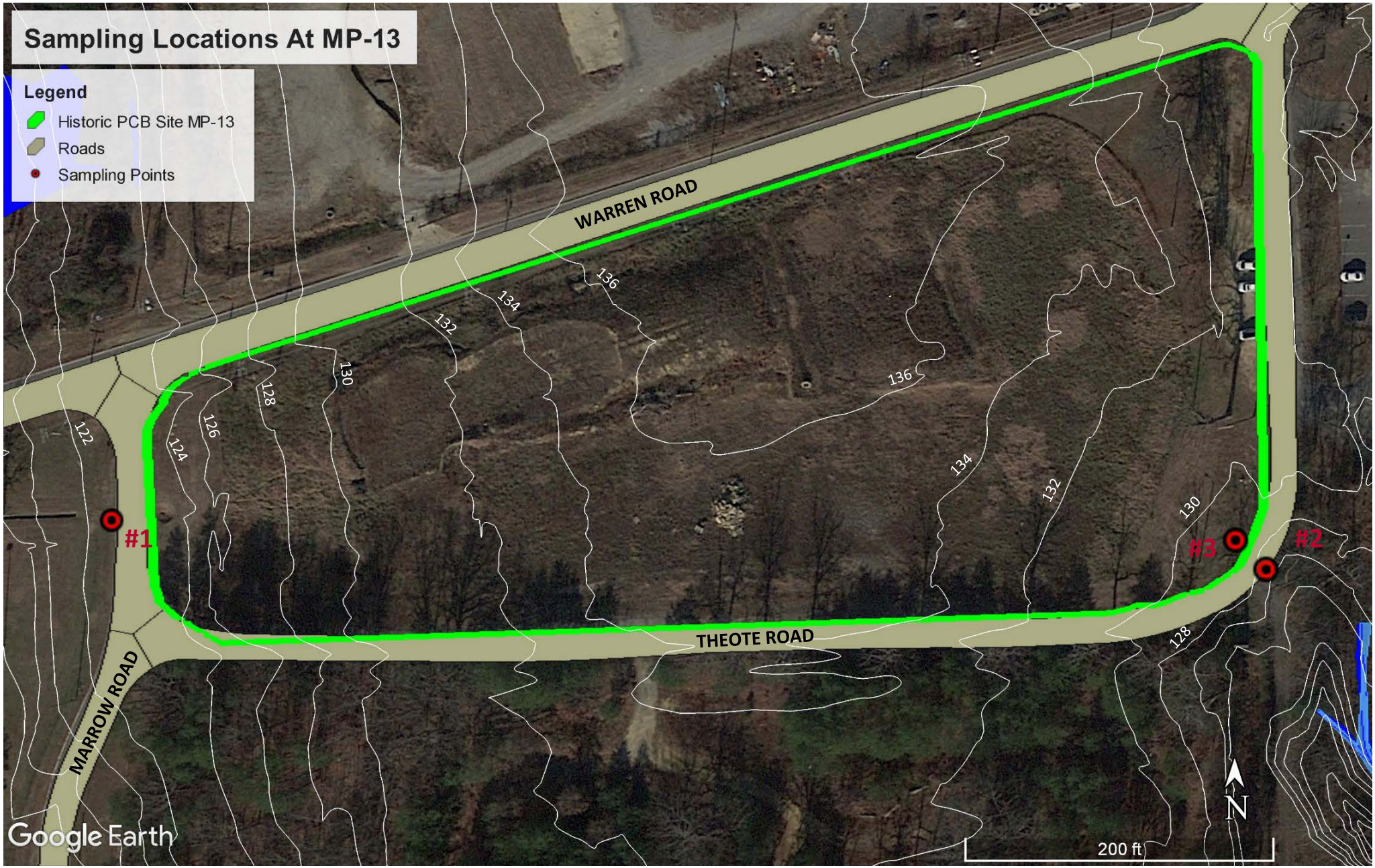
Conclusion: Monitor RCRA investigations completed by the DERP. PCB sampling results from Phase I RFI and final site determination to be included in MS4 Annual Report.

MP13: PCBs were confirmed at MP13 after Restoration Program conducted an initial site assessment brought upon when stained soils and odor were noted while inspecting an active construction project. Vehicles and equipment from the construction efforts were being washed within the unpaved area between Warren, Theote, and Marrow roads. The area was being used as a laydown area and wash yard. The stockpiles and the rest if the area were sampled and showed the presence of PCBs throughout the site. No remediation has occurred at the site and RCRA facility investigations will be conducted to determine the limits and extent of contamination. The site is fully vegetated with the presence of shrubs, the stockpile locations are still noticeable along Warren Road. Although drainage to the west of the site has a low potential to carry PCBs to impaired waters the western portion of the site discharges directly to a stream channel to Gunston Cove. Runoff from the site should be characterized in order to determine contribution from this site in regards to the PCB TMDL.

Site	**MP13**
Description	Theote Road/Warren Road Wash Yard Area
Was the site a formal storage area?	No
Were transformers present within the storage area?	No
Were PCBs confirmed to be present at the site?	Yes
Were PCBs stored indoors or outdoors?	Outdoor
Was secondary containment present at storage sites?	No
Was there observable staining suggesting the presence of PCBs?	No
Was there a reportable PCB release and when?	Yes, 2015
Has the site undergone remediation?	No
Has the site undergone demolition/renovation?	N/A
Is the site now wooded?	No
Is the site still in use?	No
Is it being used for the same or different purpose?	N/A
Was PCB soil data collected at the site?	Yes
Has the site been recommended for closure or No Further Action in past evaluations?	No
Has the site been closed through a regulatory agency and when?	No
Has the final site determination been documented in a Statement of Basis?	No
Does runoff from the site reach impaired water directly or indirectly?	Direct

Recommended Sampling Locations: Two stormwater sampling locations were recommended at the Warren Road/Theote road site. The first location (#1) is west of the affected wash yard area at the concrete channel that runs along Warren Road. Location #1 is a culvert outlet crossing Morrow Road before discharging to a heavily wooded area. The second location (#2) is east of the affected wash yard area just before the entrance to the culvert running under Theote Road. A backup sampling location at the entrance of the culvert designated location #3 since the culvert outlet is located within a large briar patch and may result in access problems. Location #3 is slightly crushed and may allow water from MP13 to puddle up which may show higher than expected PCB values due to sediment accumulation. The recommended sampling locations are shown on the map below.

Conclusion: Characterization of runoff required and monitoring of RCRA investigations and remediation until WCQ has been reached.



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MP14: Site MP14 is comprised of a hazardous material storage locker which was removed from the area in preparation for future projects in the area. The locker had been stored on top of grass and soil without secondary containment. After removing the hazmat locker, personnel found a hole in the bottom of the locker and saw discoloration in the soil where the locker was stored. The DERP conducted surface soil sampling of the stained soil that was under the storage locker and on either side of the storage locker which showed low level detections of PCB. There are no stormwater structures located near the site and the surroundings are heavily wooded. The DERP will be conducting a RCRA Facility Investigation (RFI) at site MP14 to assess and determine the nature and extent of the contamination at this site.

Site	**M14**
Description	Building 2476 Former Hazmat Storage Locker
Was the site a formal storage area?	Yes
Were transformers present within the storage area?	No
Were PCBs confirmed to be present at the site?	Yes
Were PCBs stored indoors or outdoors?	Outdoor
Was secondary containment present at storage sites?	Yes
Was there observable staining suggesting the presence of PCBs?	Yes
Was there a reportable PCB release and when?	No
Has the site undergone remediation?	No
Has the site undergone demolition/renovation?	Yes
Is the site now wooded?	No
Is the site still in use?	No
Is it being used for the same or different purpose?	N/A
Was PCB soil data collected at the site?	Yes
Has the site been recommended for closure or No Further Action in past evaluations?	No
Has the site been closed through a regulatory agency and when?	No
Has the final site determination been documented in a Statement of Basis?	No
Does runoff from the site reach impaired water directly or indirectly?	Indirect

Weight of Evidence:

- No stormwater structures in the area and therefore does not discharge through the permitted MS4
- Site will be investigated under DERP
- Initial sampling at the site showed PCBs below residential levels
- Indirect drainage path

Conclusion: Monitor RCRA investigations completed by the DERP. PCB sampling results from Phase I RFI and final site determination to be included in MS4 Annual Report

Site	A23	A24	B03	B04	B09	B10	L03	L04	L47	N13	MP11	MP12[1]	MP13	M14
Description	**Former Coal Storage Area**	**Former DPDO Storage Area**	**Former BLDG632 Hazardous Waste Storage Area**	**Former BLDG633 Hazardous Waste Storage Area**	**Former Building 1430 Transformer Storage Area**	**Building 190 Former Indoor Storage Room**	**Former Asphalt Storage Pad near Building 2596**	**Hangar 3126 Former outdoor concrete pad transformer storage area**	**Former Concrete Pad Transformer Storage Area**	**Building 1490 Hazardous Material Storage Area**	**Building 1495 Outdoor Transformer Storage Area**	**249th Motorpool Area Stream Contamination**	**Theote Road/Warren Road Wash Yard Area**	**Building 2476 Former Hazmat Storage Locker**
Was the site a formal storage area?	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	No	Yes
Were transformers present within the storage area?	Yes	Yes	Unknown	Unknown	Yes	Unknown	Yes	Yes	Yes	Unknown	Yes	No	No	No
Were PCBs confirmed to be present at the site?	Yes	Yes	No	No	No	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes
Were PCBs stored indoors or outdoors?	Outdoor	Outdoor	Indoor	Indoor	Both	Indoor	Outdoor	Outdoor	Outdoor	Indoor	Outdoor	Outdoor	Outdoor	Outdoor
Was secondary containment present at storage sites?	No	No	Yes	Yes	Yes	Yes	No	No	Unknown	Yes	No	No	No	Yes
Was there observable staining suggesting the presence of PCBs?	Yes	Yes	Unknown	Unknown	No	No	Yes	No	No	No	Yes	No	No	Yes
Was there a reportable PCB release and when?	Yes, 1979	Yes, 1979	No	No	No	No	No	No	No	No	Yes, 2012	No	Yes, 2015	No
Has the site undergone remediation?	Yes	Yes	Yes	Yes	No	No	No	No	No	No	Yes	No	No	No
Has the site undergone demolition/renovation?	N/A	N/A	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	N/A	N/A	Yes
Is the site now wooded?	Partially	Yes	Yes	Yes	No	No	No	No	Yes	No	No	Yes	No	No
Is the site still in use?	Yes	No	No	No	Yes	Yes	No	Yes	No	Yes	Yes	No	No	No
Is it being used for the same or different purpose?	Different	N/A	N/A	N/A	Different	Different	N/A	Different	N/A	Same	Same	N/A	N/A	N/A
Was PCB soil data collected at the site?	Yes	Yes	No	No	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Has the site been recommended for closure or No Further Action in past evaluations?	Yes, NFA	Yes, NFA	Yes, Closure	Yes, Closure	Yes, Closure	Yes, Closure	Yes, Closure	Yes, Closure	Yes, Closure	Yes, NFA	No	No	No	No
Has the site been closed through a regulatory agency and when?	Yes, 2014	Yes, 2014	Yes, 1997	Yes, 1997	Yes, 2012	Yes, 1999	Yes, 2013	Yes, 2012	Yes, 2013	Yes, 2012	No	No	No	No
Has the final site determination been documented in a Statement of Basis?	Pending	Pending	Yes, 2014	Yes, 2014	Yes, 2014	Yes, 2014	Yes, 2014	Yes, 2014	Yes, 2014	Yes, 2014	No	No	No	No
Does runoff from the site reach impaired water directly or indirectly?	Direct	Direct	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	Direct	Direct	Indirect
Total[2]											**2.25**	**1**	**1.8**	**0.625**

Cells shown in Orange are characteristics that have been determined to not effect the overall assessment for the site either through previous investigations or because currently available information

Cells shown in Red are characteristics that were determined to be negative in the assessment of the site and are signs of the potential release of PCBs

Cells shown in Green are characteristics that have been determined to positively impact the site and effectively remediate or mitigate effects from the potential release of PCBs

[1] Note that site MP12 is located within a non regulated area of Fort Belvoir and is not a discharge from Fort Belvoir's MS4 service area therefore this site will not be covered under the PCB TMDL Action Plan. MP12 will still be evaluated under the Restoration Program at Fort Belvoir to include any required investigations, mitigation, and/or monitoring.

[2] Note that the totals shown here are the ratio of characteristics that show a possibility to release PCBs into impared waters. A ratio higher than 1 shows that a site has a higher probability to potentially discharge PCBs due to historic contamination. These sites are recommended for characterization and/or monitoring.

2020

APPENDIX C

HISTORIC PCB SITES CLOSURE DOCUMENTS AND PROPOSED INVESTIGATION APPROACHES FOR NEW SITES

FORT BELVOIR

Summary of Historic PCB Site Closures and Investigations

SWMU	Name	Description	Approved Land Use	Regulatory Approval	Statement of Basis
A-23	Former Coal Storage Area PCB Spill Site	SWMU A-23 was identified as a release of approximately 197 liters of dielectric transformer coolant, containing PCBs, from two vandalized transformers. The transformers were stored on a concrete pad, located in the old coal storage yard (SWMU A-04). The release was reported to US EPA in 1979, and sampling was conducted in August 1980 and October 1980. Remedial actions took place in October 1982 and included the removal of 2,700 square feet of concrete and affected soil near the slab. Approximately 120 linear feet of sediment from the adjoining drainage ditch was also removed. The site was remediated to PCB concentrations below 50 mg/kg in accordance with the Toxic Substance Control Act. After remediation was completed, the entire site was backfilled and covered with concrete. In 2013, Fort Belvoir performed a fate and transport evaluation for residual concentrations of Aroclor 1260 at SWMU A-23. Upon conclusion of the fate and transport evaluation, Fort Belvoir recommended No Further Action for SWMU A-23. EPA Region 3 approved NFA with Land Use Controls at site A-23 in a letter dated March 17, 2014. In the March 2014 letter, EPA Region 3 specified that the required land use controls must include continuation of restricted access to the site and adjacent areas; and, monitoring, and as necessary, maintenance/repair to the existing concrete cap. In February 2016, Fort Belvoir submitted a Site Summary Report Addendum for site A-23 to EPA Region 3. The Site Summary Report Addendum included an assessment of the condition and thickness of the concrete cap at A-23. The cap was found to be in good condition during the prior 2015 investigation activities, with adequate thickness to prevent contact with, or migration of, underlying soil that may contain residual PCBs. EPA Region 3 approved the Site Summary Report Addendum in February 2016. Fort Belvoir will continue to administer Land Use Controls at A-23 to address the 2014 EPA closure requirements and restrict residential development at the site.	Industrial	3/17/2014	Pending
A-24	Former DPDO Storage Area PCB Spill Site	SWMU A-24 was identified as a release of dielectric transformer coolant due to improper storage of transformers in the Defense Property Disposal Office (DPDO) storage yard. Approximately 163 liters of coolant containing PCBs was released from two transformers into the surrounding soil. Reportedly, 1,600 square feet of soil were affected by the release. The release was reported to US EPA in 1979. A series of excavations and confirmation sampling events were performed at SWMU A-24 in 1983. The remediation of the soils continued until confirmation samples of the soil excavated indicated that PCB concentrations remaining in the soil were below the 50 mg/Kg action level (in accordance with the Toxic Substances Control Act). In 2013, Fort Belvoir performed a fate and transport evaluation for residual concentrations of Aroclor 1260 at SWMU A-24. Upon conclusion of the fate and transport evaluation, Fort Belvoir submitted a Site Summary Report recommending No Further Action with Land Use Controls for SWMU A-24. EPA Region 3 approved NFA with Land Use Controls at site A-24 in a letter dated March 17, 2014. In the March 2014 letter, EPA Region 3 specified that the required land use controls must include repair of the existing fence, gate and signage; assessment and repair of the existing soil cap, to include evaluation of any drainage features which may have eroded the cap (of particular concern is the small wetland area located on the	Industrial	Conditional Closure 3/17/14* Addendum Approval 2/8/16 *Drainage Ditch to be Investigated under A-24a	Pending Investigation of A-24a

Summary of Historic PCB Site Closures and Investigations

SWMU	Name	Description	Approved Land Use	Regulatory Approval	Statement of Basis
A-24 CONT.	Former DPDO Storage Area PCB Spill Site CONTINUED	eastern edge of the site); and, during this assessment, the installation is required to determine whether erosion conditions have caused migration of any residual PCB contamination off site. If off site migration has occurred, Fort Belvoir is required to address this in accordance with applicable regulations to ensure protection of human health and the environment. In February 2016, Fort Belvoir submitted a Site Summary Report Addendum for site A-24 to EPA Region 3. The Site Summary Report Addendum included an assessment of the condition and thickness of the soil cap at A-24. The cap was found to be in good condition during the prior 2015 investigation activities, with adequate thickness to prevent contact with, or migration of, underlying soil that may contain residual PCBs. Fence and sign repairs were also addressed during the 2015 investigation activities. EPA Region 3 approved the Site Summary Report Addendum in February 2016 with the understanding that the drainage ditch down gradient of SWMU A-24 will be investigated in the future under a separate action by Fort Belvoir. The PCBs found in the drainage ditch soil did not exceed the TSCA threshold but did exceed EPA's Regional Screening Level (RSL) for industrial use and ecologic screening for Arochlor 1260. Fort Belvoir will continue to administer Land Use Controls at A-24 to address the 2014 EPA closure requirements and restrict residential development at the site. In 2017, a contract was awarded to initiate additional investigation of the drainage ditch down gradient of site A-24 in accordance with the requirements stated by EPA Region 3.			
B-03	Building 632 Hazardous Waste Storage Area	SWMU B-03 was identified as an interim status concrete storage facility for hazardous waste located at Building 632. A closure report that documented the decontamination, demolition, sampling, characterization, and disposal of the unit was submitted in July 1996. The closure report recommended No Further Action. VDEQ approved this recommendation in a letter dated September 3, 1997. NFA was approved by EPA for all land use scenarios; thus, no land use controls are required.	Unlimited Use	9/21/2012	10/20/2014
B-04	Building 633 Hazardous Waste Storage Area	SWMU B-04 was identified as an interim status storage facility for hazardous waste located in Building 633. A closure report that documented the decontamination, demolition, sampling, characterization, and disposal of the unit was submitted in July 1996. The closure report recommended No Further Action. VDEQ approved this recommendation in a letter dated September 3, 1997. NFA was approved by EPA for all land use scenarios; thus, no land use controls are required.	Unlimited Use	9/21/2012	10/20/2014
B-09	Building T-1430 PCB Storage Area	SWMU B-09 was identified as a former PCB storage area at Building T-1430 that became operational in 1982. In 1997, soil samples around and underneath Building T-1430 were collected and analyzed for PCBs. Site investigations did not indicate the presence of contamination at the site. SWMU B-09 received regulatory approval from US EPA Region 3 for Administrative Closure.	Unlimited Use	7/6/2012	10/20/2014

Summary of Historic PCB Site Closures and Investigations

SWMU	Name	Description	Approved Land Use	Regulatory Approval	Statement of Basis
B-10	Building 190 Former PCB Storage Room	SWMU B-10 was identified as a room used to store PCB containing materials. Historical records for SWMU B-11 indicated that there were no documented releases or spills related to the storage of the hazardous material. As such, SWMU B-10 received regulatory concurrence from US EPA Region 3 for Administrative Closure.	Unlimited Use	7/6/2012	10/20/2014
L-03	Drum, Debris, and Transformer Storage Area	SWMU L-03 was identified as a Drum, Debris, and Transformer Storage Area located inside the service road adjacent to the western side of Building 2596. In January 2013, a Phase I RFI for SWMU L-03 was performed. Based on the findings in the Phase I investigation, Fort Belvoir received regulatory concurrence for No Further Action at SWMU L-03. NFA was approved by EPA Region 3 for all land use scenarios; thus, no land use controls are required.	Unlimited Use	12/17/2013	10/20/2014
L-04	Building 1338 - Leaking Transformers	SWMU L-04 was identified as three transformers located on concrete pads at Building 1338. Soil samples collected at SWMU L-04 did not indicate impact to the environment. The transformers and associated pads have been removed. Based on this, there was no evidence or indication that a release of hazardous materials/constituents occurred from this unit. As such, SWMU L-04 received regulatory concurrence from US EPA Region 3 for Administrative Closure.	Unlimited Use	7/6/2012	10/20/2014
L-47	600 Area Transformer Storage Pad	SWMU L-47 was identified as a 40-foot by 8-foot concrete pad located approximately 40 feet east of Buildings 627 and 632. In January 2013, a Phase I RFI was performed at SWMU L-47. Based on the findings in the Phase I investigation, Fort Belvoir received regulatory concurrence for No Further Action at SWMU L-47. NFA was approved by EPA Region 3 for all land use scenarios; thus, no land use controls are required.	Unlimited Use	12/17/2013	10/20/2014
N-13	Building 1490 Hazardous Materials Storage Area	SWMU N-13, Building 1490 was identified as a hazardous material storage facility at Building 1490. Building 1490 and the storage of hazardous materials within the structure are managed through Fort Belvoir's Permit for Hazardous Waste Storage. Review of available historical records indicates that no release or spill has occurred at this site. Additionally, the building has secondary containment structures in place and has no pathway for chemicals to be released into the environment. As such, SWMU N-13 received regulatory concurrence from US EPA Region 3 for Administrative Closure.	RCRA Permitted Facility	7/6/2012	10/20/2014

