

Draft

Corrective Measures Study Final Report SWMU 10

Naval Station Roosevelt Roads

RCRA/HSWA Permit No. PR2170027203

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LIST OF ACRONYMS AND ABBREVIATIONS

AOC	Area of Concern
Baker	Baker Environmental, Inc.
CAO	Corrective Active Objective
CMS	Corrective Measure Study
COCs	Chemicals of Concern
ICM	Interim Corrective Measure
LANTDIV	Atlantic Division, Naval Facilities Engineering Command
NSRR	Naval Station Roosevelt Roads
OU	Operable Unit
PCB	Polychlorinated biphenyl
RA	Risk Assessment
RCRA	Resource Conservation and Recovery Act
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigations
RI/FS	Remedial Investigation/Feasibility Study
SWMUs	Solid Waste Management Units
SVOCs	Semivolatile Organic Compounds
TSCA	Toxic Substance and Control Act
USEPA	United States Environmental Protection Agency
VOCs	Volatile Organic Compounds

1.0 INTRODUCTION

This document presents the Corrective Measure Study (CMS) Report for Solid Waste Management Unit (SWMU) 10 at the Naval Station Roosevelt Roads (NSRR), Ceiba, Puerto Rico. This report has been prepared under the Corrective Action provisions of NSRR's Resource Conservation and Recovery Act (RCRA) permit (RCRA/HSWA Permit No. PR2170027203) by Baker Environmental, Inc. (Baker) under contract to the Atlantic Division, Naval Facilities Engineering Command (LANTDIV). This CMS Report is streamlined due to the absence of contamination at SWMU 10, and the recommended alternative of no further action.

1.1 Regulatory Framework

RCRA regulations provide a procedure to investigate and remediate areas that may have been affected by a release of hazardous wastes. The first steps for investigating a site are the RCRA Facility Assessment (RFA) and the RCRA Facility Investigation (RFI). These assessments and investigations are studies on a property to determine if there has been a release of hazardous waste and to quantify any releases that have occurred. If these studies determine that a release has occurred, a CMS is performed to identify the most appropriate corrective measure for a given site.

A RFA was performed in 1988 and updated in 1993 by A.T. Kearney, Inc. for the United States Environmental Protection Agency (USEPA) to identify SWMUs and areas of concern (AOCs), and to assess the potential for the release of hazardous constituents from any areas or units. The RFA identified 47 SWMUs and 4 AOCs, and recommended additional investigation at 25 of the SWMUs and all AOCs. In 1996, a Draft RFI report was prepared for Operable Units (OUs) 1, 6, and 7, which included SWMU 10. Additional investigations, described in Section 2.0 of this report, were also conducted. Because the RFA and other initial investigations indicated that releases had occurred, an Interim Corrective Measure (ICM) was deemed necessary. In response to a request from the USEPA, this CMS Report has been prepared to fulfill the RCRA reporting requirements. This CMS Report specifically focuses on the soil and groundwater at SWMU 10, ensuring that all work performed to date is protective of human health and the environment.

1.2 Intent of the Focused CMS

The purpose of a CMS is typically:

- to identify and evaluate remedial alternatives that may be used to address a release at a facility;
- to justify the recommended corrective action based upon technical, human health, and environmental considerations;
- to determine clean up levels;
- to provide a system for reporting compliance requirements and use this system to document remediation activities; and
- to provide information pertinent to the remedial design.

However, in a situation where the extent of contamination is limited and no remedial action is required, as is the case at SWMU 10, a streamlined approach to this process was implemented. A highly focused or streamlined CMS is appropriate for facilities that have “straightforward remedial solutions” (USEPA, 1994).

The goals of this CMS are:

- to document the appropriate technical approaches that addressed polychlorinated biphenyl (PCB) contamination at SWMU 10;
- to support the selected remedial alternative of no further action; and
- to ensure that the actions conducted to date are protective of human health and the environment.

1.3 Organization of the Report

As stated previously, this report is the streamlined CMS for SWMU 10. This CMS is organized into five sections. Section 1.0 contains the introduction. Section 2.0 describes the site, the investigative history, and the current site conditions. Section 3.0 discusses the corrective action objectives based upon the human health risk assessments and the developed risk-based remediation goals. Section 4.0 presents the conclusions and justification of no further remedial action at SWMU 10. References are contained in Section 5.0.

2.0 DESCRIPTION OF CURRENT CONDITIONS

This section contains a general site description of SWMU 10. The investigative history and site conditions are also discussed in this section. Figure 2-1 shows the location of SWMU 10 at NSRR.

2.1 General Site Description

SWMU 10 is located near the intersection of Forrestal Drive and Valley Forge Road. The site is relatively flat and surrounded by shallow drainage ditches associated with the roadways. This area was formerly used to repair electrical transformers. Past activities at SWMU 10 reportedly included pouring PCB-containing transformer oil directly on the ground.

2.2 Investigation History

The following is a chronological summary of the investigation history at SWMU 10:

- 1984 Initial Assessment Study
- 1988 Confirmation Study
- 1988 RCRA Facility Assessment
- 1992 Remedial Investigation/Feasibility Study
- 1993 Interim Remedial Action Decision Document
- 1993 Draft Supplemental Investigation
- 1995 Interim Corrective Measure

The above investigations were conducted by consultants other than Baker. The results of these investigations are summarized in Section 2.3.

- 1996 RCRA Facility Investigations
- 1998 Additional Facility Investigations

Baker performed the RFI and the Additional Facility Investigation. The 1996 RFI focused on sites in OUs 1, 6, and 7, which included SWMU 10. The purpose of the additional investigation at SWMU 10 was to further characterize the groundwater to determine whether PCBs had migrated to the groundwater beneath the site, and to provide adequate support for the no further action recommendation. The results of these investigations are summarized in Section 2.3.

2.3 Site Conditions

The 1984 Initial Assessment Study (Greenleaf/Telesca Planners, 1984) and the 1992 Remedial Investigation/Feasibility Study (RI/FS) (Versar, 1992) concluded that the soil at SWMU 10 was contaminated with PCBs. SWMU 10 was remediated during the 1995 Interim Corrective Measure (ICM) by excavating the surface layer (approximately 1 foot) of PCB-contaminated soil from across the site, totaling about 235 cubic yards of soil. Subsurface contaminated soil was also excavated from limited portions of the site. The ICM closeout report (OHM Remediation Services and Metcalf & Eddy, Inc., 1995) only addressed soil contamination, and was provided to the USEPA in May of 1995. The results of the ICM confirmation sampling verify that all PCB contaminated soil was removed, and that remaining concentrations in soil are below the cleanup level of 10 parts per million, as determined in the 1993 Interim Remedial Action Decision Document. The Interim Remedial Decision Document refers to the cleanup level specified in the Toxic Substance and Control Act (TSCA), 40 CFR 761.125 (c)(4)(v) for PCB spills in nonrestricted access areas.

Because the possibility of migration of PCBs to the underlying groundwater existed, a Phase I RFI was conducted. The initial groundwater sampling effort resulted in only one sample being analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and PCBs, due to insufficient groundwater for sampling. Two other samples were analyzed for VOCs only, due to slow recharge. Some VOCs and SVOCs were found in the groundwater samples, however they were likely sampling and laboratory contaminants. PCBs were not detected in the one sample and no evidence of groundwater impact related to site waste management activities was seen, as a result of the initial 1996 RFI.

As requested by the EPA, an additional sampling program was developed and approved, in order to further characterize the groundwater at SWMU 10, and to adequately demonstrate that the groundwater was not impacting human health or the environment. Three temporary wells were installed at the site during the Additional Facility Investigation. The well locations are illustrated on Figure 2-2. No purging or development of the wells was performed due to the relatively small amount of groundwater infiltration. Each well was sampled and analyzed for PCBs, SVOCs, and VOCs, as agreed upon by the EPA. No VOCs, SVOCs or PCBs were detected in the three temporary wells collected from SWMU 10 during the 1998 Additional Facility Investigation (Baker, 1998).

3.0 ESTABLISHMENT OF CORRECTIVE ACTION OBJECTIVES

This section provides a brief summary of corrective action objectives (CAOs) and the process by which they are determined. Corrective action objectives were not developed for SWMU 10 because no chemicals of concern (COCs) were identified based on the results of the sampling efforts. The sampling results showed no groundwater contamination and no contaminants in soil above cleanup levels.