Summary of Historic PCB Site Closures and Investigations

SWMU	Name	Description	Approved Land Use	Regulatory Approval	Statement of Basis
MP-11	Former PCB Transformer Storage Area (B1495)	Building 1495 is used as Fort Belvoir's Hazardous Waste Storage and Processing Building. Between 2010 and 2012, transformers were stored in the northeast corner of the parking lot, adjacent to Building 1495. In 2012, the transformers appeared to be leaking and the surrounding soils were sampled. The sample results confirmed the presence of PCBs. In October 2014, the affected soils were removed and disposed of as part of the adjacent Building 1495 remodeling project. Confirmation samples collected at the time resulted in no detection of PCBs. Additionally, in August 2013, stained soils and odor were encountered while performing construction activities as part of the adjacent Building 1495 remodeling project. Samples of soil taken on 12, 13, and 27 of August 2013 indicated elevated levels of TPH and PCBs. Impacted soil was removed in July 2014; subsequent confirmation samples were taken which indicated no PCB contamination. In March 2013, Fort Belvoir finalized a PCB TMDL Action Plan as required by Fort Belvoir's MS4 Permit, which included the former PCB transformer storage area release in proximity of Building 1495. In November 2013, prior to the July 2014 soil removal, stormwater samples collected from two outfalls contributing to the industrial stormwater outfalls, exhibited PCBs above the TMDL for the Accotink Creek/Bay PCB TMDL. On 22 June 2015, soil samples were taken at eight (8) locations in the vicinity of the former PCB transformer storage area adjacent to Building 1495 in order to assess impacts to soil. Results of this sampling indicated the presence of PCBs in the surface soil. Currently, a RFI is underway at site MP-11 to assess and determine the nature and extent of the PCB contamination.	N/A	Pending RCRA Facility Investigation (RFI)	Pending RCRA Facility Investigation (RFI)
MP-12	Drum Investigation Area – Unnamed Stream Tributary near 249th Motor Pool	During routine stormwater and stream evaluations in October 2015, six 55-gallon drums were observed and located within a stream tributary passing to the south of the 249th Motor Pool facility at Pohick Road and Theote Road. The corroded, unlabeled drums were randomly distributed in the stream channel and dumping was unauthorized. The source or former contents of the drums is not known. Preliminary surface soil samples were collected near the abandoned drums. Sample results indicated the presence of Total Petroleum Hydrocarbons (Diesel Range and Oil Range) at levels above the Virginia Department of Environmental Quality reporting limits established under the Storage Tank Program. Currently, a RFI is underway at site MP-12 to assess and determine the nature and extent of contamination at this site.	N/A	Pending RCRA Facility Investigation (RFI)	Pending RCRA Facility Investigation (RFI)
MP-13	Theote Road/Warren Road Washout Area	Conversations with contractor personnel in 2015 led to the discovery that a site area on Fort Belvoir at Theote and Warren Roads was being utilized by various contractors to wash equipment that may have been utilized in the handling of hazardous wastes. The extent and duration of the site usage is not known. Preliminary surface soil samples were collected from the area of concern in December 2015 and February 2016. Preliminary sample results indicated the presence of Total Petroleum Hydrocarbons (Diesel Range and Oil Range), polycyclic aromatic hydrocarbon compounds, metals, pesticide, and low level polychlorinated biphenyl (Aroclor 1260) in excess of their respective regulatory screening criteria. Currently, a RFI is underway at site MP-13 to assess and determine the nature and extent of contamination at this site.	N/A	Pending RCRA Facility Investigation (RFI)	Pending RCRA Facility Investigation (RFI)

Summary of Historic PCB Site Closures and Investigations

SWMU	Name	Description	Approved Land Use	Regulatory Approval	Statement of Basis
MP-14	Building 2476 Hazardous Materials Storage Locker	Building 2476 was built in 1963 as a Vehicle Maintenance Shop/Motorpool and has been used by various agencies and Army companies for organizational vehicle maintenance. The 911th Technical Rescue Engineer Company has been using the building since 2008 for organizational vehicle maintenance. Defense Threat Reduction Agency used this building before the 911th also for organizational vehicle maintenance. The 911th removed a hazardous material storage locker that was located in the southwestern corner of the facility's parking lot. The locker had been stored on top of grass and soil without secondary containment. After removing the hazmat locker, personnel found a hole in the bottom of the locker and saw discoloration in the soil where the locker was stored. Fort Belvoir Directorate of Public Works (DPW) – Environmental and Natural Resource Division (ENRD) was notified about the potential soil contamination. Fort Belvoir ENRD found that the locker had contained unlabeled containers where the contents were unknown. On August 26, 2015, Fort Belvoir DPW-ENRD conducted surface soil sampling of the stained soil that was under the storage locker and on either side of the storage locker. Soil sample results indicated elevated detections of volatile organic compounds, semi-volatile compounds, total polycyclic aromatic hydrocarbons, pesticides, metals, and polychlorinated biphenyls above risk-based screening criteria. Currently, a RFI is underway at site MP-14 to assess and determine the nature and extent of the contamination at this site.	N/A	Pending RCRA Facility Investigation (RFI)	Pending RCRA Facility Investigation (RFI)

2018

A23: Former Coal Storage Area, PCB Spill Site

PCB TMDL ACTION PLAN – APPENDIX C-1

FORT BELVOIR

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
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www.deq.virginia.gov

Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4020
1-800-592-5482

August 5, 2016

VIA ELECTRONIC MAIL
Mr. Felix Mariani, Chief
US Army Garrison, Fort Belvoir
Directorate of Public Works
Environmental and Natural Resources Division
9430 Jackson Loop, Suite 100
Fort Belvoir, VA 22060-5116

Re: US Army Garrison, Fort Belvoir, Fort Belvoir, VA
EPA ID No. VA7213720082, Approval of Land Use Control Implementation Plan for Sites CC-A04/23 and CC-A24

Dear Mr. Mariani:

The Virginia Department of Environmental Quality, Office of Remediation Programs (DEQ) has reviewed and approves of the *US Army Garrison Fort Belvoir (Ft Belvoir) Land Use Control Implementation Plan for Sites CC-A04/23 and CC-A24 (Belvoir LUCP A23/A24)*, dated June, 2016. The revised Land Use Controls (LUCs) will be updated to include the following items as conditions of closure, and will be completed as soon as possible:

SWMU A-23

- Monitoring, and as necessary, maintenance/repair to the existing concrete cap at SWMU A-23

- Notations in the Installation Master Plan that future land use and construction at SWMU A-23 needs to be consistent with protection of human health and the environment

- Recordkeeping procedures to include regular reporting of the results of inspections.

SWMU A-24

- Notations in the Installation Master Plan that future land use and construction at

SWMU A-24 needs to be consistent with protection of human health and the environment

- Assessment and repair of the existing soil cap as needed at SWMU A-24, to include identification of any drainage features which may erode the cap.
- Monitoring, and as necessary, maintenance/repair to the existing fence at SWMU A-24
- Monitoring, and as necessary, maintenance/repair to the existing signage at SWMU A-24

Additionally it is noted in Section 5.1.1 that the following conditions will be met:

- FTBL is responsible for overall installation safety, which will include adherence to LUCs
- The Master Planning Division of DPW is responsible for all notations in the Master Plan
- FTBL is responsible for the approval of all excavation permits, which will be subject to the restrictions noted in the FTBL Master Plan
- FTBL will perform annual inspections of the cover, signage, and fencing. Annual Inspection Reports will be kept onsite and available for review should no issues be found with the LUCs during inspections. A Consolidated Inspection Summary Report will be prepared and submitted to US EPA and VDEQ every 5 years. If a corrective action is required to maintain LUCs, an Inspection Report for that year will be submitted to document the actions taken.
- FTBL will notify US EPA and VADEQ of land use changes that significantly impact the integrity of the LUCs within 60 days, or as soon as possible

DEQ concurs with the proposed 5 year reporting schedule with the provisions included for reporting if corrective action is required to be performed.

If you should have any questions regarding these matters or would like to schedule a meeting or teleconference to discuss them further, please contact me at (804) 698-4467 or by e-mail at Ashby.Scott@deq.virginia.gov.

Sincerely,

Ashby R. Scott
Hazardous Waste Permit Writer
Office of Remediation Programs

cc: Barbara Smith, EPA, Region III
Camila Goncalves Dias, FTBL MP
Wilamena Harback, FTBL MP
Jaroslav Sebek, FTBL MP
Brett Fisher, DEQ, CO
Central Hazardous Waste Files

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

March 17, 2014

Mr. Patrick McLaughlin
US Army Garrison, Fort Belvoir
Directorate of Public and Logistics
Environmental and Natural Resources Division
9430 Jackson Loop, Suite 100
Fort Belvoir, VA 22060-5116

Subject: EPA Approval No Further Action with Land Use Controls at **SWMUs A-23 and A-24**, U.S. Army Garrison, Fort Belvoir, VA

Dear Mr. McLaughlin:

The US Environmental Protection Agency (EPA) reviewed and approves the Site Summary Report for Solid Waste Management Units (SWMU) A-23 and A-24. These documents recommend **No Further Action (NFA) with Land Use Controls required for SWMUs A-23 and A-24.** It is understood that land use controls will include the following action items as a conditions of closure, and that these action items will be completed as soon as possible:

For SWMU A-23:

- Continuation of restricted access to the site and adjacent areas, which is currently being used for staging of large materials (scrap metal, furniture) for recycling.
- Monitoring, and as necessary, maintenance/repair to the existing concrete cap.

For SWMU A-24:

- Repair of the existing fence, gate and signage
- Assessment and repair of the existing soil cap, to include evaluation of any drainage features which may have eroded the cap. Of particular concern is the small wetland area located on the eastern edge of the site.
- During this assessment, the installation is required to determine whether erosion conditions have caused migration of any residual PCB contamination off site.
- If off site migration has occurred, Fort Belvoir is required to address this in accordance with applicable regulations to ensure protection of human health and the environment.

If you have any questions, feel free to contact me at 215-814-5786.

Sincerely,

Barbara Smith, Project Manager
Office of Remediation

Email copy: Amy Martin, Ft. Belvoir, MP
Laura Galli -VDEQ

SITE A-23

FORMER COAL STORAGE AREA PCB SPILL SITE

Description: This unit is located in the Former Coal Storage Area (SWMU Site A-4) south of Building 607 and west of Building 606. Site A-4 is an outdoor storage area for construction debris and recyclable material (see Figures 1 and 2). The A-23 unit consists of an unmarked spill site on the concrete pad, which makes up part of the A-4 site, where electrical transformers used to be stored (see Plate 1).

History: This unit was identified as the result of an incident reported by Fort Belvoir to the EPA in March 1979. According to reports, 197 liters of PCB coolant leaked from two vandalized electrical transormers onto a concrete pad, and into adjacent soils. Remediation efforts reportedly began in 1981 when the concrete pad was cleaned with solvent, and contaminated soils were excavated and transported to an approved disposal site located out-of-state. Post-remediation soil and concrete PCB concentrations were reportedly less than 50 parts per million.

Action Plan:

Based on the above, the following actions shall be taken to close this Solid Waste Management Unit:

1. Based on the definition and clarifications of SWMUs (presented in the RCRA Facility Assessment Guidance document and 55 Federal Register 30808, July 1990), one-time spills do not represent SWMU sites. Furthermore, file information indicates that this one-time spill has been remediated. Therefore, no further action is recommended at this site.

Note: Information reviewed during the development of this Closure Action Plan was selected from the following sources (where possible): the 1988 U.S. EPA RCRA Facility Assessment by A.T. Kearny, Inc; the 1992 Solid Waste Management Unit Study by CH2M Hill; site specific reports and analytical data from the Fort Belvoir Directorate of Public Works, Environmental and Natural Resource Division; facility personnel interviews; and site reconnaissance.

2018

A24: Former DPDO Storage Area

PCB TMDL ACTION PLAN – APPENDIX C-2

FORT BELVOIR

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
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www.deq.virginia.gov

Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4020
1-800-592-5482

August 5, 2016

VIA ELECTRONIC MAIL
Mr. Felix Mariani, Chief
US Army Garrison, Fort Belvoir
Directorate of Public Works
Environmental and Natural Resources Division
9430 Jackson Loop, Suite 100
Fort Belvoir, VA 22060-5116

Re: US Army Garrison, Fort Belvoir, Fort Belvoir, VA
EPA ID No. VA7213720082, Approval of Land Use Control Implementation Plan for Sites CC-A04/23 and CC-A24

Dear Mr. Mariani:

The Virginia Department of Environmental Quality, Office of Remediation Programs (DEQ) has reviewed and approves of the *US Army Garrison Fort Belvoir (Ft Belvoir) Land Use Control Implementation Plan for Sites CC-A04/23 and CC-A24 (Belvoir LUCP A23/A24)*, dated June, 2016. The revised Land Use Controls (LUCs) will be updated to include the following items as conditions of closure, and will be completed as soon as possible:

SWMU A-23

- Monitoring, and as necessary, maintenance/repair to the existing concrete cap at SWMU A-23

- Notations in the Installation Master Plan that future land use and construction at SWMU A-23 needs to be consistent with protection of human health and the environment

- Recordkeeping procedures to include regular reporting of the results of inspections.

SWMU A-24

- Notations in the Installation Master Plan that future land use and construction at

SWMU A-24 needs to be consistent with protection of human health and the environment

- Assessment and repair of the existing soil cap as needed at SWMU A-24, to include identification of any drainage features which may erode the cap.
- Monitoring, and as necessary, maintenance/repair to the existing fence at SWMU A-24
- Monitoring, and as necessary, maintenance/repair to the existing signage at SWMU A-24

Additionally it is noted in Section 5.1.1 that the following conditions will be met:

- FTBL is responsible for overall installation safety, which will include adherence to LUCs
- The Master Planning Division of DPW is responsible for all notations in the Master Plan
- FTBL is responsible for the approval of all excavation permits, which will be subject to the restrictions noted in the FTBL Master Plan
- FTBL will perform annual inspections of the cover, signage, and fencing. Annual Inspection Reports will be kept onsite and available for review should no issues be found with the LUCs during inspections. A Consolidated Inspection Summary Report will be prepared and submitted to US EPA and VDEQ every 5 years. If a corrective action is required to maintain LUCs, an Inspection Report for that year will be submitted to document the actions taken.
- FTBL will notify US EPA and VADEQ of land use changes that significantly impact the integrity of the LUCs within 60 days, or as soon as possible

DEQ concurs with the proposed 5 year reporting schedule with the provisions included for reporting if corrective action is required to be performed.

If you should have any questions regarding these matters or would like to schedule a meeting or teleconference to discuss them further, please contact me at (804) 698-4467 or by e-mail at Ashby.Scott@deq.virginia.gov.

Sincerely,

Ashby R. Scott
Hazardous Waste Permit Writer
Office of Remediation Programs

cc: Barbara Smith, EPA, Region III
Camila Goncalves Dias, FTBL MP
Wilamena Harback, FTBL MP
Jaroslav Sebek, FTBL MP
Brett Fisher, DEQ, CO
Central Hazardous Waste Files

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

February 8, 2016

E-mail copy

Mr. Felix Mariani, Chief
US Army Garrison, Fort Belvoir
Directorate of Public Works
Environmental and Natural Resources Division
9430 Jackson Loop, Suite 100
Fort Belvoir, VA 22060-5116

Subject: CC-A04/A23 and -A24 Site Summary Report Addendum – Draft Final US EPA, Region 3 Approval

Dear Mr. Mariani:

The U.S. Environmental Protection Agency, Region 3 (EPA) reviewed the Subject Report Addendum, dated October 2015. EPA approves the Report Addendum with the understanding that the drainage ditch downgradient of SWMU A-24 will be investigated in the future under a separate action by Fort Belvoir. The PCBs found in the drainage ditch soil did not exceed the TSCA threshold but did exceed EPA's Regional Screening Level (RSL) for industrial use and ecologic screening for Arochlor 1260.

The ecologic screening level (ESL) for PCB in soil that Region 3 is using is 0.332 ug/kg, based on food chain uptake to small receptors (shrew, etc.). Note that the ESL and RSL are screening levels and are not intended for use as clean-up levels.

If you wish to discuss this more, contact me at 215-814-5786 or smith.barbara@epa.gov.

Sincerely,

Barbara Smith
Project Manager
Office of Remediation

cc: Carol Creasap, FTBL-MP
Tara Mason, VDEQ

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

March 17, 2014

Mr. Patrick McLaughlin
US Army Garrison, Fort Belvoir
Directorate of Public and Logistics
Environmental and Natural Resources Division
9430 Jackson Loop, Suite 100
Fort Belvoir, VA 22060-5116

Subject: EPA Approval No Further Action with Land Use Controls at **SWMUs A-23 and A-24**, U.S. Army Garrison, Fort Belvoir, VA

Dear Mr. McLaughlin:

The US Environmental Protection Agency (EPA) reviewed and approves the Site Summary Report for Solid Waste Management Units (SWMU) A-23 and A-24. These documents recommend **No Further Action (NFA) with Land Use Controls required for SWMUs A-23 and A-24.** It is understood that land use controls will include the following action items as a conditions of closure, and that these action items will be completed as soon as possible:

For SWMU A-23:

- Continuation of restricted access to the site and adjacent areas, which is currently being used for staging of large materials (scrap metal, furniture) for recycling.
- Monitoring, and as necessary, maintenance/repair to the existing concrete cap.

For SWMU A-24:

- Repair of the existing fence, gate and signage
- Assessment and repair of the existing soil cap, to include evaluation of any drainage features which may have eroded the cap. Of particular concern is the small wetland area located on the eastern edge of the site.
- During this assessment, the installation is required to determine whether erosion conditions have caused migration of any residual PCB contamination off site.
- If off site migration has occurred, Fort Belvoir is required to address this in accordance with applicable regulations to ensure protection of human health and the environment.

If you have any questions, feel free to contact me at 215-814-5786.

Sincerely,

Barbara Smith, Project Manager
Office of Remediation

Email copy: Amy Martin, Ft. Belvoir, MP
Laura Galli -VDEQ

SITE A-24

FORMER DPDO STORAGE AREA - PCB SPILL SITE

Description: This outdoor unit is located immediately south of Building 1131 along Kingman Road (see Figures 1 and 2). The unit consists of an approximately 4-acre area that is currently fenced in and has been planted with Scotch pine. There are no markers to indicate the exact location of the former PCB spill.

History: According to previous reports, this unit was identified when 163 liters of PCB coolant spilled from improperly stored electrical transformers. The spill was reported in 1978, and remediation began in 1980. Remediation involved excavation and transportation of contaminated soils to an approved disposal site located out of state. Post-remediation concentrations of PCB in the soil were reported to be less than 50 parts per million. Currently, the entire lot where the PCB spill occurred has been replanted in Scotch pine trees and abandoned. Evidence of stressed vegetation was not noted.

Action Plan:

Based on the above, the following actions shall be taken to close this Solid Waste Management Unit:

1. Based on the definition and clarifications of SWMU's (presented in the RCRA Facility Assessment Guidance document and 55 Federal Register 30808, July 1990), a one-time spill does not represent a SWMU site. Furthermore, file information indicates that this one-time spill was remediated. Therefore, no further action is recommended at this site.

Note: Information reviewed during the development of this Closure Action Plan was selected from the following sources (where possible): the 1988 U.S. EPA RCRA Facility Assessment by A.T. Kearny, Inc; the 1992 Solid Waste Management Unit Study by CH2M Hill; site specific reports and analytical data from the Fort Belvoir Directorate of Public Works, Environmental and Natural Resource Division; facility personnel interviews; and site reconnaissance.

2018

B03: Former Building 632 Hazardous Waste Storage Area

PCB TMDL ACTION PLAN – APPENDIX C-3

FORT BELVOIR

CLOSURE APPROVAL
5 @ 600 AREA

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

George Allen
Governor

Becky Norton Dunlop
Secretary of Natural Resources

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Thomas L. Hopkins
Director

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1-800-592-5482

September 3, 1997

Lt. Col. Stacey K. Hirata
Directorate of Public Works
U.S. Army Garrison, Fort Belvoir
9430 Jackson Loop, Suite 107
Fort Belvoir, Virginia 22060-5130

Re: Buildings 625, 627, 632, 633, and 634
EPA ID# VA7213720082

Dear Lt. Col. Hirata:

On August 15, 1997, the closure units associated with the above-referenced buildings at your facility were inspected by Khoa Nguyen, a representative of the Virginia Department of Environmental Quality (Department). The inspection and required certifications show that closure had been performed in accordance with the protocol specified in the approved closure plan. The Department concurs with the conclusion of the closure reports, dated July 1996, that clean closure of Buildings 625, 627, 632, 633, and 634 at your facility has been achieved. Please note, however, that the U.S. Environmental Protection Agency retains the authority to address possible corrective action of continuing releases pursuant to the Hazardous and Solid Waste Amendments of 1984.

If you have any questions regarding this letter, please contact Khoa Nguyen of my staff at (804) 698-4128.

Sincerely,

Leslie A. Romanchik
for Thomas L. Hopkins

c: Khoa Nguyen - DEQ
Sanjay Thirunagari - DEQ
Debbie Miller - DEQ
Claire Ballard - DEQ

Post-It™ brand fax transmittal memo 7671 | # of pages ▸ 2

To Jeff Moran	From Khoa Nguyen
Co. Dewberry & Davis	Co. VDEQ
Dept.	Phone #
Fax # 703-849-0103	Fax # 804-6984234

Jon Ely - DEQ, NVRO
Robert Greaves - EPA Region III
Central Hazardous Waste File

Site: B-03 - Building 632 Hazardous Waste Storage Area

Description
SWMU B-03 was first identified in the 1988 Draft Phase II RCRA Facility Assessment (RFA) as an interim status 10 ft by 12 ft brick and concrete storage facility for hazardous waste. The structure was originally constructed in the 1930s to serve as a munitions storage bunker. The structure was then used from the early 1980s to 1990 as a storage facility for hazardous wastes such as, waste oil/Freon mixture, trichlorofluoroethane, photo sludge, and PCB-contaminated wastes from numerous sources.

Findings
During the closure activities at SWMU B-03, methylene chloride was found above screening levels; therefore, a health-based risk assessment was conducted and concluded that the risks associated with the maximum concentrations of methylene chloride were below risk-based standards for acceptable site closure. A closure report was prepared and sent to VDEQ in 1996 that recommended no further action.

Regulatory Response
A VDEQ letter dated September 3, 1997 affirmed that clean closure had been achieved for soils at the site. See **Attachment C** for a copy of the VDEQ closure letter and July 1996 Closure Report for Building 632.

SWMU Number	SWMU Name	Closure Report	NFA Closure Date
B-03	Building 632 Hazardous Waste Storage Area	Building 632 Closure Report, July 1996	VDEQ Letter September 3, 1997

2018

B04: Former Building 633 Hazardous Waste Storage Area

PCB TMDL ACTION PLAN – APPENDIX C-4

FORT BELVOIR

CLOSURE APPROVAL
5 @ 600 AREA

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

George Allen
Governor

Becky Norton Dunlop
Secretary of Natural Resources

Street address: 629 East Main Street, Richmond, Virginia 23219
Mailing address: P.O. Box 10009, Richmond, Virginia 23240
Fax (804) 698-4500 TDD (804) 698-4021
http://www.deq.state.va.us

Thomas L. Hopkins
Director

(804) 698-4000
1-800-592-5482

September 3, 1997

Lt. Col. Stacey K. Hirata
Directorate of Public Works
U.S. Army Garrison, Fort Belvoir
9430 Jackson Loop, Suite 107
Fort Belvoir, Virginia 22060-5130

Re: Buildings 625, 627, 632, 633, and 634
EPA ID# VA7213720082

Dear Lt. Col. Hirata:

On August 15, 1997, the closure units associated with the above-referenced buildings at your facility were inspected by Khoa Nguyen, a representative of the Virginia Department of Environmental Quality (Department). The inspection and required certifications show that closure had been performed in accordance with the protocol specified in the approved closure plan. The Department concurs with the conclusion of the closure reports, dated July 1996, that clean closure of Buildings 625, 627, 632, 633, and 634 at your facility has been achieved. Please note, however, that the U.S. Environmental Protection Agency retains the authority to address possible corrective action of continuing releases pursuant to the Hazardous and Solid Waste Amendments of 1984.

If you have any questions regarding this letter, please contact Khoa Nguyen of my staff at (804) 698-4128.

Sincerely,

Leslie A. Romanchik

for Thomas L. Hopkins

c: Khoa Nguyen - DEQ
Sanjay Thirunagari - DEQ
Debbie Miller - DEQ
Claire Ballard - DEQ

Post-It™ brand fax transmittal memo 7671 | # of pages ▸ 2

To Jeff Moran	From Khoa Nguyen
Co. Dewberry & Davis	Co. VDEQ
Dept.	Phone #
Fax # 703-849-0103	Fax # 804-6984234

Jon Ely - DEQ, NVRO
Robert Greaves - EPA Region III
Central Hazardous Waste File

Site: B-04 - Building 633 Hazardous Waste Storage Area

Description
SWMU B-04 was first identified in the 1988 Draft Phase II RCRA Facility Assessment (RFA) as an interim status storage facility for hazardous waste. The unit was described a 20 ft by 24 ft structure constructed of masonry blocks, with a concrete floor, and wood framed shingle roof that was originally constructed in the 1930s to serve as a munitions storage bunker. The structure was then used from the early 1980s to 1990 as a storage facility for non-regulated wastes (PCB-contaminated waste, waste paint solids, and bromoform from numerous sources.

Findings
Sampling during the closure activities conducted at the unit identified that chromium was statistically significant when compared to background samples. A health-based risk assessment was performed and concluded that the risks associated with the maximum concentrations of chromium were below risk-based standards of acceptability. A closure report that documented the decontamination, demolition, sampling, characterization, and disposal of the unit was submitted in July 1996.

Regulatory Response
A VDEQ letter dated September 3, 1997 affirmed that clean closure had been achieved for soils at the site
See **Attachment D** for a copy of the VDEQ closure letter and the July 1996 Closure Report for Building 633.

SWMU Number	SWMU Name	Closure Report	NFA Closure Date
B-04	Building 633 Hazardous Waste Storage Area	Building 633 Closure Report, July 1996	VDEQ Letter September 3, 1997

2018

B09: Former Building 1430 Transformer Storage Area

PCB TMDL ACTION PLAN – APPENDIX C-5

FORT BELVOIR

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

July 6, 2012

Mr. Patrick McLaughlin
US Army Garrison, Fort Belvoir
Directorate of Public and Logistics
Environmental and Natural Resources Division
9430 Jackson Loop, Suite 100
Fort Belvoir, VA 22060-5116

Subject: EPA Approval of: **Administrative Closure of 90 SWMUs Report, Main Post**, US Army Garrison, Fort Belvoir, VA

Dear Mr. McLaughlin:

The US Environmental Protection Agency (EPA) reviewed and approves the Subject Report, dated October 2011 for the Administrative Closure of 90 Solid Waste Management Units (SWMUs). EPA's approval also includes the two SWMUs that were added to the Report later, SWMUs B-10 and F-05.

The reasons for eliminating listed SWMUs from further investigation includes: absence of field evidence and/or record of contaminant releases, investigation and closure under Virginia or other regulations, and SWMUs no longer existing among other reasons.

If you have any questions, feel free to contact me at 215-814-3434.

Sincerely,

Barbara Smith, Project Manager
Office of Remediation

Email copy: Amy Martin, Ft. Belvoir, MP
Durwood Willis, VADEQ

RCRA Corrective Action Administration Closure Report
Solid Waste Management Units
Main Post
U.S. Army Garrison Fort Belvoir, Virginia

SWMU Number	SWMU Title	Site Description	Admin Closure Category	Justification
B-09	Building T-1430 - PCB Storage Area	This former PCB storage area at T-1430 became operational in 1982. The building was designated as a storage area for PCB containing electrical transformers. The transformers were stored on two metal pans until 1991, when they were removed. A secondary spill containment system consisting of a concrete berm and a sealed floor were installed in their place. A 55 gallon drum leaking oil on bare ground was observed during the 1992 CH2M Hill SWMU Study. In 1997 the soil samples around and underneath Building T-1430 were collected and analyzed for PCBs; however, no PCBs were detected above the detection limit during the laboratory analysis. It is unknown if the Installation sent the results from the environmental investigation to VDEQ or the U.S. EPA to request NFA. According to the 2005 VSI the building was removed sometime after 1997 and the site is no longer used for storage of PCB containing generators, but for newer portable non-PCB containing generators and the building foundation is used for a secondary containment storage area since the concrete berm still exists.	**AC 1:** Site investigation and corrective action are complete, and a closure report was prepared but not forwarded or approved by regulatory agency.	An environmental investigation was performed in 1997 at SWMU B-09. Soil samples were collected and analyzed for the presence of PCBs around former Building T-1430. Laboratory results showed that none of the soil samples had concentrations of PCBs above the laboratory's detection limits. This environmental investigation indicated the site had not been impacted. It is unknown to whether the results from the environmental investigation were ever sent to state or federal regulators to request closure for the site.

Administrative Closure Strategy
Solid Waste Management Units
Main Post
Fort Belvoir, Virginia

INTRODUCTION

Currently Fort Belvoir manages 204 Solid Waste Management Units (SWMUs) under a Corrective Action Program for SWMUs on Fort Belvoir's Main Post under a Resource Conservation and Recovery Act (RCRA) Part B, Permit# (EPA ID VA7213720082).

In 2006, Tetra Tech, Inc. was tasked by Fort Belvoir Directorate of Public Works, Environmental and Natural Resources Division (DPW-ENRD) to categorize each SWMU into one of the four corrective action classes based on the 2005 Visual Site Inspections (VSIs). All 204 SWMUs have been assigned one of four status categories based on the type action to be taken at each site. These categories include; No Further Action (NFA), Administrative Closure (AC), Confirmatory Sampling (CS), and Site Investigation (SI).

In 2009, Tetra Tech, Inc drafted the first volume of Administrative Closure Reports that included 15 separate SWMU sites, which was sent to and reviewed by U.S. EPA Region III Regulators for closure. The 15 sites all received closure between 2009 and 2010 and were removed from Fort Belvoir's RCRA Part B Permit.

During a meeting on December 7th, 2010 between representatives from Fort Belvoir DPW-ENRD, the U.S. Army Environmental Command (AEC), U.S. EPA Region III, and Tetra Tech agreed upon the drafting of a document that would briefly describe each of the 90 SWMUs that were deemed acceptable to be closed through the administrative closure process. Additionally, a brief justification for closure was included for each of the SWMU sites to support why each was categorized into one of six administrative closure categories listed below.

This second volume of Administrative Closures includes the 90 SWMU sites located on the Main Post of U.S. Army Garrison Fort Belvoir, VA that have been recommended to be closed through this administrative closure process. Below are the six administrative closure categories that each of the 90 SWMU sites fall into.

Administrative Closure (AC): SWMU sites that require action from Fort Belvoir and/or the regulators, however, all action is limited to report preparation, review, and approval for NFA. Six scenarios of site status belong in this recommendation category, as described below:

AC 1: Site investigation and corrective action are complete, and a closure report was prepared but not forwarded or approved by regulatory agency.

AC 2: SWMU site no longer exists due to significant site disturbance as a result of re-grading and construction activity.

AC 3: A site component, such as historical infrastructure, needs to be removed from the SWMU site, but no sampling is required.

AC 4: The SWMU is being managed or addressed under a separate program, such as Fort Belvoir's Petroleum Management Program (PMP), Military Munitions Response Program (MMRP), Virginia Pollution Discharge Elimination System (VPDES), National Pollution Discharge Elimination System (NPDES), or Clean Water Act (CWA).

AC 5: The site is an active permitted facility.

AC 6: Based on a review of historical documentation of this site, there is no evidence or indications that any type of release into environment has occurred at this site that would require further actions.

SITE B-9

BUILDING T-1430 PCB STORAGE AREA

Description: This unit was used to store electrical transformers that contained PCBs. (See Figures 1 and 2). The metal pans described in the RCRA Facility Assessment in 1988 and the follow-up assessment of 1991 have been removed. A concrete berm (6x6-inch) and equipment ramp were added sometime after the 1991 visit to provide for spill containment. The floor, berm, and ramp were coated with some type of sealant that has deteriorated leaving large areas of the concrete floor bare. The floors are 6-inch poured concrete with 6x6-inch, 10/10 wire mesh.

The unit currently has three 55-gallon drums of PCB's and construction materials on pallets located in the designated PCB storage area. New materials such as paint, developer, acids, and corrosives are currently being stored in an adjacent area inside the building. Two empty rooms in the rear of the building may have been used for waste storage in the past. An outside storage area has transformers and partially full 55-gallon barrels sitting on wooden pallets. One transformer was observed to be leaking oil on the bare ground (see Plate 1-5).

History: The unit became operational in 1982 and was used to store electrical transformers that contained PCBs. The transformers were placed on two metal pans approximately 5-feet by 3-feet by 1/2-feet high. The pans rested directly on the concrete floor inside of Building T-1430. The waste PCB contaminated transformer oil was picked up and removed on an on-call basis by a contractor for off-site disposal. There was evidence oil leaking from a transformer onto the floor which at the time was unbermed and not sealed.

Action Plan:

Based on the above, the following actions shall be taken to close this Solid Waste Management Unit.

(1) All materials currently stored within the storage building shall be removed and placed in an authorized storage area. Any waste materials identified during this phase of the SWMU closure action shall be appropriately disposed of by Fort Belvoir personnel. Any PCB wastes or suspect PCB wastes shall be moved to the Fort Belvoir PCB storage/accumulation area at Building 1490.

(2) The concrete floor in each room of the storage building shall be visually inspected for cracks and stains.

(3) Six wipe samples shall be collected and analyzed for PCB's from the surface of the concrete pad inside the storage building and from the area within the bermed PCB storage area at the locations shown in Figure 3.

(4) Six sample sets shall be collected from the concrete pad and the underlying soils at the locations shown in Figure 4. Each sample set shall consists of one core sample of the

concrete pad and one plug sample from the first 6-inch interval immediately beneath the concrete pad.

(5) If the visual inspection of the concrete pad indicates the presence of stains or cracks (which could potentially lead to contamination of the soil underneath the concrete pad) the sample location closest to the stain or crack shall be adjusted to collect a sample from the midpoint of the crack.

(6) Six samples shall be collected from the soil surrounding the concrete pad at the locations shown in Figure 5. Each sample shall consist of one plug sample taken from the 6-inch to 12-inch interval below the ground surface.

(7) All samples collected under this Action Plan shall be analyzed for the following: PCB's by Method 8080 (PCB only).

(8) All samples collected under this Action Plan shall be analyzed for Hazardous Waste Characterization in accordance with the Virginia Hazardous Waste Management Regulations.

(9) If the results of the wipe and soil samples indicate contamination above acceptable levels, a decontamination/remediation plan for the storage building and surrounding area shall be developed.

(10) If analysis of the samples collected under this SWMU action plan indicates that no contamination is present then Fort Belvoir DPW shall place a placard above the entrance way to the storage area indicating that no waste materials or chemicals are to be stored within the facility.

2018

B10: Building 190 Former Indoor Storage Room

PCB TMDL ACTION PLAN – APPENDIX C-6

FORT BELVOIR

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

July 6, 2012

Mr. Patrick McLaughlin
US Army Garrison, Fort Belvoir
Directorate of Public and Logistics
Environmental and Natural Resources Division
9430 Jackson Loop, Suite 100
Fort Belvoir, VA 22060-5116

Subject: EPA Approval of: **Administrative Closure of 90 SWMUs Report, Main Post**, US Army Garrison, Fort Belvoir, VA

Dear Mr. McLaughlin:

The US Environmental Protection Agency (EPA) reviewed and approves the Subject Report, dated October 2011 for the Administrative Closure of 90 Solid Waste Management Units (SWMUs). EPA's approval also includes the two SWMUs that were added to the Report later, SWMUs B-10 and F-05.

The reasons for eliminating listed SWMUs from further investigation includes: absence of field evidence and/or record of contaminant releases, investigation and closure under Virginia or other regulations, and SWMUs no longer existing among other reasons.

If you have any questions, feel free to contact me at 215-814-3434.

Sincerely,

Barbara Smith, Project Manager
Office of Remediation

Email copy: Amy Martin, Ft. Belvoir, MP
Durwood Willis, VADEQ

RCRA Corrective Action Administration Closure Report
Solid Waste Management Units
Main Post
U.S. Army Garrison Fort Belvoir, Virginia

SWMU Number	SWMU Title	Site Description	Admin Closure Category	Justification
B-10	Building 190 Former PCB Storage Room	SWMU B-10 was first identified in the 1988 Draft Phase II RCRA Facility Assessment (RFA) as a 35 ft by 15 ft room located in Building 190, the Vehicle Repair Shop. The room was used to store PCB containing materials from 1980 to 1981. The PCB materials were in either drums or within the original equipment until the unit ceased to be operational in 1981. The concrete floor had an impervious epoxy coating and the doorway had secondary containment controls (curbing). According to the 1992 CH2M Hill SWMU Study the room had been decontaminated after all the PCB materials were removed sometime after 1981. During the 2005 VSI of the unit, the room was observed to have been completely renovated and its dimensions had been decreased to 14.5ft by 8.5ft and new drywall had been installed. No evidence of the storage of PCBs was observed. There is no record noted in the file material of any reported release from this unit.	AC 6: Based on a review of historical documentation of this site, there is no evidence or indications that any type of release into environment has occurred at this site that would require further actions.	Historical records from SWMU B-10 indicate that there are no documented releases or spills related to the storage of PCBs from 1980 to 1981.Therefore, this site does not meet the definition of a SWMU. Additionally, Building 190 currently belongs to the Army Broadcasting Service, which moved into the building around 2002 - 2003 and did major renovations to it at that time.
B-11	**Building 317A - Hazardous Waste Storage Area**	SWMU B-11 was described as a three room cinderblock building that was used starting around 1985. The building was approximately 25 ft by 12 ft and was used for storage of waste solvents, acids, and gas cylinders generated by various laboratories and departments in the secured "300 Area". Only one room was used for the storage of the hazardous materials. The 1988 Phase II RFA indicted that there were no documented releases of spills related to the site and all waste materials were removed from Building 317's storage room in 1988. According to the VSI, Building 317 was demolished in the mid-1990s and a parking lot is now located on-site.	**AC 6:** Based on a review of historical documentation of this site, there is no evidence or indications that any type of release into environment has occurred at this site that would require further actions.	Historical records from SWMU B-11 indicate that there are no documented releases or spills related to the storage of the hazardous materials in the room located in Building 317A. Therefore, this site does not meet the definition of a SWMU. Additionally, Building 317A was demolished in the mid-1990s and a parking lot was built in its place.

Administrative Closure Strategy
Solid Waste Management Units
Main Post
Fort Belvoir, Virginia

INTRODUCTION

Currently Fort Belvoir manages 204 Solid Waste Management Units (SWMUs) under a Corrective Action Program for SWMUs on Fort Belvoir's Main Post under a Resource Conservation and Recovery Act (RCRA) Part B, Permit# (EPA ID VA7213720082).

In 2006, Tetra Tech, Inc. was tasked by Fort Belvoir Directorate of Public Works, Environmental and Natural Resources Division (DPW-ENRD) to categorize each SWMU into one of the four corrective action classes based on the 2005 Visual Site Inspections (VSIs). All 204 SWMUs have been assigned one of four status categories based on the type action to be taken at each site. These categories include; No Further Action (NFA), Administrative Closure (AC), Confirmatory Sampling (CS), and Site Investigation (SI).

In 2009, Tetra Tech, Inc drafted the first volume of Administrative Closure Reports that included 15 separate SWMU sites, which was sent to and reviewed by U.S. EPA Region III Regulators for closure. The 15 sites all received closure between 2009 and 2010 and were removed from Fort Belvoir's RCRA Part B Permit.

During a meeting on December 7th, 2010 between representatives from Fort Belvoir DPW-ENRD, the U.S. Army Environmental Command (AEC), U.S. EPA Region III, and Tetra Tech agreed upon the drafting of a document that would briefly describe each of the 90 SWMUs that were deemed acceptable to be closed through the administrative closure process. Additionally, a brief justification for closure was included for each of the SWMU sites to support why each was categorized into one of six administrative closure categories listed below.

This second volume of Administrative Closures includes the 90 SWMU sites located on the Main Post of U.S. Army Garrison Fort Belvoir, VA that have been recommended to be closed through this administrative closure process. Below are the six administrative closure categories that each of the 90 SWMU sites fall into.

Administrative Closure (AC): SWMU sites that require action from Fort Belvoir and/or the regulators, however, all action is limited to report preparation, review, and approval for NFA. Six scenarios of site status belong in this recommendation category, as described below:

> **AC 1:** Site investigation and corrective action are complete, and a closure report was prepared but not forwarded or approved by regulatory agency.
>
> **AC 2:** SWMU site no longer exists due to significant site disturbance as a result of re-grading and construction activity.
>
> **AC 3:** A site component, such as historical infrastructure, needs to be removed from the SWMU site, but no sampling is required.

AC 4: The SWMU is being managed or addressed under a separate program, such as Fort Belvoir's Petroleum Management Program (PMP), Military Munitions Response Program (MMRP), Virginia Pollution Discharge Elimination System (VPDES), National Pollution Discharge Elimination System (NPDES), or Clean Water Act (CWA).

AC 5: The site is an active permitted facility.

AC 6: Based on a review of historical documentation of this site, there is no evidence or indications that any type of release into environment has occurred at this site that would require further actions.

Soil Closure Approval @ 19 sites

COMMONWEALTH of VIRGINIA

James S. Gilmore, III
Governor

John Paul Woodley, Jr.
Secretary of Natural Resources

DEPARTMENT OF ENVIRONMENTAL QUALITY
Street address: 629 East Main Street, Richmond, Virginia 23219
Mailing address: P.O. Box 10009, Richmond, Virginia 23240
Fax (804) 698-4500 TDD (804) 698-4021
http://www.deq.state.va.us

Dennis H. Treacy
Director

(804) 698-4000
1-800-592-5482

May 21, 1999

Lt. Col. Stacey K. Hirata
Director of Installation Support
U.S. Army Garrison, Fort Belvoir
9430 Jackson Loop, Suite 107
Fort Belvoir, Virginia 22060-5130

Re: U.S. Army Garrison, Fort Belvoir
EPA ID# VA7213720082 and VA1210080906

Dear Lt. Col. Hirata:

On May 28, 1998, November 9, 1998, and May 3, 1999, several closure units at your facility, referenced above, were inspected by Khoa Nguyen, a representative of the Virginia Department of Environmental Quality (Department). The inspection and required certifications show that closure had been performed in accordance with the protocol specified in the approved closure plans.

The Department has also completed a review of the following closure submittals:

- Closure reports for Buildings 363 and 714, dated December 1996;
- Closure reports for Buildings 308, 322, 1957, 2021, and the Fire Training Area at Davison Army Airfield, dated November 1997;
- Closure reports for the Marina and Buildings 357A, 707, 1949/1950, dated December 1997;
- Closure reports for Buildings 181 and 324, dated January 1998;
- Closure reports for Buildings 190, 677, 1116, 1146, 2034, and 2585, dated February 1998;

- Supplementaries to the closure reports transmitted by Fort Belvoir letters dated August 4, 1998, November 20, 1998, February 24, 1999, and May 3, 1999.

The available information and the closure certifications indicate that the performance standards for clean closure have been achieved for soils at Buildings 181, 190, 308, 322, 324, 357A, 363, 677, 707, 714, 1116, 1146, 1949/1950, 1957, 2021, 2034, 2585, the Marina, and Davison Army Airfield.

Please note, however, that the U.S. Environmental Protection Agency retains the authority to address possible corrective action of continuing releases pursuant to the Hazardous and Solid Waste Amendments of 1984.

If you have any questions regarding this letter, please contact Khoa Nguyen of my staff at (804) 698-4128. Thank you for your cooperation during the closure process.

Very truly yours,

Leslie A. Romanchik
for Dennis H. Treacy

c: Khoa Nguyen - VDEQ
Sanjay Thirunagari - VDEQ
Charlotte Carroll -VDEQ
Jon Terry - VDEQ, NVRO
Claire Ballard - VDEQ
Melissa Porterfield - VDEQ
Robert Greaves - EPA Region III
Central Hazardous Waste File

SITE B-10

FORMER PCB STORAGE ROOM (BUILDING 190)

Description: This inactive unit is a 15- by 35 foot room within Building 190 (see Figures 1 and 2) that was modified for PCB storage. Modification reportedly included an epoxy coating over the concrete floor and construction of a concrete berm around the perimeter of the room. Currently, the room has been divided into two storage areas. The northern half of the unit is used for the storage of food service equipment and cleaning supplies while the southern half is used for the storage of miscellaneous radio broadcasting equipment. The remainder of Building 190 was reportedly used as a vehicle repair shop, but is currently used only for vehicle storage. The concrete berm noted in previous visits was not present during this site visit (see Plate 1).

History: This unit became operational in 1980 and ceased operations in 1981. During this time, PCBs were reportedly stored here in either drums or within the original equipment items (like electrical transformers or ballasts). According to previous reports, the epoxy coating on the floor is impervious to PCBs, and since the area was bermed, small releases would have been contained. Previous reports also indicate that the room was decontaminated after the PCB-containing materials were removed, although no closure sampling data were located to confirm decontamination. There is no record of any reported release from this unit noted in the file material.

Action Plan:

Based on the above, the following actions shall be taken to close this Solid Waste Management Unit:

1. All materials currently stored within the storage rooms shall be removed and placed in an authorized storage area. Any waste materials identified during this phase of the SWMU closure action shall be appropriately disposed of by Fort Belvoir personnel. Any PCB wastes or suspect PCB wastes shall be moved to the Fort Belvoir PCB storage/accumulation area at Building 1490.

2. The concrete floor in each of the storage rooms shall be visually inspected for stains and structural cracks.

3. Eight wipe samples shall be collected and analyzed for PCBs from the surface of the concrete pad inside the storage building and from the area within the bermed PCB storage area at randomly determined locations.

4. If the visual inspection of the concrete pad (within the storage rooms) indicates the presence of stains and structural cracks (which could potentially lead to contamination of the soil underneath the concrete pad), a sample set shall be collected from the midpoint of the crack or stain. Each sample set shall consist of one core sample of the

concrete pad and one plug sample from the first 6-inch interval immediately beneath the concrete pad.

5. All wipe samples collected under this Action Plan shall be analyzed for the following: PCBs by Method 8080 (PCB only).

6. All soil samples collected under this Action Plan shall be analyzed for PCBs by Method 8080 (PCB only) and Hazardous Waste Characterization in accordance with the Virginia Hazardous Waste Management Regulations.

7. If the results of the wipe and soil samples indicate contamination above acceptable levels, a Decontamination/Remediation plan for the storage building and surrounding area shall be developed.

8. If analysis of the samples collected under this SWMU action plan indicates that no contamination is present, Fort Belvoir DPW shall place a placard above the entrance way to the storage area indicating that no waste materials or chemicals are to be stored within the facility and this SWMU shall be considered closed.

Note: Information reviewed during the development of this Closure Action Plan was selected from the following sources (where possible): the 1988 U.S. EPA RCRA Facility Assessment by A.T. Kearny, Inc; the 1992 Solid Waste Management Unit Study by CH2M Hill; site specific reports and analytical data from the Fort Belvoir Directorate of Public Works, Environmental and Natural Resource Division; facility personnel interviews; and site reconnaissance.

2018

L03: Former Asphalt Storage Pad; Building 2596

PCB TMDL ACTION PLAN – APPENDIX C-7

FORT BELVOIR

DEPARTMENT OF THE ARMY
U.S. ARMY INSTALLATION MANAGEMENT COMMAND
US ARMY GARRISON, FORT BELVOIR
DIRECTORATE OF PUBLIC WORKS
9430 JACKSON LOOP, SUITE 100
FORT BELVOIR, VIRGINIA 22060-5116

REPLY TO
ATTENTION OF

IMBV-PW

25 January 2018

MEMORANDUM FOR Record

SUBJECT: Removal of Humphreys Engineer Center Support Activity (HECSA) from the 2013 – 2018 Municipal Storm Sewer System (MS4) Permit Coverage

1. HECSA was covered under the 2008 – 2013 Municipal Separate Storm Sewer System (MS4) Permit #VAR040093. The 2010 Census Urbanized Area Reference Map for Washington, DC-VA-MD, Sheet 6 was reviewed as part of the preparation of the 2013 – 2018 Registration Statement for renewal of the MS4 Permit and it was determined that HECSA is not located within an urbanized area. Therefore, MS4 permit coverage is not legally required. Additionally, HECSA is owned and operated by U.S. Army Corps of Engineers. Therefore, Fort Belvoir has no legal responsibility to cover HECSA under the Fort Belvoir MS4 Permit. Via email dated 5 April 2013, HECSA notified Fort Belvoir that their legal review determined that HECSA did not need a MS4 permit.

2. For the 2018 – 2023 Registration Statement for MS4 Permit renewal, the status of HECSA has not changed. Therefore, the statement in the MS4 Program Plan that HECSA is not covered under the MS4 Permit will remain as a point of clarification as to what is covered under the 2018 – 2023 MS4 Permit #VAR040093.

3. Point of Contact is Pamela Couch, Natural Resource Specialist, at 703-806-3406.

Pamela Couch
Installation Point of Contact

“LEADERS IN EXCELLENCE”

DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 1715
BALTIMORE, MARYLAND 21203

REPLY TO ATTENTION OF:
NABRE-M

8 April 1981

SUBJECT: Transfer of Accountability of 583 Acres of Land with Improvements at Fort Belvoir, Virginia, from Military Account to Civil Account

Commander
U. S. Army Engineer Center & Fort Belvoir
ATTN: ATZA-FER/Mr. James McGinty
Fort Belvoir, VA 22060

1. Inclosed for your information and records is a fully executed copy of DD Form 1354, xeroxed copy of Metes and Bounds Description and Real Estate Drawing NAD 37, Sheet 4 of 8, dated 18 September 1944.

2. This DD Form will serve as a credit voucher for the purpose of dropping accountability for the property from your records.

FOR THE DISTRICT ENGINEER:

G. R. BOGGS
Chief, Real Estate Division

3 Incl
as

Subject: *Report of termination of instrument.*

XXXXX:

19 APR 1981

TO: RE FILE

You are hereby notified of the termination of the following-described instrument in accordance with the terms thereof:

(*a*) *Symbol number:* DACA-31-4-71-159

(*b*) *Name and address of grantee:* Coastal Engineering Research Center
5201 Little Falls Road
Washington, D.C. 22060

(*c*) *Kind of instrument:* Permit

(*d*) *Location:* Fort Belvoir, VA

(*e*) *Effective date of termination:* 15 April 1981

(*f*) *How terminated:* property transferred to Corps of Engineers

(*g*) *Compliance with conditions of instrument as to vacation, removal of property, and restoration of premises:* Complied with.

David J Caruso
DAVID J. CARUSO
Chief, Real Estate Division

Inclosure:

Distribution: (as checked)

☐ *Division Engineer, Real Estate*
☐ OTHER:
Lessee
CDR, Fort Belvoir
RE FILE

M & D Branch, ATTN: R. Webb
P & C Branch, ATTN: E. Brown

ENG FORM 1 OCT 75 1368 EDITION OF APR 67 IS OBSOLETE. (ER 405—1—800)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

Mr. Patrick McLaughlin
U.S. Army Garrison, Fort Belvoir
Directorate of Public and Logistics
Environmental and Natural Resources Division
9430 Jackson Loop, Suite 100
Fort Belvoir, VA 22060-5116

December 17, 2013

Subject: EPA Approval of RFI Phase 1 Reports for
6 SWMUs on Main Post
U.S. Army Garrison, Fort Belvoir, VA

Dear Mr. McLaughlin:

The U.S. Environmental Protection Agency (EPA) reviewed the RCRA Corrective Action Facility Investigation Phase 1 Reports (RFIs) for 6 Solid Waste Management Units (SWMUs) located on the Main Post. EPA approves the Reports and the recommendations of **No Further Action (NFA)** with no Land Use Controls requirements necessary for each of the following SWMUs:

E-09 – RFI Final dated August 2013;

E-10 – RFI Final dated March 2009;

E-12 – RFI Final dated May 2013;

L-03 - RFI Final dated August 2013;

L-47 – RFI Final dated August 2013;

N-20 – RFI Final dated May 2013.

If you have any questions or comments, contact me at 215-814-5786 or smith.barbara@epa.gov.

Regards,

Barbara Smith, Project Manager
Office of Remediation

e-Copy: Amy Martin - Ft. Belvoir, MP
Wade Smith -VDEQ
Laura Galli -VDEQ

Semivolatile Organic Compounds

Benzo(a)anthracene was detected in all six primary soil boring samples and duplicate sample collected from the 2.5 foot to 4.5 foot interval at L03-SB01. Detected concentrations of benzo(a)anthracene ranged from 2.6 ug/Kg to 17 ug/Kg, which did not exceed the analyte's corresponding residential and industrial RSL values of 150 ug/Kg and 2,100 ug/Kg, respectively. Detected concentrations in the duplicate soil boring sample, L03-SB01(2.5-4.5ft)-DUP and in primary soil boring sample, L03-SB03(0.5-2.5ft), exceeded benzo(a)anthracene corresponding risk-based SSL DAF 1 benchmark of 10 ug/Kg, but did not exceed its risk-based DAF 10 benchmark of 100 ug/Kg. There are no federally enforceable MCL-based SSLs for benzo(a)anthracene. These exceedances of benzo(a)anthracene are slight and did not exceed their corresponding RSL values, as well as these detections are not considered significant as a DAF 10 benchmark is more appropriate at SWMU L-03

Benzo(a)pyrene was detected in the duplicated soil boring sample, L03-SB01(2.5-4.5ft)-DUP and L03-SB03(0.5-2.5ft) at concentrations of 14 ug/Kg and 12 ug/Kg. Both of these detected concentrations of benzo(a)pyrene did not exceed the analyte's corresponding residential and industrial RSL values of 15 ug/Kg and 210 ug/Kg. Additionally, none of the detected concentrations of benzo(a)pyrene exceeded its MCL-based DAF 1 and DAF 10 benchmarks of 240 ug/Kg and 2,400 ug/Kg. The two detected concentrations exceeded benzo(a)pyrene's corresponding risk-based SSL DAF 1 benchmark of 3.5 ug/Kg, but did not exceed its risk-based DAF 10 benchmark of 35 ug/Kg. The MCL-based SSLs for benzo(a)pyrene are legally enforceable and detected concentrations of this analyte at SWMU L-03 were substantially lower than these benchmark values; therefore, these detections are not considered significant.

Polychlorinated Biphenyls

No PCBs were detected in any of the subsurface soil boring samples collected during the investigation at SWMU L-03. Subsequently, no PCBs exceeded their corresponding RSL or SSL values. Therefore, no media cleanup standards are proposed or necessary at SWMU L-03.

Recommendation

The lack of significant detections of chemicals of concern in the soil boring samples collected at L-03, suggests that the former activities at the site have not affected the soils in the vicinity of SWMU L-03. This indicates that SWMU L-03 does not pose an unacceptable risk to human health or the environment.

The following recommendation was selected for SWMU L-03 from four possible courses of action which are stated in Fort Belvoir's RCRA Part B, Permit US EPA ID VA7213720082 Module IV, Site Wide Corrective Action;

> (1) No further action required, if the analytical results of sampling do not indicate the presence of hazardous waste or hazardous constituents, and the present physical condition and operating conditions of the SWMU/AOC are such that there is no likelihood of a release or additional release of hazardous waste or hazardous constituents from such SWMU.

SITE L-3

DRUM, DEBRIS AND TRANSFORMER STORAGE AREA

Description: No physical evidence of Unit L-3 or its former location was found during the Visual Site Inspection (VSI) conducted in conjunction with the preparation of this document (Reference 1). This former unit was reportedly located on the asphalt-paved parking area to the south of the wave tank at the Coastal Engineering Research Center (Reference 2, Figures 1 & 2). Facility personnel identified the approximate former location of Unit L-3 during the current VSI. The area formerly occupied by this unit is now an asphalt-paved parking lot and grassed area (Photograph 1). According to facility personnel, the former asphalt pad had recently been removed and replaced with the new asphalt pavement. No evidence of a release from this former unit was observed during the current VSI.

History: Reference 2 reported that five 55-gallon drums that appeared to contain an oily waste, two transformers on wooden pallets and other debris were stored on a cracked and stained asphalt pad. The transformers were reported as intact, but no information about their age or contents was obtained during that VSI.

During the VSI performed for the preparation of Reference 3, four empty 55-gallon drums and other apparent salvage materials were observed at the site (Photograph 2). A facility representative reported that the transformers had been removed in late 1990 or early 1991, and that he recalled that the PCB concentration in those transformers was around 50 parts per million (Reference 3). Reference 3 does not report evidence of a release at this site.

Action Plan: Because of the lack of detailed information about the precise location of this unit and the absence of existing physical evidence, **no further action** at this unit is recommended.

References: The following sources were reviewed and considered in preparation of this document:

1. Interview with site personnel, and VSI conducted September 1998.

2. *Draft Phase II RCRA Facility Assessment of the U.S. Army Engineer Center and Fort Belvoir, Virginia*, dated September 13, 1988, prepared by A.T. Kearney, Inc., of Alexandria, Virginia, for U.S. Environmental Protection Agency, Region III, Philadelphia, Pennsylvania.

3. *Solid Waste Management Unit Study, U.S. Army, Fort Belvoir*, dated July 1992, prepared by CH2M Hill, Reston, Virginia.

2018

L04: Former Outdoor Concrete Pad Transformer Storage Area

PCB TMDL ACTION PLAN – APPENDIX C-8

FORT BELVOIR

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

July 6, 2012

Mr. Patrick McLaughlin
US Army Garrison, Fort Belvoir
Directorate of Public and Logistics
Environmental and Natural Resources Division
9430 Jackson Loop, Suite 100
Fort Belvoir, VA 22060-5116

Subject: EPA Approval of: **Administrative Closure of 90 SWMUs Report, Main Post**, US Army Garrison, Fort Belvoir, VA

Dear Mr. McLaughlin:

The US Environmental Protection Agency (EPA) reviewed and approves the Subject Report, dated October 2011 for the Administrative Closure of 90 Solid Waste Management Units (SWMUs). EPA's approval also includes the two SWMUs that were added to the Report later, SWMUs B-10 and F-05.

The reasons for eliminating listed SWMUs from further investigation includes: absence of field evidence and/or record of contaminant releases, investigation and closure under Virginia or other regulations, and SWMUs no longer existing among other reasons.

If you have any questions, feel free to contact me at 215-814-3434.

Sincerely,

Barbara Smith, Project Manager
Office of Remediation

Email copy: Amy Martin, Ft. Belvoir, MP
Durwood Willis, VADEQ

RCRA Corrective Action Administration Closure Report
Solid Waste Management Units
Main Post
U.S. Army Garrison Fort Belvoir, Virginia

SWMU Number	SWMU Title	Site Description	Admin Closure Category	Justification
L-04	Building 1338 Leaking Transformers	The 1988 RCRA Phase II RFA described the site as three transformers located on concrete pads that had no identifiable PCB stickers located on them. One of the transformers appeared to be leaking oil onto its pad. The 1992 CH2M Hill SWMU study described six transformers located on separate pads within a fenced in area. According to the 2005 VSI the fluid in the transformers was tested in 1997 and it was found that the transformers did not contain any PCBs above the regulated quantity, although two of the transformers contained PCBs. The transformers were taken offline in 1998 per request by the Army. Soil samples collected around the location of the leaking transformer indicated that no PCBs were present in the soil. It was observed in 2005 that all the transformers and pads had been removed.	**AC 6:** Based on a review of historical documentation of this site, there is no evidence or indications that any type of release into environment has occurred at this site that would require further actions.	Soil samples collected at the site did not indicate impact to the environment. The transformers and associated pads have been removed."
L-06	Building 317 Hydrogen Fluoride Scrubber	This unit was first described in the 1988 Phase II RFA as a wet scrubber located on top of Building 317 used for neutralizing gases that contained hydrogen fluoride. The 1992 CH2M Hill SWMU Study described the unit as a 12 ft by 6 inch tube used for managing gases from laboratory etching processes. The unit had not been used since 1988, but had yet to be taken down. According to Installation representatives, the liquid drained through piping into a neutralization pit (SWMU I-02) next to Building 31, which was investigated during a RCRA Phase I RFI in 2008. According to the 2005 VSI, the scrubber and its infrastructure were removed during renovations to Building 317 in 1993.	**AC 6:** Based on a review of historical documentation of this site, there is no evidence or indications that any type of release into environment has occurred at this site that would require further actions.	The unit was removed in 1993 and had been inactive since 1988. All materials collected drained into a limestone neutralization pit (SWMU I-02) located on the side of Building 317, which was investigated in 2008. Results indicated that there were no environmental concerns in regards to the neutralization pit.

Administrative Closure Strategy
Solid Waste Management Units
Main Post
Fort Belvoir, Virginia

INTRODUCTION

Currently Fort Belvoir manages 204 Solid Waste Management Units (SWMUs) under a Corrective Action Program for SWMUs on Fort Belvoir's Main Post under a Resource Conservation and Recovery Act (RCRA) Part B, Permit# (EPA ID VA7213720082).

In 2006, Tetra Tech, Inc. was tasked by Fort Belvoir Directorate of Public Works, Environmental and Natural Resources Division (DPW-ENRD) to categorize each SWMU into one of the four corrective action classes based on the 2005 Visual Site Inspections (VSIs). All 204 SWMUs have been assigned one of four status categories based on the type action to be taken at each site. These categories include; No Further Action (NFA), Administrative Closure (AC), Confirmatory Sampling (CS), and Site Investigation (SI).

In 2009, Tetra Tech, Inc drafted the first volume of Administrative Closure Reports that included 15 separate SWMU sites, which was sent to and reviewed by U.S. EPA Region III Regulators for closure. The 15 sites all received closure between 2009 and 2010 and were removed from Fort Belvoir's RCRA Part B Permit.

During a meeting on December 7th, 2010 between representatives from Fort Belvoir DPW-ENRD, the U.S. Army Environmental Command (AEC), U.S. EPA Region III, and Tetra Tech agreed upon the drafting of a document that would briefly describe each of the 90 SWMUs that were deemed acceptable to be closed through the administrative closure process. Additionally, a brief justification for closure was included for each of the SWMU sites to support why each was categorized into one of six administrative closure categories listed below.

This second volume of Administrative Closures includes the 90 SWMU sites located on the Main Post of U.S. Army Garrison Fort Belvoir, VA that have been recommended to be closed through this administrative closure process. Below are the six administrative closure categories that each of the 90 SWMU sites fall into.

Administrative Closure (AC): SWMU sites that require action from Fort Belvoir and/or the regulators, however, all action is limited to report preparation, review, and approval for NFA. Six scenarios of site status belong in this recommendation category, as described below:

> **AC 1:** Site investigation and corrective action are complete, and a closure report was prepared but not forwarded or approved by regulatory agency.
>
> **AC 2:** SWMU site no longer exists due to significant site disturbance as a result of re-grading and construction activity.
>
> **AC 3:** A site component, such as historical infrastructure, needs to be removed from the SWMU site, but no sampling is required.

AC 4: The SWMU is being managed or addressed under a separate program, such as Fort Belvoir's Petroleum Management Program (PMP), Military Munitions Response Program (MMRP), Virginia Pollution Discharge Elimination System (VPDES), National Pollution Discharge Elimination System (NPDES), or Clean Water Act (CWA).

AC 5: The site is an active permitted facility.

AC 6: Based on a review of historical documentation of this site, there is no evidence or indications that any type of release into environment has occurred at this site that would require further actions.

SITE L-4

BUILDING 1338 LEAKING TRANSFORMERS

Description: SWMU Site L-4 is located outside the southwest wall of Building 1338 (now Buiding 3126) at Davison Army Airfield (Figures 1 & 2). There are currently three electrical transformers at this site, mounted on the southern end of an approximately 8- by 26-foot concrete pad that is adjacent to Building 1338 (Reference 1, Photograph 1). During the Visual Site Inspection (VSI) conducted in conjunction with preparation of this document, the former location of the three transformers comprising Unit L-4 was evident on the northern end of the concrete pad, which is visibly stained around the former transformer locations (Photograph 2). According to facility personnel, those three transformers were removed from service in 1997 after the cooling fluids were tested for PCBs. Bare soil and stressed vegetation were observed at the edge of the concrete pad during the current VSI; however, that soil did not appear stained.

History: Reference 2 reported that Unit L-4 consisted of three high voltage transformers on a concrete pad located to the south of Building 1338. Facility personnel did not know the age of the transformers or whether they contained PCB coolant, and no labels concerning PCB content were found on the transformers during that VSI. Reference 2 reported that one of the three transformers was leaking cooling fluid onto the concrete pad at a low flow rate.

Reference 3 reported that there were a total of 6 transformers at Site L-4, that the unit consisted of a leaking transformer on a fenced concrete pad, and that the pad was stained with oil (Photograph 3). No labels concerning the transformer's PCB content were observed during that VSI.

The cooling fluid from the three transformers comprising Unit L-4 was tested in 1997 and was determined to not contain PCBs at a regulated concentration (50 parts per million) (Reference 4). However, those test results did indicate that PCB's were present in the oil from two of the transformers. References 5 and 6 reported that the three transformers identified as Unit L-4 were off-line in 1998, and that two of the three appeared to be leaking and would be tested for the presence of PCBs prior to "turn-in" to the environmental office for disposal. Reference 6 states that the results of analyses on soil samples collected adjacent to the leaking transformers at Unit L-4 did not indicate the presence of PCBs.

The reports of leaking transformers indicate that a release has occurred at this site; however, Reference 6 provides documentation that a release of concern has not occurred at Site L-4.

Action Plan: Based on the above information, **no further actions** are recommended to close SWMU Site L-4.

References: The following sources were reviewed and considered in preparation of this document:

1. Interviews with Fort Belvoir personnel and VSIs conducted in September 1998 and April 1999.

2. Draft Phase II RCRA Facility Assessment of the U.S. Army Engineer Center and *Fort Belvoir, Virginia*, dated September 13, 1988, prepared by A.T. Kearney, Inc., of Alexandria, Virginia, for U.S. Environmental Protection Agency, Region III, Philadelphia, Pennsylvania.

3. *Solid Waste Management Unit Study, U.S. Army, Fort Belvoir*, dated July 1992, prepared by CH2M Hill, Reston, Virginia.

4. *Report of Analysis, Report No. 97-02-037*, dated February 14, 1997, by Gascoyne Laboratories, Inc., Baltimore, MD.

5. MEMORANDUM From: Department of the Army Communications-Electronics Command Research, Development & Engineering Center Night Vision & Electronic Sensors Directorate, 10221 Burbeck Road, Fort Belvoir, Virginia 22060-5806, AMSEL-RD-NV-OPS-FEM-SHE (40-5p).