3.1 Corrective Action Objectives Summary

Corrective action objectives are medium-, site-, and chemical-specific goals for the protection of human health and the environment based on current and likely future property use scenarios. The corrective action objectives are used to focus the development of appropriate response actions that meet or exceed site specific cleanup goals in a cost-effective manner.

Corrective action objectives can be specific and numerical (i.e., quantitative) or general and descriptive (i.e., qualitative). They are achieved by reducing exposure (e.g., installing a soil cover or limiting access) or by reducing contaminant levels (e.g., active remediation). Important components in the development of corrective action objectives include: the identification of media of concern/COCs and identification of potential exposure routes and receptors from the baseline risk assessment (RA) presented in the Draft RFI Report for Phase I Investigations at Operable Units 1, 6, and 7 (Baker, 1996) and in the Draft Additional Facility Investigation Report for Operable Units 1, 6, and 7 (Baker, 1998).

COCs are those chemicals responsible for the majority (i.e., 90 percent or more) of an unacceptable human health risk for a given medium. Once COCs are identified, current and potential future land use is evaluated to identify receptors and potential exposure routes. COCs, land use and exposure can then be more thoroughly evaluated to identify site-specific corrective action objectives, if necessary.

3.2 SWMU 10

SWMU 10 is located in an industrialized area of NSRR where the potential for human exposure and ecological exposure is limited by ongoing activities in support of the Station's mission. The mission for NSRR is unlikely to change in the future.

The results of sampling and investigation at SWMU 10 have verified that all PCB contaminated soil has been removed, and that the remaining concentrations are less than the cleanup level of 10 ppm. Groundwater samples taken as part of the Additional Facility Investigation have also shown no detections of PCBs, VOCs, or SVOCs. Since no contaminants were detected in groundwater and the only contaminant detected in soil (PCBs) has been adequately remediated, there are no COCs identified, and therefore, no need to determine corrective action objectives for SWMU 10.

4.0 CONCLUSIONS AND RECOMMENDATIONS

SWMU 10 was subjected to a soil removal action for PCBs in 1995. All confirmatory soil sample results were below the PCB cleanup level. Also, the groundwater sampled from three temporary wells in 1998 showed no presence of PCBs, VOCs or SVOCs. No COCs were identified or evaluated, and corrective action objectives were not determined for SWMU 10.

No remedial action is required for SWMU 10 based on the results of the 1995 ICM, and the 1998 RFI. Therefore, the no further action recommendation is warranted.

5.0 REFERENCES

Atlantic Division, Naval Facilities Engineering Command, Environmental Quality Division. 1993. Installation Restoration Program Interim Remedial Action Decision Document for the Surface Soils of Operable Unit Substation No. 2 (Site 15), Building 90. November 1993

Baker Environmental, Inc. (Baker). 1996. RCRA Facility Investigation Report for Phase I Investigations at Operable Units 1, 6, and 7, Naval Station Roosevelt Roads, Ceiba, Puerto Rico. July, 1996.

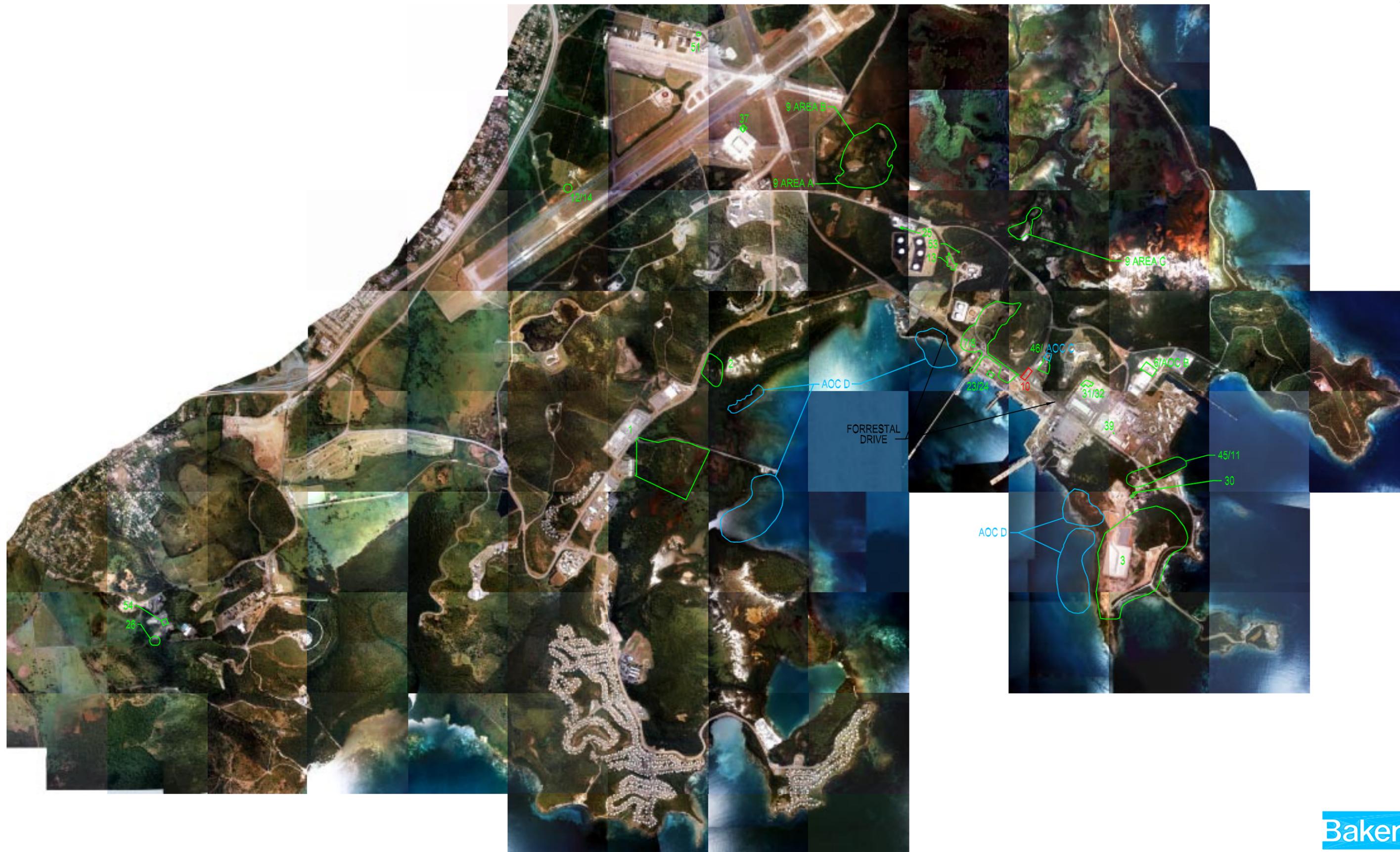
Baker. May 1998. Additional Facility Investigations Report Operable Units 1, 6, and 7, Naval Station Roosevelt Roads, Ceiba, Puerto Rico. May 6, 1998.

Greenleaf/Telesca Planners. 1984. Initial Assessment Study of Naval Station Roosevelt Roads, Puerto Rico. August 1994.

OHM Remediation Services. May 1995. Final Closeout Report for Interim Remedial Action of PCB Contaminated Soils at Sites 15 & 16. May 1995.

United States Environmental Protection Agency (USEPA). 1994. RCRA Corrective Action Plan. Office of Solid Waste and Emergency Response. OSWER Directive 9902.3-2A. May 1994.

Versar, Inc. 1992. Remedial Investigation/Feasibility Study for Site 15, Naval Station Roosevelt Roads, Puerto Rico. May 15, 1992.



LEGEND

-  - SWMUs
 -  - AOCs
 -  - AREA OF WHICH THIS INVESTIGATION PERTAINS TO
- SOURCE: GEO-MARINE, INC., SEPTEMBER 6, 2000.