6. MEMORANDUM From: Department of the Army, U.S. Army Garrison, Fort Belvoir, Directorate of Public Works, 9430 Jackson Loop, Suite 107, Fort Belvoir, Virginia 22060-5130 (ANFB-PW-200-1).

2018

L47: Former Concrete Pad Transformer Storage Area

PCB TMDL ACTION PLAN – APPENDIX C-9

FORT BELVOIR

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

Mr. Patrick McLaughlin
U.S. Army Garrison, Fort Belvoir
Directorate of Public and Logistics
Environmental and Natural Resources Division
9430 Jackson Loop, Suite 100
Fort Belvoir, VA 22060-5116

December 17, 2013

Subject: EPA Approval of RFI Phase 1 Reports for
6 SWMUs on Main Post
U.S. Army Garrison, Fort Belvoir, VA

Dear Mr. McLaughlin:

The U.S. Environmental Protection Agency (EPA) reviewed the RCRA Corrective Action Facility Investigation Phase 1 Reports (RFIs) for 6 Solid Waste Management Units (SWMUs) located on the Main Post. EPA approves the Reports and the recommendations of **No Further Action (NFA)** with no Land Use Controls requirements necessary for each of the following SWMUs:

E-09 – RFI Final dated August 2013;

E-10 – RFI Final dated March 2009;

E-12 – RFI Final dated May 2013;

L-03 - RFI Final dated August 2013;

L-47 – RFI Final dated August 2013;

N-20 – RFI Final dated May 2013.

If you have any questions or comments, contact me at 215-814-5786 or smith.barbara@epa.gov.

Regards,

Barbara Smith, Project Manager
Office of Remediation

e-Copy: Amy Martin - Ft. Belvoir, MP
Wade Smith -VDEQ
Laura Galli -VDEQ

7.0 SUMMARY AND CONCLUSIONS

In accordance with Fort Belvoir's RCRA B Permit, "The Phase I RFI shall contain conclusions and recommendations regarding the need for future investigation. The recommendations shall be adequately justified." The Phase I RFI may recommend, among other things:

> (1) No further action required, if the analytical results of sampling do not indicate the presence of hazardous waste or hazardous constituents, and the present physical condition and operating conditions of the SWMU/AOC are such that there is no likelihood of a release or additional release of hazardous waste or hazardous constituents from such SWMU.
>
> (2) Continued monitoring, where analytical results are below the practical quantitation limits (e.g., identified in 40 C.F.R. Part 264, Appendix IX, and 9 VAC 20-60-264, Appendix IX) and the presence of hazardous waste or hazardous constituents, together with the present physical condition and operating conditions of the SWMU, indicate a threat of a release of a hazardous waste or hazardous constituents in the future.
>
> (3) The recommendations of the nature and scope of a Phase II RFI to characterize the rate and extent of identified releases of hazardous waste, hazardous constituents, or hazardous constituent degradation products from SWMUs, groups of SWMUs/AOCs, or other areas of contamination.
>
> (4) Planning and implementing: interim measures at the facility. See permit condition IV.B."

During this environmental investigation conducted at SWMU L-47 on January 10, 2013, three soil borings designated L47-SB01 through L47-SB03 were advanced around the former transformer storage pad to determine if the site had been impacted by PCBs. Surface soil samples from the 0-2 feet bgs interval and subsurface soil samples from the 2-4 feet bgs interval were collected from each boring and sent to the laboratory for the analysis of PCBs. PCBs were not detected in any of the soil boring samples collected at SWMU L-47.

Recommendation

The absence of detected concentrations of PCB analytes in the soil boring samples collected at SWMU L-47, suggests that the former activities at the site have not affected the soils in the vicinity of SWMU L-47. This indicates that SWMU L-47 does not pose an unacceptable risk to human health or the environment.

The following recommendation for SWMU L-47 was selected from four possible courses of action which are stated in Fort Belvoir's RCRA Part B, Permit US EPA ID VA7213720082;

> (1) No further action required, if the analytical results of sampling do not indicate the presence of hazardous waste or hazardous constituents, and the present physical condition and operating conditions of the SWMU/AOC are such that there is no likelihood of a release or additional release of hazardous waste or hazardous constituents from such SWMU.

L-47
600 AREA TRANSFORMER STORAGE AREA

Description:

This site is located within the 600 Storage Area northeast of Building 628 and southeast of Building 627 (See Figure 1 and Plate 1) The site consists of a concrete pad 40 feet long by 8 feet wide with additional storage on wooden pallets to the south of the concrete pad. The concrete pad is surrounded by a grassy area, the wooden pallets rest on the bare ground. No start up dated could be determined and the unit is still active. The concrete pad and wooden pallets are the only physical structures or markings which denote the location of the site (See detailed Site Plan and Figure 2). Drainage from the site is to the east via the areas stormwater run-off system, no special drainage features are apparent.

History:

This site was identified as Solid Waste Management Unit (SWMU) during the 1988 RCRA Facility Assessment (RFA). The unit is used to store transformers prior to testing for PCB. Reportedly transformers testing positive were moved to a storage facility at Building T1430. At the time of this investigation there were two transformers stored on the concrete pad and two transformer stored on the wooden pallets. Past Studies have reported the storage of 55-gallon drums of "transformer oil" at the site.

Closure Actions:

Based on the above, the following actions will be taken to close the site:

1. Any transformers or wooden pallets stored at the site shall be tested and disposed of appropriately. The concrete pad shall then be removed and decontaminated. If decontamination of the concrete pad cannot be accomplished it shall be disposed of as contaminated waste.

2. Samples of the soils surrounding and underlying the concrete pad/wooden pallet area shall be collected at the locations shown on the sampling schematic for this site. At these locations, samples shall be collected from the surface of the sampling plane and at depths of 6", 12", 18" and 24" from the surface of the sampling plane. The samples from the surface of the sampling plane and the first 6" interval shall then be analyzed for Total Petroleum Hydrocarbons (TPH), Volatile Organics (VOC's), Semi-Volatile Organics, pesticides/PCB's and metals. If contamination is detected, analysis of the next interval shall be conducted until a clean interval is reached.

3. If analysis of the soil samples indicate that contamination is present, the soil shall be excavated to the depth indicated by the sample analysis. Excavated soils shall be appropriately containerized and disposed of. If contamination is detected at the 24" interval, the excavated pit shall be filed with clean material and a semi-permanent

location marker will be installed. The exact location and dimensions of the excavated area shall be noted on the Site Plan. A detailed contamination investigation and sampling plan shall be developed to determine the extent of the contamination. Based on the results of the contamination investigation a remedial action plan shall be developed for this site.

4. If analysis of the soil samples indicate that contamination is not present, the excavated area shall be filled with clean material.

5. Once the extent of contamination at this site is determined, a decision will be made as to the necessity for installing groundwater sampling and analysis wells.

2018

N13: Building 1490 Hazardous Material Storage Area

PCB TMDL ACTION PLAN – APPENDIX C-10

FORT BELVOIR

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

July 6, 2012

Mr. Patrick McLaughlin
US Army Garrison, Fort Belvoir
Directorate of Public and Logistics
Environmental and Natural Resources Division
9430 Jackson Loop, Suite 100
Fort Belvoir, VA 22060-5116

Subject: EPA Approval of: **Administrative Closure of 90 SWMUs Report, Main Post**, US Army Garrison, Fort Belvoir, VA

Dear Mr. McLaughlin:

The US Environmental Protection Agency (EPA) reviewed and approves the Subject Report, dated October 2011 for the Administrative Closure of 90 Solid Waste Management Units (SWMUs). EPA's approval also includes the two SWMUs that were added to the Report later, SWMUs B-10 and F-05.

The reasons for eliminating listed SWMUs from further investigation includes: absence of field evidence and/or record of contaminant releases, investigation and closure under Virginia or other regulations, and SWMUs no longer existing among other reasons.

If you have any questions, feel free to contact me at 215-814-3434.

Sincerely,

Barbara Smith, Project Manager
Office of Remediation

Email copy: Amy Martin, Ft. Belvoir, MP
Durwood Willis, VADEQ

Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

1111 E. Main Street, Suite 1400, Richmond, Virginia 23219
P.O. Box 1105, Richmond, Virginia 23218
(800) 592-5482
www.deq.virginia.gov

Matthew J. Strickler
Secretary of Natural Resources

David K. Paylor
Director
(804) 698-4000

September 17, 2019

VIA ELECTRONIC MAIL
Mr. Felix Mariani, Chief
US Army Garrison, Fort Belvoir
Directorate of Public Works
Environmental and Natural Resources Division
9430 Jackson Loop, Suite 100
Fort Belvoir, VA 22060-5116

Re: US Army Garrison, Fort Belvoir, Fort Belvoir, VA
EPA ID No. VA7213720082
Hazardous Waste Storage Building #1490 Final RCRA Operating Facility Closure Approval by the Virginia Department of Environmental Quality

Dear Mr. Mariani:

The Virginia Department of Environmental Quality, Office of Financial Responsibility and Waste Programs (DEQ) has completed the review of the US Army Garrison Fort Belvoir (Ft. Belvoir), Draft Final Closure Report for the Hazardous Waste Container Storage Area Building #1490 (Draft 1490 Closure Report), dated July 2019 and Amendment 1: Final Closure Report for Building 1490 (Amendment 1), dated September 11, 2019.The Draft 1490 Closure Report and was submitted to fulfill the requirements of the Final Closure Plan for Building #1490 in the Ft. Belvoir facility's final permit and the approved Class 1 Modification to Table 1, dated April 5, 2019, and two approved extension requests, dated November 14, 2018 and May 16, 2018. Amendment 1 was submitted in response to observations made during the closure verification inspection performed on August 8, 2019 to supplement the Draft 1490 Closure Report.

The Owner/Operator and Professional Engineer (PE) Certifications in the Draft 1490 Closure Report are deemed satisfactory and are dated July 3, 2019 and July 1, 2019. A closure verification inspection addressing Building 1490 was performed by Christina Archambeault, Hazardous Waste Inspector, and Ashby Scott, RCRA Permit Writer, on August 8, 2019.

As a result of the August 8, 2019 verification inspection and the DEQ's previous efforts described within this letter, closure of the permitted hazardous waste storage facility under EPA ID. No. VA7213720082 is complete. The closure meets the criteria of the approved closure plan dated April 5, 2019 (latest modification), and is in accordance with the Virginia Hazardous Waste Management Regulations. Therefore, the storage facility is considered to be clean-closed and to meet residential risk.

In a letter dated March 12, 2019, Ft. Belvoir notified the DEQ that closure of the permitted hazardous waste storage facility had commenced and it was determined by DEQ that no 45-day notice was given prior to the commencement of the closure activities on November 7, 2017. The 180-day closure period was scheduled to end on May 7, 2018 but was extended by two approved extension requests, dated May 16, 2018 and November 14, 2018.

Ft. Belvoir requested a modification to Table 1 of the approved Closure Plan on June 18, 2019 to reduce the number of constituents which would be required to be analyzed to determine whether clean closure had been achieved. Upon review of the modification request DEQ determined that insufficient information had been provided to justify the request and a meeting was held on September 19, 2018 between DEQ and Ft. Belvoir to clarify what information would need to be submitted for a modification request to be justified. After several conference calls between DEQ and Ft. Belvoir to clarify the required information for a justification to be made a subsequent modification request was submitted on March 19, 2019 and was approved on April 5, 2019.

Amendment 1 was submitted in response to observances of a crack in the top of the berm of one of the containment units during the verification inspection on August 8, 2019. Amendment 1 details the crack was determined to not be through going as it was no more than 2 inches into a 6-inch high curb and did not penetrate the floor itself.

All other conditions and requirements of the facility's Hazardous Waste Permit shall remain in effect for the duration of the Permit (until 8/10/2025) unless the existing Permit is modified, revoked and reissued, or terminated in accordance with 40 CFR § 124.5, and 40 CFR § 270.41 through 270.42, or continued in accordance with 9 VAC 20-60-270.B.5. More specifically, Module IV, *Site-Wide Corrective Action* remains in effect. However, the terms and conditions of the Permit may be modified in the future to reflect updated Corrective Action requirements.

As provided by Rule 2A:2 of the Supreme Court of Virginia, you have 30 days from the date of service of this decision to initiate a legal appeal by filing a notice of appeal with:

David K. Paylor, Director
Department of Environmental Quality
1111 East Main Street, Suite 1400
P.O. Box 1105
Richmond, VA 23218

In the event that this decision is served to you by mail, the date of service will be calculated as three days after the postmark date. Please refer to Part 2A of the Rules of the Supreme Court of Virginia, which describes the required content of the Notice of Appeal, including specifications of the Circuit Court to which the appeal is taken, and additional requirements concerning appeals from decisions of administrative agencies.

If you should have any questions regarding these matters, please contact Mr. Ashby Scott, of my staff, by phone at (804) 698-4467 or by email at Ashby.Scott@deq.virginia.gov.

Sincerely,

Leslie A. Romanchik

Leslie A. Romanchik
Hazardous Waste Program Manager
Office of Financial Responsibility and Waste Programs

cc: Barbara Smith, EPA, Region III
Catherine McGoldrick, EPA, Region III
Wilamena Harback, FTBL MP
Christopher Manikas, FTBL MP
Ashby Scott, DEQ, CO
Chris Evans, DEQ, CO
Richard Doucette, Chris Archambeault, DEQ, NVRO
Central Hazardous Waste Files

RCRA Corrective Action Administration Closure Report
Solid Waste Management Units
Main Post
U.S. Army Garrison Fort Belvoir, Virginia

SWMU Number	SWMU Title	Site Description	Admin Closure Category	Justification
N-13	Building 1490 Hazardous Materials Storage	SWMU N-13, Building 1490 was first described in the 1992 CH2M Hill SWMU Study as a hazardous material storage facility that has been in use since 1984. According to the 2005 VSI, operations at this unit include segregating, labeling, and storing waste materials prior to being transported off the Installation by contractors to be properly disposed. Before 1984 the building was used as a pesticide mixing area (SWMUB-16) and some floor staining had been documented. In 1991 approximately 1 gallon of methyl alcohol and bromine was released and was contained by the secondary containment system. The spill was handled in accordance with the Installation's Spill Contingency Plan and was not considered a release into the environment since the spill occurred inside.	**AC 6:** Based on a review of historical documentation of this site, there is no evidence or indications that any type of release into environment has occurred at this site that would require further actions.	Building 1490 and the storage of hazardous materials within the structure are managed through Fort Belvoir's Permit for Hazardous Waste Storage. Although there is one report of a small amount of hazardous chemicals being released inside the building, the materials were addressed through the Installation's Spill Contingency Plan. The building has secondary containment structures in place and has no pathway for chemicals to be released into the environment.
N-14	Building 1356 Oil/Water Separator	SWMU N-14 was first described in the 1992 CH2M Hill SWMU Study as a concrete gravity oil/water separator measuring approximately 10 ft by 4 ft, with a metal grate as a cover. The unit received washwater containing detergent and storm water from an adjacent washrack (SWMU C-03). According to the 2005 VSI, the oil water separator and washrack had not been used since the 1980's and appeared to be plugged up with debris. Standing water that had an oily sheen was observed in the unit. There is no historical documentation or records indicating that any type of release to the surrounding environment occurred.	**AC 6:** Based on a review of historical documentation of this site, there is no evidence or indications that any type of release into environment has occurred at this site that would require further actions.	Historical records from SWMU N-14 indicate that there are no documented releases or spills related to this former oil/water separator. Additionally the wash rack has been inactive since the 1980s.

Administrative Closure Strategy
Solid Waste Management Units
Main Post
Fort Belvoir, Virginia

INTRODUCTION

Currently Fort Belvoir manages 204 Solid Waste Management Units (SWMUs) under a Corrective Action Program for SWMUs on Fort Belvoir's Main Post under a Resource Conservation and Recovery Act (RCRA) Part B, Permit# (EPA ID VA7213720082).

In 2006, Tetra Tech, Inc. was tasked by Fort Belvoir Directorate of Public Works, Environmental and Natural Resources Division (DPW-ENRD) to categorize each SWMU into one of the four corrective action classes based on the 2005 Visual Site Inspections (VSIs). All 204 SWMUs have been assigned one of four status categories based on the type action to be taken at each site. These categories include; No Further Action (NFA), Administrative Closure (AC), Confirmatory Sampling (CS), and Site Investigation (SI).

In 2009, Tetra Tech, Inc drafted the first volume of Administrative Closure Reports that included 15 separate SWMU sites, which was sent to and reviewed by U.S. EPA Region III Regulators for closure. The 15 sites all received closure between 2009 and 2010 and were removed from Fort Belvoir's RCRA Part B Permit.

During a meeting on December 7th, 2010 between representatives from Fort Belvoir DPW-ENRD, the U.S. Army Environmental Command (AEC), U.S. EPA Region III, and Tetra Tech agreed upon the drafting of a document that would briefly describe each of the 90 SWMUs that were deemed acceptable to be closed through the administrative closure process. Additionally, a brief justification for closure was included for each of the SWMU sites to support why each was categorized into one of six administrative closure categories listed below.

This second volume of Administrative Closures includes the 90 SWMU sites located on the Main Post of U.S. Army Garrison Fort Belvoir, VA that have been recommended to be closed through this administrative closure process. Below are the six administrative closure categories that each of the 90 SWMU sites fall into.

Administrative Closure (AC): SWMU sites that require action from Fort Belvoir and/or the regulators, however, all action is limited to report preparation, review, and approval for NFA. Six scenarios of site status belong in this recommendation category, as described below:

> **AC 1:** Site investigation and corrective action are complete, and a closure report was prepared but not forwarded or approved by regulatory agency.
>
> **AC 2:** SWMU site no longer exists due to significant site disturbance as a result of re-grading and construction activity.
>
> **AC 3:** A site component, such as historical infrastructure, needs to be removed from the SWMU site, but no sampling is required.

AC 4: The SWMU is being managed or addressed under a separate program, such as Fort Belvoir's Petroleum Management Program (PMP), Military Munitions Response Program (MMRP), Virginia Pollution Discharge Elimination System (VPDES), National Pollution Discharge Elimination System (NPDES), or Clean Water Act (CWA).

AC 5: The site is an active permitted facility.

AC 6: Based on a review of historical documentation of this site, there is no evidence or indications that any type of release into environment has occurred at this site that would require further actions.

SITE N-13

HAZARDOUS MATERIAL STORAGE (BUILDING 1490)

Description: This active unit is located within Building 1490. Building 1490 is a single-story corrugated steel on concrete slab structure (see Figure 1). The original unit, identified during the 1991 site visit, consisted of a concrete-lined and concrete-bermed indoor storage area approximately 30 feet by 30 feet, occupying the northern third of Building 1940 (see Figure 2 and Plate 1). Since the original site visit, the original storage area has been modified to include several four-foot high cinder block walls that separate the storage area into various bays for the storage of different waste streams. In addition, the southern third of Building 1490 has been converted into a bermed storage area, with secondary containment, for flammable wastes.

History: According to facility representatives, this unit began operations in 1984 and is currently active, operating under Fort Belvoir RCRA permit as the facility hazardous material storage unit. Operations at this unit include segregating, labeling, and storing materials prior to disposal by outside contractors. Waste streams observed at this site included transformers labeled PCB, drums of PCB oils, paints, solvents, oxidizers, and flammables. Prior to 1984, Building 1490 was operated as the pesticide mixing and storage area for Fort Belvoir, and it has been identified as SWMU B-16. Floor stains were also noted in previous reports.

Action Plan:

Based on the above, the following actions shall be taken to close this Solid Waste Management Unit:

1. Since this unit is operated under the Fort Belvoir RCRA permit program which will require extensive sampling and clean up when the unit is closed, No Further Action with respect to the unit's SWMU status are recommended.

Note: Information reviewed during the development of this Closure Action Plan was selected from the following sources (where possible): the 1988 U.S. EPA RCRA Facility Assessment by A.T. Kearny, Inc; the 1992 Solid Waste Management Unit Study by CH2M Hill; site specific reports and analytical data from the Fort Belvoir Directorate of Public Works, Environmental and Natural Resource Division; facility personnel interviews; and site reconnaissance.

2018

MP11: Building 1495 Former Outdoor Transformer Storage Area

PCB TMDL ACTION PLAN – APPENDIX C-11

FORT BELVOIR

Proposed MP-11 Investigation Approach

Site Name: Site MP-11: Building 1495

Site Description: Building 1495 is used as Fort Belvoir's Hazardous Waste Storage and Processing Building. Between 2010 and 2012, transformers were stored in the northeast portion of the site. In 2012, the transformers appeared to be leaking, and the surrounding soils were removed and disposed of in October 2014. Additionally, in August 2013, stained soils and odor were encountered adjacent to Building 1495, and impacted soils were removed and disposed of in July 2014. Confirmation samples from both excavations indicated no PCB contamination remained in site soil. As Building 1495 operates as a hazardous waste processing facility, the industrial outfalls associated with it are sampled in support of the PCB Total Maximum Daily Load (TMDL) Action Plan. In November 2013, prior to the July 2014 soil removal, samples from two outfalls exhibited PCBs above the TMDL for the Accotink Bay Watershed. Water samples collected at the industrial outfall in April 2015 and February 2017, after the soil removal actions, showed increased PCB levels, significantly above the TMDL.

Investigation Results to Date: In 2015, soil samples were collected at eight locations in the vicinity of the former PCB transformer storage area adjacent to Building 1495 in order to assess impacts to soil. Results of this sampling indicated that, although PCBs were detected at concentrations below residential screening criteria in the soil samples, further investigation was necessary to determine if there is significant contamination at additional depths. Additionally, three surface water samples were collected, in which VOCs, SVOCs and PCBs were not detected above VDEQ regulatory limits.

Potentially impacted media at the site includes surface soil, subsurface soil, groundwater, surface water, and sediment. The primary site-specific deposition and transport mechanism at MP-11 would be the leaking of the transformers onto soil, which could impact surface runoff and groundwater. Impacted runoff could be transported to nearby surface water features, including Accotink Bay. Potential human and ecological exposure pathways include: direct contact, ingestion, and inhalation for soil; consumption and direct contact with impacted sediment and surface water; and groundwater consumption or secondary impact to surface water and sediment.

Regulatory Status: RCRA Facility Investigation

Objectives: Determine the nature and extent of PCB-impacted media at MP-11, and achieve RFI.

Evaluation Methodology: Determine whether additional investigation is required to complete site characterization.

(1) Determine whether the site or a portion of the site has not been historically sampled and requires characterization/ delineation; and

(2) Compare analytical results for PCBs from soil samples collected and reported in 2015 to USEPA Residential Regional Screening Levels (RSLs).

Conclusion: Although PCBs were detected at concentrations below the screening criteria in the soil samples, further investigation of the area of concern is recommended to determine if there is contamination contributing to the storm water compliance exceedances. This investigation will include determining the nature and extent of PCBs in soil and groundwater, determining the nature and extent of PCBs in surface water and sediment, and evaluating potential human health or ecological risk.

The first phase of the investigation will include collection of seven surface soil samples, five subsurface soil samples, and one groundwater sample. The groundwater sample will be collected from a newly installed one-inch temporary monitoring well. If contaminants of concern (COCs) are detected above criteria in soil, sediment, or surface water, additional phases of investigation (sampling at step-out locations) will be conducted to delineate impacted media. If groundwater is impacted above criteria, a minimum of two additional temporary groundwater monitoring wells will be installed to further delineate site COCs and characterize hydrogeological conditions. Surface water and sediment samples will initially be collected from four locations; based on the results from these samples, additional step-out surface water and sediment locations will be sampled (as necessary) to determine the nature and extent of impacted media. Figure 5-1 presents the initial and secondary (step-out) sampling locations for each medium. All investigation activities will be conducted under Plexus (Plexus Scientific Corporation) oversight. Drilling will be performed by a subcontractor and soil logging, well construction documentation and sampling will be completed by an Plexus geologist.

Chemical Class	Assessment of Current Data	Additional Characterization/ Scope of Work	Sampling Rationale
Soil			
PCBs	No PCB soil data has exceeded RSLs.	Surface and subsurface soil samples will be collected from locations east of the building outlined in **Figure 5-1**. Results will be compared to USEPA Residential Soil RSLs.	Surface and subsurface soil samples will be collected from five borings that will be advanced to the water table via direct push technology (DPT). Continuous soil cores will be collected and logged using the Unified Soil Classification System (USCS) classification. Soil samples will be collected from areas that are potentially impacted based on visual inspection of the soil core. In the absence of any soil staining and/or olfactory indications of contamination, one soil sample will be collected from directly above the water table interface. Based on the results of the initial investigation, additional step-out locations will be sampled (as necessary) to characterize the nature and extent of each impacted medium.
Groundwater			
PCBs	No groundwater data has been collected to date.	A groundwater sample will be collected from the area of the July 2014 excavation. Results will be compared to USEPA Tapwater RSLs.	One soil boring (see above) will be completed as a 1-inch temporary monitoring well. Installation of the temporary monitoring well(s) will be completed via DPT in accordance with SOP 3-12 – Monitoring Well Installation. The proposed monitoring well will be installed into the unconsolidated aquifer to a depth where a 5-ft prepacked screen will intercept the water table. The wells will be constructed of 1-inch diameter Schedule 40 polyvinyl chloride (PVC) pipe with 5 feet of well screen. All temporary wells will be installed with a flush mount type well completion and will be developed after installation in accordance with SOP 3-13 – Monitoring Well Developments. One groundwater sample will be collected from the temporary monitoring well via low-flow sampling methods. If groundwater is impacted above criteria, a minimum of two additional temporary groundwater monitoring wells will be installed to further delineate site COCs and characterize hydrogeological conditions. If groundwater has not been impacted by PCBs, the temporary monitoring well will be abandoned.
Surface Water and Sediment			
PCBs	With the exception of storm water compliance samples that have exceeded their TMDL limits, no VOC, SVOC, or PCB surface water data has exceeded criteria. No sediment data has been collected to date.	Surface water and sediment samples will be collected from potential release points and storm water outfalls. Surface water results will be compared to the most conservative of the four applicable Virginia Criteria for Surface Water (9VAC25-260-140): Freshwater Aquatic Life Acute and Chronic criteria, and Human Health Public Water Supply and All Other Surface Waters criteria. Sediment results will be compared to USEPA Residential Soil RSLs.	Co-located surface water and sediment samples will initially be collected from four locations. These locations have been determined based on compliance sample locations and a site visit with the facility personnel. In the absence of surface water, only sediment samples will be collected at each location.

2018

MP12: 249th Motorpool Area Stream Contamination

PCB TMDL ACTION PLAN – APPENDIX C-12

FORT BELVOIR

Proposed MP-12 Investigation Approach

Site Name: Site MP-12: The 249th Motor Pool Area Stream Contamination

Site Description: The 249th Motor Pool Area Stream Contamination site consists of empty drums that were investigated in October 2015. These drums are located in drainage channels in an undeveloped area south of Pohick Road and east of Morrow Road.

Investigation Results to Date: In 2015, surface soil samples were collected near each abandoned drum. A photoionization detector (PID) was used to prescreen the soils around each drum and select the surface soil sample location. The soil samples were analyzed for VOCs, total petroleum hydrocarbons (TPH) and PCBs. The data obtained during this soil investigation indicated a potential TPH-diesel range organics (DRO) and TPH-oil range organics (ORO) release in the vicinity of three drums. Further investigation of this area of concern is recommended to confirm the presence of SVOCs and metals associated with TPH detections, and, if necessary, determine the nature and extent of contamination.

Surface soil at the site has the greatest potential to be contaminated. If surface soil is impacted, then subsurface soil, groundwater, surface water and sediment may also be impacted. The primary site-specific deposition and transport mechanism at MP-12 would be the leaking of drums to surface soil. The runoff and infiltration of the contaminant could be transported to and through the drainage and into nearby tributaries, which discharge into Accotink Bay. Potential human and ecological exposure pathways include: direct contact, ingestion, and inhalation for soil; consumption and direct contact with impacted sediment and surface water; and groundwater consumption or secondary impact to surface water and sediment.

Regulatory Status: RCRA Facility Investigation

Objectives: Determine the nature and extent of SVOCs and metals impacting media at MP-12, and achieve RFI.

Evaluation Methodology: Determine whether additional investigation is required to complete site characterization.

(1) Determine whether the site or a portion of the site has not been historically sampled and requires characterization/ delineation; and

(2) Compare analytical results for TPH-DRO/ORO and PCBs from soil samples collected and reported in 2015 to VDEQ guidance values and USEPA Residential RSLs respectively.

Conclusion: TPH-ORO exceeded VDEQ reporting limits in three of the seven soil samples collected from the area of concern. TPH-DRO exceeded VDEQ reporting limits in two of the seven soil samples collected from the area of concern. VOCs, PCBs, and TPH-gasoline range organics (GRO) were not detected above their respective screening criteria in any of the samples. The data obtained during the soil investigation is indicative of a TPH-DRO release near the locations of samples SS02, SS03, and SS05. Further investigation of this area of concern is recommended to confirm the presence of SVOCs and/or metals associated with TPH detections. This investigation will confirm the presence of SVOC and/or metals contamination. If COCs are present above criteria, the investigation will then determine the nature and extent of SVOCs and/or metals in impacted media, and evaluate potential human health or ecological risk. The empty drums will be removed from the site.

The first phase of the investigation will include the collection of 12 surface soil samples (four samples at each of the three impacted drum locations). Based on the results of the surface soil sample analyses, sub-surface soil and groundwater samples will be collected, as necessary. If groundwater sampling is required and results are above criteria, a minimum of two additional temporary groundwater monitoring wells will be installed to further delineate site COCs and characterize hydrogeological conditions. Sediment and surface water samples will initially be collected from 1 location downstream from each of the three potentially impacted drum sites. Based on the results from these samples, additional, step-out surface water and sediment locations will be sampled to determine the nature and extent of the impacted media. **Figure 5-2** presents the initial surface soil, sediment, and surface water sampling locations. All investigation activities will be conducted under Plexus Scientific Corporation (Plexus) oversight. Drilling will be performed by a subcontractor and soil logging, well construction documentation and sampling will be completed by a Plexus geologist.

Chemical Class	Assessment of Current Data	Additional Characterization/ Scope of Work	Sampling Rationale
Soil			
SVOCs and Metals	No VOC or PCB detections exceeded RSLs; however, further investigation is recommended to confirm the presence of SVOCs and metals, and, if necessary, determine the nature and extent of contamination.	Surface soil samples will be collected in the vicinity of the three impacted drums. Results will be compared to USEPA Residential Soil RSLs.	Twelve surface soil samples will be collected, including four samples at each of the three impacted drum locations. Based on the results of the surface soil sample analyses, sub-surface soil and groundwater samples will be collected, as necessary. For sub-surface soil samples, continuous soil cores will be collected and logged using USCS classification. In the absence of any soil staining and/or olfactory indications of contamination, one soil sample will be collected from above the water table interface. Based on the results of the initial investigation, additional step-out locations will be sampled (as necessary) to characterize the nature and extent of each impacted medium.
Groundwater			
SVOCs and Metals	No groundwater data has been collected to date.	If necessary, a groundwater sample will be collected from each drum site where surface soil samples exceed RSLs to determine if SVOCs and metals have impacted groundwater. Results will be compared to USEPA MCLs, or the USEPA Tapwater RSL if no MCL exists.	If necessary, one soil boring (see above) will be completed as a 1-inch temporary monitoring well. Installation of the temporary monitoring well(s) will be completed via DPT in accordance with SOP 3-12 – Monitoring Well Installation. The proposed monitoring well will be installed into the unconsolidated aquifer to a depth where a 5-ft prepacked screen will intercept the water table. The wells will be constructed of 1-inch diameter Schedule 40 polyvinyl chloride (PVC) pipe with 5 feet of well screen. All temporary wells will be installed with a flush mount type well completion and will be developed after installation in accordance with SOP 3-13 – Monitoring Well Developments. One groundwater sample will be collected from the temporary monitoring well via low-flow sampling methods. If groundwater is impacted above criteria, a minimum of two additional temporary groundwater monitoring wells will be installed to further delineate site COCs and characterize hydrogeological conditions. If groundwater has not been impacted by SVOCs and metals, the temporary monitoring well will be abandoned.
Surface Water and Sediment			
SVOCs and Metals	No sediment or surface water data has been collected to date.	Surface water and sediment samples will be collected from locations downgradient of the three drum sites. Surface water results will be compared to the most conservative of the four applicable Virginia Criteria for Surface Water (9VAC25-260-140): Freshwater Aquatic Life Acute and Chronic criteria, and Human Health Public Water Supply and All Other Surface Waters criteria. Sediment results will be compared to USEPA Residential Soil RSLs.	Co-located surface water and sediment samples will initially be collected from three locations. These locations have been determined based on their location immediately downstream of each impacted drum site. and a site visit with the facility personnel. In the absence of surface water, only sediment samples will be collected at each location.

2018

MP13: Theote Road/ Warren Road Wash Yard Area

PCB TMDL ACTION PLAN – APPENDIX C-13

FORT BELVOIR

Proposed MP-13 Investigation Approach

Site Name: Site MP-13: The Theote Road/Warren Road Wash Yard Area

Site Description: The Theote Road/Warren Road Wash Yard Area was determined to be potentially impacted by contractors washing contaminated equipment.

Investigation Results to Date: On 19 December 2015 and 4 February 4 2016, surface soil sampling was conducted at 46 locations. The soil samples were analyzed for VOCs, SVOCs, TPH, metals, pesticides, and PCBs. The data obtained during this soil investigation indicated the presence of SVOCs and metals above Residential RSLs. Further investigation of this area of concern is recommended to determine the nature and extent of contamination.

Potentially-impacted media at the site includes surface and subsurface soil and groundwater. The primary site-specific deposition and transport mechanism at MP-13 would be washing of contaminated equipment, which could have potentially impacted soil and groundwater. Potential human and ecological exposure pathways include: direct contact, ingestion, and inhalation for soil; and consumption of groundwater.

Regulatory Status: RCRA Facility Investigation

Objectives: Determine the nature and extent of SVOCs and metals impacting media at MP-13, and achieve RFI.

Evaluation Methodology: Determine whether additional investigation is required to complete site characterization.

(1) Determine whether the site or a portion of the site has not been historically sampled and requires characterization/ delineation; and

(2) Compare analytical results for SVOCs and metals from soil samples collected and reported in 2016 to USEPA Residential RSLs.

Conclusion: SVOCs were detected above the USEPA Residential RSL in 15 of the 46 samples, and arsenic was reported above its criteria. VOCs, PCBs, and organochlorine pesticides, though detected, did not exceed screening criteria in any of the samples. This investigation will include determining the nature and extent of contamination in soil and groundwater, and evaluating potential human health or ecological risk.

The first phase of the investigation will include the collection of five surface soil samples,18 subsurface soil samples, and three groundwater samples (from temporary monitoring wells). If COCs are present, additional phases of investigation (step-out locations) will be conducted to delineate impacted media. If groundwater is impacted, a minimum of two additional temporary groundwater monitoring wells will be installed to further delineate site COCs and characterize hydrogeological conditions. **Figure 5-3** presents the initial and secondary (step-out) sampling locations for each medium. All investigation activities will be conducted under Plexus (Plexus Scientific Corporation) oversight. Drilling will be performed by a subcontractor and soil logging, well construction documentation and sampling will be completed by an Plexus geologist.

Chemical Class	Assessment of Current Data	Additional Characterization/ Scope of Work	Sampling Rationale
Soil			
SVOCs and Metals	SVOCs and metals exceed RSLs. VOCs, PCBs, and pesticides, though detected, did not exceed screening criteria.	Surface and subsurface soil samples will be collected within the wash yard. Results will be compared to USEPA Residential Soil RSLs.	Ten surface and 6 subsurface soil samples will be collected. Subsurface soil borings will be continuously cored and logged using USCS classification. Soil samples will be collected from areas that are potentially impacted based on visual inspection of the soil core. In the absence of any soil staining and/or olfactory indications of contamination, one soil sample will be collected from above the water table interface. Based on the results of the initial investigation, additional step-out locations will be sampled (as necessary) to characterize the nature and extent of each impacted medium.

Groundwater			
SVOCs and Metals	No groundwater data has been collected to date.	A groundwater sample will be collected from the area within the wash yard. Results will be compared to USEPA MCLs, or the USEPA Tapwater RSL if no MCL exists.	If necessary, one soil boring (see above) will be completed as a 1-inch temporary monitoring well. Installation of the temporary monitoring well(s) will be completed via DPT in accordance with SOP 3-12 – Monitoring Well Installation. The proposed monitoring well will be installed into the unconsolidated aquifer to a depth where a 5-ft prepacked screen will intercept the water table. The wells will be constructed of 1-inch diameter Schedule 40 polyvinyl chloride (PVC) pipe with 5 feet of well screen. All temporary wells will be installed with a flush mount type well completion and will be developed after installation in accordance with SOP 3-13 – Monitoring Well Developments. One groundwater sample will be collected from the temporary monitoring well via low-flow sampling methods. If groundwater is impacted above criteria, a minimum of two additional temporary groundwater monitoring wells will be installed to further delineate site COCs and characterize hydrogeological conditions. If groundwater has not been impacted by SVOCs and metals, the temporary monitoring well will be abandoned.

2018

MP14: Building 2476 Former Hazmat Storage Locker

PCB TMDL ACTION PLAN – APPENDIX C-14

FORT BELVOIR

Proposed MP-14 Investigation Approach

Site Name: Site MP-14: Building 2476

Site Description: Building 2476 was built in 1963 as a Vehicle Maintenance Shop/Motorpool, and has been used by various agencies and Army units. A hazardous material storage locker, which was located in the southwest corner of the facility's parking lot, had been stored on grass without any secondary containment. After removing the hazardous materials locker, personnel found a hole in the bottom of the locker and saw discoloration in the soil where the locker was stored. The locker had contained unlabeled containers, and the contents were unknown.

Investigation Results to Date: On 16 August 2015, four surface soil samples were collected in the area of stained soil that was both under and on either side of the storage locker. The data obtained during this soil investigation indicated the presence of elevated concentrations of VOCs, SVOCs, TPH, pesticides, metals, and PCBs above risk-based screening criteria. Further investigation of this area of concern is recommended to determine the nature and extent of contamination.

Potentially-impacted media at the site includes surface soil, subsurface soil, and groundwater. The primary site-specific deposition and transport mechanism at MP-14 would be chemicals leaking from the locker and impacting soil. Potential human and ecological exposure pathways include: direct contact, ingestion, inhalation for soil; and groundwater consumption.

Regulatory Status: RCRA Facility Investigation

Objectives: Determine the nature and extent of VOCs, SVOCs, pesticides, metals, and PCBs impacting media at MP-14, and achieve RFI.

Evaluation Methodology: Determine whether additional investigation is required to complete site characterization.

(1) Determine whether the site or a portion of the site has not been historically sampled and requires characterization/delineation; and

(2) Compare analytical results for VOCs, SVOCs, pesticides, metals and PCB from soil samples collected and reported in 2015 to USEPA Residential RSLs.

Conclusion: On 26 August 2015, four surface soil samples were collected from stained soil that was both under and on either side of the storage locker. The data obtained during this soil investigation indicated the presence of elevated detections of VOCs, SVOCs, TPH, pesticides, metals and PCBs above risk-based screening criteria. Further investigation of this area of concern is recommended to determine the nature and extent of contamination and evaluate potential human health or ecological risk.

The first phase of the investigation will include collection of four subsurface soil samples and one groundwater sample (from a temporary monitoring well). If COCs are present, additional phases of the investigation (step-out locations) will be conducted to delineate impacted media. If groundwater is impacted, a minimum of two additional temporary groundwater monitoring wells will be installed to further delineate site COCs and characterize hydrogeological conditions. **Figure 5-4** presents the initial and secondary (step-out) sampling locations for each medium. All investigation activities will be conducted under Plexus (Plexus Scientific Corporation) oversight. Drilling will be performed by a subcontractor and soil logging, well construction documentation and sampling will be completed by an Plexus geologist.

Chemical Class	Assessment of Current Data	Additional Characterization/ Scope of Work	Sampling Rationale
Soil			
VOCs, SVOCs, Pesticides, Metals and PCBs	All COCs tested were above risk-based screening criteria	Surface and subsurface soil samples will be collected within the wash yard. Results will be compared to USEPA Residential Soil RSLs.	Five surface and subsurface soil samples will be collected. Subsurface soil borings will be continuously cored and logged using USCS classification. Soil samples will be collected from areas that are potentially impacted based on PID detections and visual inspection of the soil core. In the absence of any PID detections, soil staining, and/or olfactory indications of contamination, one soil sample will be collected from above the water table interface. Based on the results of the initial investigation, additional step-out locations will be sampled (as necessary) to characterize the nature and extent of each impacted medium.
Groundwater			
VOCs, SVOCs, Pesticides, Metals and PCBs	No groundwater data has been collected to date.	A groundwater sample will be collected from the area where the locker was situated to determine if COCs have impacted groundwater above criteria. Results will be compared to USEPA MCLs, or the USEPA Tapwater RSL if no MCL exists.	If necessary, one soil boring (see above) will be completed as a 1-inch temporary monitoring well. Installation of the temporary monitoring well(s) will be completed via DPT in accordance with SOP 3-12 – Monitoring Well Installation. The proposed monitoring well will be installed into the unconsolidated aquifer to a depth where a 5-ft prepacked screen will intercept the water table. The wells will be constructed of 1-inch diameter Schedule 40 polyvinyl chloride (PVC) pipe with 5 feet of well screen. All temporary wells will be installed with a flush mount type well completion and will be developed after installation in accordance with SOP 3-13 – Monitoring Well Developments. One groundwater sample will be collected from the temporary monitoring well via low-flow sampling methods. If groundwater is impacted above criteria, a minimum of two additional temporary groundwater monitoring wells will be installed to further delineate site COCs and characterize hydrogeological conditions. If groundwater has not been impacted by site COCs, the temporary monitoring well will be abandoned.

2018

APPENDIX D

VADEQ GUIDANCE AND COMMENTS ON FINAL PCB TMDL ACTION PLAN, MARCH 2013

FORT BELVOIR

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER DIVISION

Subject: Guidance Memo No. 14-2014
Implementation Guidance for Section 47 (time limits on applicability of approved design criteria) and Section 48 (grandfathering) of the Virginia Stormwater Management Program Regulation, 9VAC25-870

To: Regional Directors and Local VSMP Administrators

From: Melanie D. Davenport, Director

Date: August 25, 2014

Copies: James Golden, Jeff Steers, Fred Cunningham, Joan Salvati, Allan Brockenbrough, Jerome Brooks, Regional Stormwater Compliance Managers

Summary:

Section 47 (time limits on applicability of approved design criteria) and Section 48 (grandfathering) of the Virginia Stormwater Management Program (VSMP) Regulation, 9VAC25-870, set forth the applicable stormwater management technical criteria to be implemented for regulated land-disturbing activities. The purpose of this guidance document is to clarify implementation of Sections 47 and Section 48 of the VSMP Regulation and was developed consistent with the regulation for use by the Department and Local VSMP Authorities.

This guidance document replaces DCR-VSWCB-028, Guidance Document on the Implementation of the Virginia Stormwater Management Regulations Grandfathering Provisions (05/12), prepared by the Department of Conservation and Recreation.

Electronic Copy:

An electronic copy of this guidance document in PDF format is available for staff internally on DEQNET, and for the general public on DEQ's website at: http://www.deq.virginia.gov/Programs/Water/Laws,Regulations,Guidance/Guidance/WaterPermitGuidance.aspx.

Contact Information:

Please contact Drew Hammond, Office of Stormwater Management, at (804) 698-4037 or Andrew.Hammond@deq.virginia.gov with any questions regarding the application of this guidance.

Disclaimer:

This document is provided as guidance and, as such, sets forth standard operating procedures for the agency. However, it does not mandate or prohibit any particular action not otherwise required or prohibited by law or regulation. If alternative proposals are made, such proposals will be reviewed and accepted or denied based on their technical adequacy and compliance with appropriate laws and regulations.

Implementation Guidance for Section 47 (time limits on applicability of approved design criteria) and Section 48 (grandfathering) of the Virginia Stormwater Management Program Regulation, 9VAC25-870

Definitions:

"Chesapeake Bay Preservation Act (CBPA) land-disturbing activity" means a land-disturbing activity including clearing, grading, or excavation that results in a land disturbance equal to or greater than 2,500 square feet and less than one acre in all areas of jurisdictions designated as subject to the Chesapeake Bay Preservation Area Designation and Management Regulations (9VAC25-830) adopted pursuant to the Chesapeake Bay Preservation Act.

"Land disturbance" or "land-disturbing activity" means a manmade change to the land surface that potentially changes its runoff characteristics including clearing, grading, or excavation, except that the term shall not include those exemptions specified in § 62.1-44.15:34 of the Code of Virginia.

"Layout" means a conceptual drawing sufficient to provide for the specified stormwater management facilities required at the time of approval.

"Locality" means a county, city, or town.

“Part II B technical criteria” means the post-development stormwater management design criteria contained in Sections 62 through 92 of the VSMP Regulation, 9VAC25-870.

“Part II C technical criteria” means the post-development stormwater management design criteria contained in Sections 92 though 99 of the VSMP Regulation, 9VAC25-870.

"Stormwater management plan" means a document(s) containing material for describing methods for complying with the requirements of the VSMP Regulation, 9VAC25-870.

“Virginia Stormwater Management Program (VSMP) authority” means an authority approved by the Board after September 13, 2011 to operate a Virginia Stormwater Management Program or the Department.

Regulatory Text:

9VAC25-870-47. Applicability of other laws and regulations; time limits on applicability of approved design criteria.

A. Nothing in this chapter shall be construed as limiting the applicability of other laws and regulations, including, but not limited to, the CWA, Virginia Stormwater Management Act, Virginia Erosion and Sediment Control Law, and the Chesapeake Bay Preservation Act, except as provided in § 62.1-44.15:27 K of the Code of Virginia, and all applicable regulations adopted in accordance with those laws, or the rights of other federal agencies, state agencies, or local governments to impose more stringent technical criteria or other requirements as allowed by law.

B. Land-disturbing activities that obtain an initial state permit or commence land disturbance prior to July 1, 2014, shall be conducted in accordance with the Part II C (9VAC25-870-93 et seq.) technical criteria of this chapter. Such projects shall remain subject to the Part II C technical criteria for two additional state permit cycles. After such time, portions of the project not under construction shall become subject to any new technical criteria adopted by the board.

C. Land-disturbing activities that obtain an initial state permit on or after July 1, 2014, shall be conducted in accordance with the Part II B (9VAC25-870-62 et seq.) technical criteria of this chapter, except as provided for in 9VAC25-870-48. Land-disturbing activities conducted in accordance with the Part II B technical criteria shall remain subject to the Part II B technical criteria for two additional state permit cycles. After such time, portions of the project not under construction shall become subject to any new technical criteria adopted by the board.

D. Nothing in this section shall preclude an operator from constructing to a more stringent standard at his discretion.

9VAC25-870-48. Grandfathering.

A. Any land-disturbing activity shall be considered grandfathered by the VSMP authority and shall be subject to the Part II C (9VAC25-870-93 et seq.) technical criteria of this chapter provided:

1. A proffered or conditional zoning plan, zoning with a plan of development, preliminary or final subdivision plat, preliminary or final site plan, or any document determined by the locality to be equivalent thereto (i) was approved by the locality prior to July 1, 2012, (ii) provided a layout as defined in 9VAC25-870-10, (iii) will comply with the Part II C technical criteria of this chapter, and (iv) has not been subsequently modified or amended in a manner resulting in an increase in the amount of phosphorus leaving each point of discharge, and such that there is no increase in the volume or rate of runoff;
2. A state permit has not been issued prior to July 1, 2014; and
3. Land disturbance did not commence prior to July 1, 2014.

B. Locality, state, and federal projects shall be considered grandfathered by the VSMP authority and shall be subject to the Part II C technical criteria of this chapter provided:

1. There has been an obligation of locality, state, or federal funding, in whole or in part, prior to July 1, 2012, or the department has approved a stormwater management plan prior to July 1, 2012;
2. A state permit has not been issued prior to July 1, 2014; and
3. Land disturbance did not commence prior to July 1, 2014.

C. Land disturbing activities grandfathered under subsections A and B of this section shall remain subject to the Part II C technical criteria of this chapter for one additional state permit cycle. After such time, portions of the project not under construction shall become subject to any new technical criteria adopted by the board.

D. In cases where governmental bonding or public debt financing has been issued for a project prior to July 1, 2012, such project shall be subject to the technical criteria of Part II C.

E. Nothing in this section shall preclude an operator from constructing to a more stringent standard at his discretion.

Guidance:

Existing Construction Activities

All regulated land-disturbing activities, including all Chesapeake Bay Preservation Act (CBPA) land-disturbing activities, that obtained coverage under the 2009 General Permit for Discharges of Stormwater from Construction Activities (general permit) or commenced land disturbance prior to July 1, 2014 are subject to the old Part II C stormwater management technical criteria for two (2) additional general permit cycles. Except for CBPA land-disturbing activities not requiring 2014 general permit coverage, all

previously permitted land-disturbing activities require continued coverage under the 2014 and 2019 general permit to remain under the old Part II C technical criteria.

Multi-phase land-disturbing activities (e.g., large-scale residential, commercial, and industrial developments), that obtained coverage under the 2009 general permit remain subject to the old Part II C technical criteria for two (2) additional general permit cycles provided that the Stormwater Pollution Prevention Plan (SWPPP) for the development included a description of, and necessary calculations supporting, all development-wide post-construction stormwater management measures that are to be installed prior to the completion of construction to ensure compliance with the old Part II C technical criteria. If the SWPPP did not include post-construction stormwater management measures for subsequent phases yet to be built, then those phases should be designed and constructed in accordance with the new Part II B technical criteria.

"Grandfathered" Construction Activities

"Grandfathered" land-disturbing activities are subject to the old Part II C stormwater management technical criteria. These activities remain subject to the old Part II C technical criteria for one (1) additional general permit cycle. In cases where governmental bonding or public debt financing has been issued for a project prior to July 1, 2012, the project will remain subject to the old Part II C technical criteria in perpetuity.

Private construction activities should be considered "grandfathered" by the VSMP Authority provided that all of the following conditions are met:

1. A proffered or conditional zoning plan, zoning with a plan of development, preliminary or final subdivision plat, preliminary or final site plan, or any document determined by the locality to be equivalent thereto was approved by the locality prior to July 1, 2012. The Department may require confirmation from the plan-approving locality to satisfy this regulatory requirement;

2. The aforementioned plan, plat, or equivalent document provided a "layout" as defined in the VSMP Regulation (i.e., a conceptual drawing sufficient to provide for the specified stormwater management facilities required at the time of approval) including basic pre- and post-construction water quality and water quantity calculations. The Department may require confirmation from the plan-approving locality to satisfy this regulatory requirement;

3. The aforementioned plan, plat, or equivalent document has not been subsequently modified or amended in a manner resulting in an increase in the amount of phosphorus leaving each point of discharge, or an increase in the volume or rate of runoff. The Department may require confirmation from the plan-approving locality to satisfy this regulatory requirement;

4. The construction activity will comply with the old Part II C technical criteria at the time of final design;

5. 2009 general permit coverage was not issued for the construction activity; and

6. Land disturbance did not commence prior to July 1, 2014.

Locality, state, and federal construction activities should be considered "grandfathered" by the VSMP Authority provided that all of the following conditions are met:

1. There has been an obligation of locality, state, or federal funding, in whole or in part, prior to July 1, 2012, or the Department has approved a stormwater management plan prior to July 1, 2012;

2. 2009 general permit coverage was not issued for the construction activity; and

3. Land disturbance did not commence prior to July 1, 2014.

New Construction Activities

Land-disturbing activities that obtain first-time coverage under the 2014 general permit, with the exception of "grandfathered" projects or projects served by an existing stormwater management facility, are subject to the new Part II B technical criteria for two (2) additional general permit cycles.

Any land-disturbing activities served by an existing on-site or off-site stormwater management facility, including a regional (watershed-wide) stormwater management facility, designed and implemented in accordance with the old Part II C technical criteria remain subject to the old Part II C technical criteria for two (2) additional general permit cycles. If the land-use assumptions upon which the stormwater management facility was designed and implemented change (e.g., an unanticipated increase in impervious cover), then the existing stormwater management facility should be modified to comply with the new Part II B technical criteria or the project should be designed in accordance with the new Part II B technical criteria.

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
NORTHERN REGIONAL OFFICE
13901 Crown Court, Woodbridge, Virginia 22193
(703) 583-3800 Fax (703) 583-3821
www.deq.virginia.gov

Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

Thomas A. Faha
Regional Director

December 16, 2015

By Email (felix.m.mariani3.civ@mail.mil)

Mr. Felix M. Mariani
Chief, Environmental and Natural Resources Division
U.S. Army – Fort Belvoir
9430 Jackson Loop, Suite 100
Fort Belvoir, VA 22060

RE: Virginia Pollutant Discharge Elimination System (VPDES) MS4 Registration No. VAR040093
U.S. Army – Fort Belvoir
Local TMDL Action Plan Approval

Ms. Couch:

The following Local TMDL Action Plan (plan) for the above-referenced registration number was submitted in early 2013 to the Virginia Department of Conservation and Recreation in accordance with Section I.B of General VSMP Permit for Discharges of Stormwater from Small MS4s (4VAC50-60-1240), which was in effect at the time of your submittal. This plan is accepted by Virginia Department of Environmental Quality (DEQ) to meet the requirements of Section I.B of the General VPDES Permit for Discharges of Stormwater from Small MS4s, which became effective July 1, 2013 (9VAC25-890-40).

- Final, Virginia Pollutant Discharge Elimination System (VPDES) MS4 Permit, Fort Belvoir PCB TMDL Action Plan at U.S. Army Garrison Fort Belvoir, Virginia, dated March 2013

The above referenced Local TMDL Action Plan is approved and is an enforceable part of the MS4 Program Plan.

Please be advised the informational requirements to be provided in a Local TMDL Action Plan were revised since submittal of your plan. Based upon DEQ's review of your plan, the majority of the information required by Section I.B.2 of the current General VPDES Permit for Discharges of Stormwater from Small MS4s was provided; however, DEQ requests the following comments be addressed in the next revision of the plan:

1. Develop and maintain a list of your legal authorities, such as ordinances, state and other permits, orders, specific contract language, and interjurisdictional agreements applicable to reducing the pollutant identified in each applicable wasteload allocation. (Section I.B.2.a)

2. Revise Table 2 under Section 4.1 entitled "PCB TMDL Action Plan" to reference the current General VPDES Permit for Discharges of Stormwater from Small MS4s.

Please note any future modifications to an approved local TMDL Action Plan shall be made in accordance with the Program Plan Modification Section of the MS4 General Permit (Section II.F).

You may contact Susan Mackert at (703) 583-3853 or susan.mackert@deq.virginia.gov or me at 703-583-3843 or bryant.thomas@deq.virginia.gov should you have any questions or concerns regarding this letter.

Respectfully,

Bryant Thomas
Water Permits and Planning Manager

cc (by electronic mail):
Ms. Pamela Couch, Stormwater Program Manager, U.S. Army – Fort Belvoir (pamela.j.couch2.civ@mail.mil)

//skm

2018

APPENDIX E

FORT BELVOIR POLICY MEMORANDUMS

FORT BELVOIR

DEPARTMENT OF THE ARMY
US ARMY INSTALLATION MANAGEMENT COMMAND
HEADQUARTERS, UNITED STATES ARMY GARRISON, FORT BELVOIR
9820 FLAGLER ROAD, SUITE 213
FORT BELVOIR, VIRGINIA 22060-5928

REPLY TO
ATTENTION OF

IMBV-PWE

26 June 2014

MEMORANDUM FOR US Army Fort Belvoir Personnel

SUBJECT: Fort Belvoir Policy Memorandum #28, Environmental Policy

1. REFERENCE: Army Regulation 200-1 (Environmental Quality, Environmental Protection and Enhancement), 13 December 2007.

2. PURPOSE. To promulgate Fort Belvoir's commitment to environmental management.

3. APPLICABILITY. This policy applies to all military, civilians, mission partners and contractor activities at Fort Belvoir.

4. POLICY. Fort Belvoir is committed to the protection of the environment, within mission and funding constraints, and will be accountable for its decisions. In support of this environmental policy, Fort Belvoir will:

a. Comply with legal and other requirements applicable to the conduct of Fort Belvoir's mission while continually improving Fort Belvoir's environmental performance.

b. Integrate sound pollution prevention practices, waste minimization and sustainable practices into daily decisions, activities and planning.

c. Conserve and protect our natural resources, special natural areas and wetlands through efficient use, reuse and sustainable management.

d. Promote sustainable goals and strategies that address life-cycle and operational costs, planning sustainable sites, safeguarding water resources, improving energy efficiency and performance, conserving materials and resources, and enhancing indoor environmental quality.

e. Proactively manage environmental issues and act promptly and responsibly to correct incidents or conditions that endanger health, safety, or the environment.

f. Assess the environmental impacts of proposed development projects, changes in land use, and other policy or process initiatives designed to enhance the function, mission, or quality of life at Fort Belvoir and communicate them to the surrounding community.

g. Communicate this environmental policy to all persons working for or on behalf of Fort Belvoir, and make available to the public.

h. Ensure conformance of this environmental policy by all members of the Fort Belvoir community in accordance with their roles and responsibilities. To support this commitment, we will continue to document, implement and maintain our Garrison-wide Environmental Management System (EMS) in accordance with ISO 14001:2004 and track our environmental performance. Our EMS provides a framework for setting and reviewing environmental objectives and targets.

5. PROPONENT. The proponent and responsible agency for this policy is the Directorate of Public Works at 703-806-3017.

MICHELLE D. MITCHELL
Colonel, AG
Commanding

DEPARTMENT OF THE ARMY
US ARMY INSTALLATION MANAGEMENT COMMAND
HEADQUARTERS, UNITED STATES ARMY GARRISON, FORT BELVOIR
9820 FLAGLER ROAD, SUITE 213
FORT BELVOIR, VIRGINIA 22060-5928

REPLY TO
ATTENTION OF

IMBV-PW

2 August 2018

MEMORANDUM FOR All Fort Belvoir Employees (Military, Civilian, and Contractors), Residents, and Visitors

SUBJECT: Fort Belvoir Policy Memorandum #71, Prohibition of Illicit/Unauthorized Discharges into the Municipal Separate Storm Sewer System (MS4) and Waterways

1. Purpose. To prevent illicit/unauthorized discharges and illegal dumping into the storm sewer systems and waterways at Fort Belvoir Main Post and Fort Belvoir North Area to ensure protection of water quality of Fort Belvoir waterways and compliance with Fort Belvoir VPDES MS4 and Industrial Stormwater permits.

2. Applicability. This policy applies to military and civilian personnel, tenant and satellite organizations, mission partners, housing residents and contractor activities at Fort Belvoir and Fort Belvoir North Area.

3. References.

a. General Virginia Pollution Discharge Elimination System Permit (VPDES) for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4), Permit # VAR040093 (9VAC25-890-40)

b. VPDES Industrial Stormwater Individual Major Permit #VA0092771

4. Discussion.

a. Definitions:

(1) Illegal dumping: Any dumping of solid or liquid material into the storm sewer system or on the ground.

(2) Illicit connection: Any drain or conveyance, whether on the surface or subsurface, which allows a non-stormwater discharge to enter the storm sewer system and any connections to the MS4 from indoor drains, sinks, boiler blow downs, cooling towers, potable water lines or sanitary sewer lines.

(3) Illicit/unauthorized discharge: Any discharge to the storm sewer system that is not composed entirely of stormwater that causes or contributes to pollution.

(4) Leachate: Any liquid that passes through any material and picks up any part of that material that it passes through and is discharged to the environment.

(5) Municipal separate storm sewer system (MS4): A collection of underground pipes and conveyances (ditches, channels) that drain to Fort Belvoir waterways. The water that drains through the MS4 is not treated to remove pollutants. Whatever pollutants enter the MS4 directly end up in waterways.

(6) Stormwater: Precipitation that flows across the land surface or through conveyances to one or more waterways and that may include rain runoff, snow melt runoff and surface runoff and drainage.

(7) Waterways: Includes all bodies of water, but is not limited to, rivers, streams, bays, wetlands, stormwater management ponds and drainage ditches.

b. As stormwater flows across the ground, off of a roof or equipment, off of materials that are stored outside or through a parking lot, it can pick up various pollutants such as oil, grease, spilled materials, loose soil and other debris. When it rains, stormwater flows to the MS4 and eventually drains directly into Fort Belvoir waterways and ultimately to the Chesapeake Bay with no treatment to remove pollutants that were picked up along the way.

c. Fort Belvoir is committed to protecting water quality of waterways on and surrounding Fort Belvoir to ensure that human health, ecosystem health and the ability to conduct recreational opportunities are not impacted by stormwater pollution. Reference a. requires the establishment of an enforceable policy that prohibits illicit discharges and illegal dumping.

d. Prohibited Discharges into the MS4 and Waterways: The following are common sources of illicit discharges/illegal dumping at Fort Belvoir that are prohibited from entering into the MS4 and waterways: sanitary sewer overflows, trash, paint, grease, motor oil and other automotive fluids, fuel, cooking oil, salt, herbicides, fertilizer, pesticides, chemicals, liquid materials, yard wastes (grass clippings and leaves), mulch, charcoal, cigarette butts, sand, soil, construction materials, wash waters containing soaps, detergents and degreasers of any kind, acid wash water, fire hydrant and water line flushing and potable water tank discharge without prior de-chlorination, contact cooling water, leachate from dumpsters and outside material storage areas, pet/animal waste, construction wastes, and residues and noxious or offensive material of any kind. The following actions shall be taken to reduce the risk of having an illicit discharge into the MS4:

(1) Materials Storage: All personnel are responsible for ensuring proper storage of materials. Materials should be stored inside, under a roof, whenever possible. If outside storage of materials cannot be avoided, materials must be elevated off of the ground and covered to prevent stormwater from coming in contact with material and being carried into the MS4. "Keep Materials "High and Dry"! Any outdoor materials storage areas should be located away from MS4 components (inlets, drains, swales, stormwater management ponds, ditches) and waterways. Personnel responsible for bulk storage areas for items such as salt, mulch, compost, and soil stockpiles will implement best management practices to insure that material does not enter the MS4 and waterways during a storm event. Any liquid materials must be stored in adequate secondary containment.

(2) Spill Response: All personnel are responsible for following the Fort Belvoir Master Spill Plan. The Fort Belvoir Spill Response Procedures are enclosed.

(3) Waste Material Disposal: All personnel are responsible for proper disposal of all hazardous and nonhazardous waste materials, including yard wastes. Hazardous waste disposal is required to be conducted in accordance with the Fort Belvoir Hazardous Waste Minimization and Management Plan.

(4) Vehicle Cleaning, Maintenance and Storage: Operations, including fueling, cleaning and maintenance of aircraft, equipment, campers, boats and vehicles should be conducted indoors or under cover to prevent exposure to stormwater whenever possible. Cleaning of vehicles may be conducted outside only at an authorized wash rack or commercial car wash.

(5) Use of Deicing Materials: Application of any deicing agents containing urea or ethylene glycol or other forms of nitrogen or phosphorous to parking lots, roadways, runways, sidewalks or other paved surfaces is prohibited per references a. – b.

(6) Waste Container Management: All personnel are responsible for ensuring that tops and sides of dumpsters located around their building are closed and for notifying the Directorate of Public Works (DPW), Environmental Division (ENV DIV), Solid Waste Program Manager, 703-806-3766, if the dumpster is rusty, leaking or missing a drain plug that could allow for dumpster contents to leak onto the ground.

(7) Portable Toilets: All portable toilets must be located at a minimum of 25 feet away from MS4 components (inlets, drains, swales, stormwater management ponds, ditches) and waterways.

(8) Illicit Connections: All personnel are responsible for reporting any discovered or suspected illicit connections to the DPW ENRD Stormwater Program Manager, 703-806-3406.

(9) Annual Training: As required by reference a., the following personnel are required to attend annual training in the recognition, prevention and reporting of illicit discharges: personnel employed in and around maintenance and public works facilities; personnel employed for road, street and parking lot maintenance; personnel employed in and around recreational facilities; and personnel employed at facilities where Stormwater Pollution Prevention Plans have been implemented. Additional categories of personnel may require training if personnel are found to have caused an illicit discharge. DPW ENRD will schedule and provide training for all required personnel.

(10) All stormwater concerns, suspected illicit/unauthorized discharges and suspected illicit connections may be submitted via email @ usarmy.belvoir.imcom-atlantic.mbx.DPW-ENRD-Stormwater@mail.mil or by contacting the Stormwater Program Manager at 703-806-3406.

5. Proponent. Directorate of Public Works, Environmental Division, at 703-806-3406.

Encl

MICHAEL H. GREENBERG
COL, FI
Commanding

DEPARTMENT OF THE ARMY
US ARMY INSTALLATION MANAGEMENT COMMAND
HEADQUARTERS, UNITED STATES ARMY GARRISON, FORT BELVOIR
9820 FLAGLER ROAD, SUITE 213
FORT BELVOIR, VIRGINIA 22060-5928

IMBV-PW

2 August 2018

MEMORANDUM FOR All Fort Belvoir Employees (Military, Civilian, and Contractors), Residents, and Visitors

SUBJECT: Fort Belvoir Policy Memorandum #73, Stormwater Pollution Prevention Plan Requirements

1. Purpose. To ensure compliance with the Fort Belvoir VPDES Industrial Stormwater and MS4 permits by providing guidance for the development, implementation and maintenance of a Stormwater Pollution Prevention Plan (SWPPP).

2. Applicability. This policy applies to military and civilian personnel, tenant and satellite organizations, partners, and contractor activities at Fort Belvoir and Fort Belvoir North Area that are required to develop, implement and maintain a Stormwater Pollution Prevention Plan (SWPP).

3. References.

a. Army Regulation 200-1 (Environmental Quality, Environmental Protection and Enhancement 13 December 2007

b. Virginia Pollution Discharge Elimination System Permit (VPDES) Industrial Stormwater Individual Major Permit #VA0092771

c. VPDES for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4), Permit # VAR040093 (9VAC25-890-40); and

d. Stormwater Pollution Prevention Plan Requirements for Land Disturbing Activities (9VAC25-870-54)

4. Discussion.

a. Definitions:

(1) Best Management Practices (BMPs): BMPs may be classified as structural (e.g. a device installed or constructed such as a berm or a bioretention pond) or

operational/ procedural practices (e.g. minimizing use of chemical fertilizers and pesticides, stormwater pollution prevention training).

(2) High Priority Facilities: High priority facilities under the MS4 Permit include: Composting facilities, equipment storage and maintenance facilities, materials storage yards, pesticide storage facilities, public works yards, recycling facilities, salt storage facilities, solid waste handling and transfer facilities and vehicle storage and maintenance yards.

(3) Impaired Waters: Impaired waters under Section 303(d) of the Clean Water Act are waters that are too polluted to meet the water quality standards set by states, territories, or authorized tribes.

(4) Pollutants of Concern: Fort Belvoir pollutants of concern include: nutrients (phosphorous and nitrogen), silt/sediment, bacteria, oil/grease, metals, debris and trash.

(5) Total Maximum Daily Load (TMDL): a calculation of the maximum amount of a pollutant that a water body can receive and still safely meet water quality standards.

(6) Facilities covered under the Industrial Stormwater Major Permit include: facilities that meet primary Standard Industrial Classification (SIC) code, or the specific industrial activities specific activities occurring at a facility is covered under the permit. Common industrial activities covered under the permit are: hazardous waste treatment, storage, or disposal facilities; landfills that receive or have received industrial activity wastes; recycling facilities; and transportation facilities with maintenance activities on site.

b. Background. The industrial stormwater major permit and MS4 permit requirements are as follows:

(1) Reference a. requires Army installations to comply with TMDL requirements and develop and implement a Stormwater Pollution Prevention Plan (SWPPP) by integrating all aspects of the National Pollutant Discharge Elimination System (NPDES) program and ensuring that mission and non-mission activities utilize Best Management

Practices (BMPs) to prevent exceeding TMDL limits of pollutants of concern to impaired waters.

(2) References b. and c. require that Fort Belvoir develop, implement and maintain facility SWPPPs for each tenant, contractor or facility operators that carry out industrial activities or are located at high priority facilities.

(3) References c. and d. require that all construction contractors develop SWPPPs for projects disturbing one acre or greater of land.

c. Policy: Fort Belvoir is committed to protecting water quality of waterways on and surrounding Fort Belvoir to ensure that human health, ecosystem health and the ability to offer recreational opportunities are not impacted by stormwater pollution. References a. and b. require development, implementation and maintenance of a Stormwater Pollution Prevention Plan (SWPPP). The following requirements are necessary to maintain compliance with stormwater permit requirements:

(1) All commanders, supervisors and facility operators shall implement and maintain the SWPPP and shall provide trained and capable staff to actively take part in the Fort Belvoir Pollution Prevention Team, to complete facility inspections, maintain operational compliance and provide all required documentation in a timely manner.

(2) Commanders, supervisors, and facility operators shall ensure that all SWPPP and permit required notifications and reporting, and any action plans are completed and submitted by the regulatory due dates.

(3) Commanders, supervisors, and facility operators shall ensure that the Directorate of Public Works (DPW) Industrial Stormwater Program and MS4 Stormwater Program Managers are notified of any changes to personnel of the Pollution Prevention Team, changes in command, supervisors or facility operators within 30 days of said change. In addition, to ensure that there is a seamless transition of staff that participates in the Pollution Prevention Team, new pollution prevention team members shall receive SWPPP training within 30 days of assuming the new position.

(4) For construction projects involving land disturbance of one acre or greater, the construction contractor is required to submit a SWPPP to the MS4 Stormwater Program Manager along with a completed Directorate of Public Works SWPPP checklist for review PRIOR to the commencement of construction. The construction contractor shall develop a SWPPP utilizing the U.S. Environmental Protection Agency template located at: https://www.epa.gov/npdes/developing-stormwater-pollution-prevention-plan-swppp. The construction contractor is required to update the SWPPP no later than seven days following any modification to its implementation. The construction contractor is responsible for regulatory compliance with all additional SWPPP requirements as identified in the Construction General Permit (9VAC25-880-70, Part II Stormwater Pollution Prevention Plan).

(5) Enforcement of regulatory required reporting shall be conducted in accordance with facility specific SWPPPs in Appendix D – Additional Guidance.

5. Proponent. Directorate of Public Works, Environmental Division, at 806-0627 or 806-3406.

MICHAEL H. GREENBERG
COL, FI
Commanding

2018

APPENDIX F

EDUCATIONAL MATERIALS FOR PCB TMDL

FORT BELVOIR

Polychlorinated Biphenyl (PCB)

- PCBs are a man-made chemicals known as chlorinated hydrocarbons. They were used between 1929 and 1979 in common electrical devices such as transformers, in hydraulic fluids and lubricants.
- The Potomac River and a number of its tributaries have been listed as impaired surface waters due to PCB contamination of sediments and fish tissue
- PCB hazards in food are probably the single most significant source of exposure for people. PCBs can be highly concentrated in the fish of waters contaminated with even low levels of PCBs. Predator fish at the top of the food chain as well as bottom feeding fish, tend to contain the highest PCB levels in those waters.

***Pay attention to signs posted in fishing areas**

PCBs at Fort Belvoir

- A comprehensive study and evaluation of historic PCB use and potential contamination was completed at Fort Belvoir identifying 13 sites of concern
- Residual PCB contamination in soil can migrate due to soil erosion and land disturbing activities that may release sediment to streams
- PCB containing equipment, such as light ballasts, require special storage and handling. Contact DPW/ENRD Hazardous Waste Program at 703-806-4537
- If you locate or identify leaking electrical equipment at Fort Belvoir, or another potential source of PCB contamination, contact DPW/ENRD at 703-806-0200 or 703-806-3694

*** Always exercise caution and do not touch possible contaminates***

A typical pre-1979 PCB-containing fluorescent light ballast (FLB)

WHAT TO LOOK FOR...

- Yellow, oily liquid or tar-like potting material that leaks from the FLB or transformers.
- Older, derelict transformers around the Installation

How YOU can help...

1. *Get familiar with PCBs*—Knowing what PCBs are and how to identify them is key to reducing potential exposure.
2. *See something, say something*—Before PCBs were restricted, there were no regulations on how to safely discard the items and the long-term environmental effects were still unknown. Therefore, many transformers and electrical equipment were discarded in forests and unoccupied sites. If you see something that looks misplaced out in a field or the woods, report it to DPW.
3. *Take smart actions*—Exercise caution if you come across what you think might be contaminated with PCBs. Report the PCB contamination to DPW/ENRD

REPORT POTENTIAL PCB SOURCES IMMEDIATELY!

A leaking fluorescent light ballast or transformer may increase PCB levels in the air, therefore, measures should be taken to avoid personal exposure and future exposure for others.

A typical pre-1979 PCB-containing fluorescent light ballast

HOW TO REPORT TO DIRECTORATE OF PUBLIC WORKS

1. Call the Environmental an Natural Resources Division at:
   703-806-3406
   703-806-0137
2. Report what was observed and the location of potential PCB contamination

PCBS & HOW TO KEEP YOURSELF SAFE

Typical PCB-containing Transformer

WHAT ARE PCBs?

Polychlorinated **B**iphenyls belong to a class of man-made chemicals known as chlorinated hydrocarbons. PCBs were prominently manufactured by the US between 1929 and 1979. Due to their chemical stability, non-flammability, and superior insulating properties PCBs were used in a large number of industrial and commercial products.

Products that used PCBs:

- Electrical equipment
- Paints
- Plastics
- Dyes and pigments
- Light bulbs
- Caulking
- Carbon paper
- Transformers and capacitors
- Adhesives and tapes
- Floor finish

The discharge of PCB's into the environment was outlawed by federal environmental regulations in 1976 but the effects of PCBs are still being felt today. PCBs are unique in that PCB molecules bind to fine sediments and can remain stable in the environment for long periods cycling between air, water, and soil.

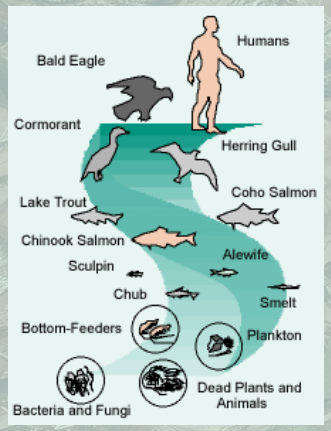
1865 First PCB-like chemical discovered

1929 EPA banned manufacturing of PCBs

1929-1979 2 million tons of PCBs were produced

WHY ARE PCBs SO HARMFUL?

During the time PCB's were manufactured, there were no regulated controls on disposal. PCBs do not break down easily and therefore are found widely distributed in our environment. PCB concentrations in the environment are quite low, however, because of bioaccumulation, this becomes harmful to humans and other predatory animals in high concentrations.



Bioaccumulation occurs when bottom feeders ingest sediment containing PCBs. Larger animals then eat these bottom feeders multiplying the amount of PCBs they have in their body. PCB's can become a million times more concentrated in larger predatory animals such as fish and birds. So when we eat fish that come from contaminated streams we are at risk of consuming large amounts of PCB's as well.

1977 EPA makes it illegal to discharge PCBs into navigable water

1978 EPA increased PCB regulation limit (500 ppm to 50 ppm)/ EPA began controlling PCB waste disposal

1979 EPA banned manufacturing of PCBs

HOW TO IDENTIFY PCBs?

PCBs have no known taste or smell, and range in consistency from an oil to a waxy solid. It can be difficult to distinguish PCB's from other materials so it is important to become familiar with the most common sources of PCB's contamination. **PCBs are most commonly reported in:**

- Poorly maintained hazardous waste sites
- Leaks from old electrical transformers

The following criteria are provided to help identify transformers and Fluorescent Light Ballasts (FLBs) that may contain PCBs:

- FLBs and Transformers manufactured before July 1, 1979 may contain PCBs
- Products manufactured between July 1, 1979 and July 1, 1998 that do not contain PCBs must be labeled "No PCBs"
- If an FLB or Transformer is not labeled "No PCBs," it is best to assume it contains PCBs unless it is manufactured after 1979
- Products manufactured after 1998 are not required to be labeled

2002 Potomac River placed on DEQ Impaired list for PCB in fish tissue

2010 Accotink Creek placed on DEQ Impaired list for PCB in fish tissue

2015 PCB TMDL Action was implemented at Fort Belvoir

PCB POLLUTION AWARENESS - BMP FACTSHEET 2.6

FORT BELVOIR, VIRGINIA

Definition and Purpose:

Prevent or reduce the discharge of pollutants to stormwater. To provide guidance on the correct pollution prevention practices when identifying and dealing with PCB contaminants.

The goal of ensuring proper pollution prevention practices when identifying and dealing with PCB contaminated soils and waste materials is to prevent unnecessary and unlawful discharges of harmful pollutants into our waterways. Facility owners will be required to comply with various safeguard requirements.

Approach:

The new permit authorizes certain new and existing discharges of stormwater to receiving waters in accordance with your facilities effluent limitations and includes the development and implementation of BMPs (Best Management Practices). In order to ensure BMPs are being implemented, visual inspections and sampling of outfalls will be performed periodically and during the course of the SWPPP annual inspections.

***Existing and New Facilities*:** When complaint investigations or routine stormwater audits for current facilities indicate impacts to water resources due to poor management practices, ENRD can take action to address any problems identified. Infrastructure and equipment, in addition to BMP implementation, are evaluated during inspections. To minimize the potential for compliance issues and to reduce liability, it is highly recommended that the precautions in this document be followed.

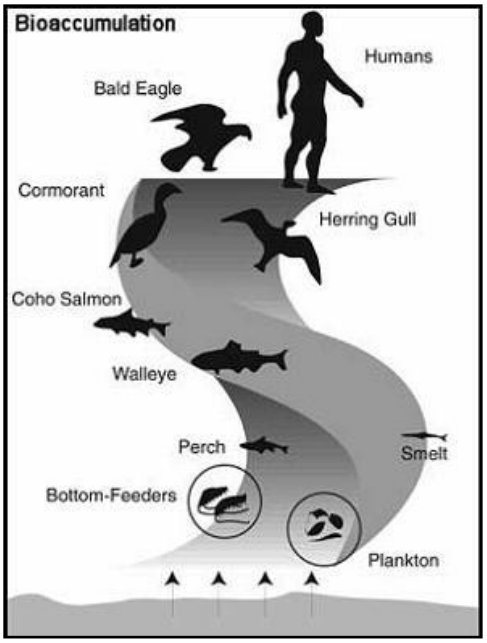
What are PCBs?

PCB stand for Polychlorinated Biphenyls. They belong to a class of man-made chemicals known as chlorinated hydrocarbons. PCBs were manufactured by the US between 1929 and 1979. Due to their chemical stability, non-flammability, and superior insulating properties PCBs were used in a large number of industrial and commercial products. These products include; electrical equipment, paints and plastics, dyes and pigments, light bulbs, caulking, carbon paper, and many types of adhesives.

Environmental Impacts of PCBs

The discharge of PCBs into the environment was outlawed by federal environmental regulations in 1976 but the effects of PCBs are still being felt because PCBs are unique in that PCB molecules bind to fine sediments and can remain stable in the environment for a very long time.

Between 1929 and 1979 when PCBs were manufactured, there were no laws regulating disposal. Because PCBs do not break down easily, they are now found widely distributed in our environment. Generally their concentrations in the environment are quite low, however, the chemical properties of PCBs cause them to be concentrated up the food chain through a process called bioaccumulation. Bioaccumulation takes place when bottom feeders that ingest sediment containing PCBs are eaten by larger animals. PCBs can become a million times more concentrated in larger predatory animals such as fish and birds. So when we eat fish that come from contaminated streams we are at risk of consuming large amounts of PCBs as well. See diagram below that helps explain what bio accumulation is.



The health effects of PCBs have been widely studied. Evidence shows that PCBs cause a variety of adverse health effects including developmental disorders, cancer, and disorders of the immune system, reproductive system, nervous system, and endocrine system.

How might I be exposed to PCBs?

Although PCBs are no longer manufactured or widely used today, there are still a few ways that people can be exposed to concentrated PCBs. The most common exposure routes include:

Food: PCBs in food are probably the single most significant source of exposure for people. PCBs can be highly concentrated in the fish of waters contaminated with even low levels of PCBs. Predator fish at the top of the food chain as well as bottom feeding fish, tend to contain the highest PCB levels in those waters. Make sure the fish you eat does not come from areas of known PCB contamination. Pay attention to signs posted in fishing areas.

Surface Soils: The health hazard related to soil is the potential for people to swallow small amounts of the soil and for the soils to runoff to lakes and rivers and concentrate in fish and other wildlife.

Drinking Water and Groundwater: Fortunately PCBs are not very water-soluble so it is rare for them to be found in groundwater. Some submersible pumps found in private wells have

been recalled because PCB containing oils had been used in their manufacture. When these pumps fail these oils can leak out into the drinking water.

Indoor Air: Older fluorescent lights found in schools, offices, and homes may still contain transformers or ballasts that contain PCBs. If the ballasts fail, PCBs can leak out and contaminate exposed surfaces and the air.

Identification and Reporting of PCBs

PCBs have no known taste or smell, and range in consistency from an oil to a waxy solid. It can be difficult to distinguish PCBs from other materials so it is important to become familiar with the most common sources of PCBs contamination. PCBs are most commonly reported in poorly maintained hazardous waste sites and leaks from old electrical transformers.

Fort Belvoir also has many older sites that may house old transformers or Fluorescent Light Ballasts (FLBs) that have not yet been discovered and therefor disposed of properly.

A typical pre-1979 PCB-containing fluorescent light ballast (FLB)

The following criteria are provided to help identify Transformers and FLBs that may contain PCBs:

- FLBs and Transformers manufactured before July 1, 1979 may contain PCBs
- Products manufactured between July 1, 1979 and July 1, 1998 that do not contain PCBs must be labeled "No PCBs"
- If an FLB or Transformer is not labeled "No PCBs," it is best to assume it contains PCBs unless it is manufactured after 1979
- Products manufactured after 1998 are not required to be labeled

PCBs may be present as a yellow, oily liquid or in the tar-like potting material that leaks from the FLB or Transformers. A leaking FLB or Transformer may increase PCB levels in the air, therefore, measures should be taken to avoid personal exposure.

****Always exercise caution if you come across what you think might be contaminated with PCBs. If you believe you may have found a source of PCB contamination contact DPW/ENRD at 703-806-0020 or 703-806-3694**

For questions and additional information contact DPW / ENRD at 703- 805-0048 or 703-806-3847

PCB AWARENESS
BMP FACTSHEET 17 Rev. 04/2019

A typical pre-1979 PCB-containing fluorescent light ballast (FLB)

Targeted Pollutants	
Sediment	
Nutrients	
Trash	
Metals	
Bacteria	
Oil & Grease	
Chemicals	X
Salt	

Objectives	
Cover	
Contain	
Educate	X
Reduce/Minimize	
Product Substitution	

DESCRIPTION

PCB stands for Polychlorinated Biphenyl. This chemical is a class of man-made chemicals known as chlorinated hydrocarbons. PCB's were manufactured by the US between 1929 and 1979. Due to their chemical stability, non-flammability, and superior insulating properties, PCBs were used in a large number of industrial and commercial products. These products include; electrical equipment, paints and plastics, dyes and pigments, light bulbs, caulking, carbon paper, and many types of adhesives.

****Always exercise caution if you come across what you think might be a contaminated area or old equipment (transformers and light ballasts) with PCBs. If you believe you may have found a source of PCB contamination contact DPW/ENV. DIV. at 703-806-0020 or 703-806-3694.**
SEE SOMETHING, SAY SOMETHING!**

IDENTIFICATION GUIDELINES

PCBs have no known taste or smell and range in consistency from an oil to a waxy solid. It can be difficult to distinguish PCBs from other materials so it is important to become familiar with the most common sources of PCBs contamination. PCBs are most commonly reported in poorly maintained hazardous waste sites and leaks from old electrical transformers.
Fort Belvoir also has many older sites that may house old transformers or Fluorescent Light Ballasts (FLBs) that have not yet been discovered and therefore disposed of properly. The following criteria are provided to help identify transformers and FLBs that may contain PCBs:

- FLBs and transformers manufactured before July 1, 1979 may contain PCBs.
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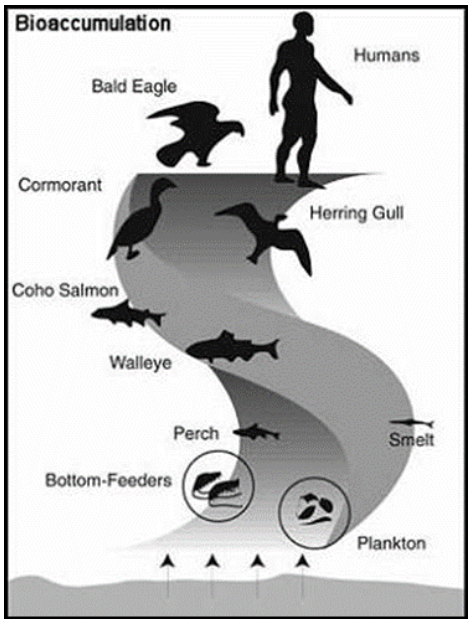
- If a FLB or Transformer is not labeled "No PCBs", it is best to assume it contains PCBs unless it is manufactured after 1979.
- Products manufactured after 1998 are not required to be labeled.

PCBs may be present as a yellow, oily liquid or in the tar-like potting material that leaks from the FLB or transformer. A leaking FLB or transformer may increase PCB levels in the air. Therefore, measures should be taken to avoid personal exposure.

PCB AWARENESS
BMP FACTSHEET 17

ENVIRONMENTAL IMPACTS OF PCBs

The discharge of PCBs into the environment was outlawed by federal environmental regulations in 1976. However, the effects of PCBs are still evident today because PCB's are unique in that PCB molecules bind to fine sediments and can remain stable in the environment for a very long time. Between 1929 and 1979 when PCBs were manufactured, there were often no effective controls for disposal. Because PCBs do not break down easily, they are now found widely distributed in our environment. Generally concentrations in the environment are quite low, however, the chemical properties of PCBs cause them to be concentrated up the food chain through a process called bioaccumulation. Bioaccumulation takes place when bottom feeders that ingest sediment containing PCBs are eaten by larger animals. PCBs can become a million times more concentrated in larger predatory animals such as fish and birds. So when we eat fish that come from contaminated streams we are at risk of consuming large amounts of PCBs as well. See diagram below that helps explain what bio accumulation is. The health effects of PCBs have been widely studied. Evidence shows that PCBs cause a variety of adverse health effects including developmental disorders, cancer, and disorders of the immune system, reproductive system, nervous system, and endocrine system.



POSSIBLE EXPOSURE TO PCBS

Because PCBs are no longer manufactured or widely used today, there are relatively few ways that people can be exposed to concentrated PCBs. The most common exposure routes include:

- Food**:** PCBs in food are probably the single most significant source of exposure for people. PCBs can be highly concentrated in the fish of waters contaminated with even low levels of PCBs. Predator fish at the top of the food chain as well as bottom feeding fish, tend to contain the highest PCB levels in those waters. Make sure the fish you eat does not come from areas of known PCB contamination. Pay attention to signs posted in fishing areas.
- Surface Soils: The health hazard related to soil is the potential for people to swallow small amounts of the soil and for the soils to runoff to lakes and rivers and concentrate in fish and other wildlife.
- Drinking Water and Groundwater: Fortunately PCBs are not very water-soluble so it is rare for them to be found in groundwater. Some submersible pumps found in private wells have been recalled because PCB containing oils had been used in the manufacturing of the pump. When these pumps fail PCB oils can leak out into the drinking water.
- Indoor Air: Older fluorescent lights found in schools, offices, and homes may still contain transformers or ballasts that contain PCBs. If the ballasts fail, PCBs can leak out and contaminate exposed surfaces and the air.