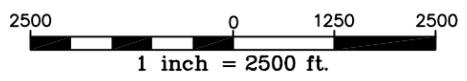
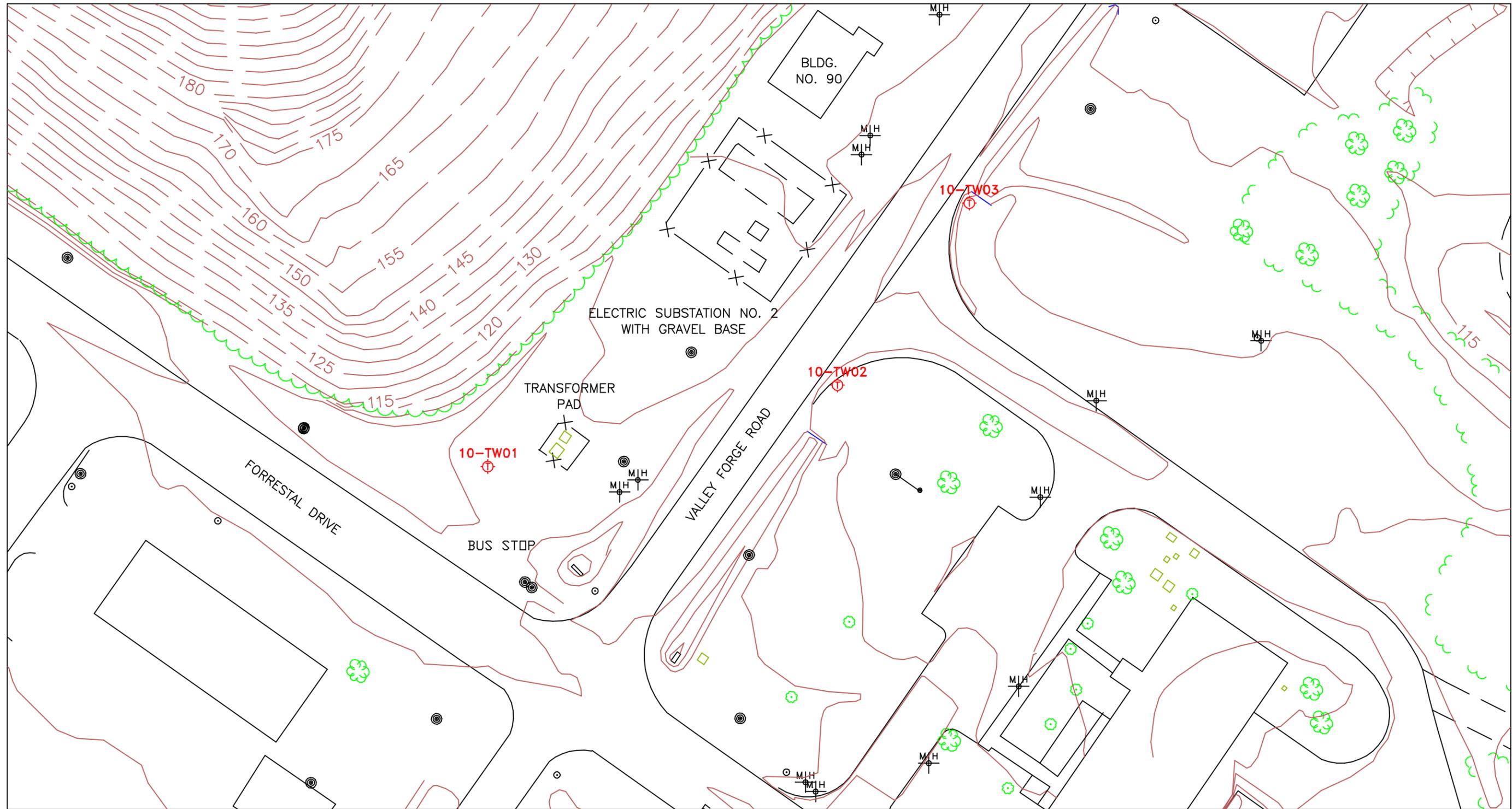


FIGURE 2-1
SWMU/AOC LOCATION MAP
 NAVAL STATION ROOSEVELT ROADS
 PUERTO RICO



LEGEND

-  TEMPORARY MONITORING WELL (PHASE II RFI)
-  BUILDING OR STRUCTURE
-  SURFACE ELEVATION CONTOUR

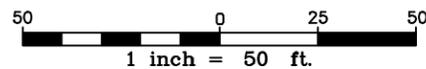


FIGURE 2-2
SWMU 10 SAMPLE LOCATION MAP
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO