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RECORD OF DECISION EXPLANATION OF SIGNIFICANT DIFFERENCES SOLID WASTE
MANAGEMENT UNIT 1 (SWMU 1) ENGLISH VERSION VIEQUES ISLAND PUERTO RICO

10/01/2016
CH2M HILL



Record of Decision

Explanation of Significant Differences

Solid Waste Management Unit 1

Vieques, Puerto Rico

Change to the Selected Remedy of Enhanced Native Soil Cover and Institutional Controls

INTRODUCTION AND STATEMENT OF PURPOSE

An Explanation of Significant Differences (ESD) is warranted for Solid Waste Management Unit 1 (SWMU 1) at the Atlantic Fleet Weapons Training Facility (AFWTF), Former Vieques Naval Training Range (VNTR), Vieques, Puerto Rico, to revise one aspect of the remedy selected in 2011 consisting of Enhanced Native Soil Cover, Institutional Controls (ICs), Long-term monitoring (LTM), and Operation and Maintenance (O&M). This change is because of the greater amount of surface debris found across the landfill than was originally anticipated. Because of this, the Navy and Environmental Protection Agency (EPA), in consultation with the Puerto Rico Environmental Quality Board (PREQB) and United States Department of Interior (DOI), jointly determined removal of surface debris across the landfill was preferable to covering the debris. This action, and a revised risk assessment considering both surface and subsurface soil, demonstrated that there are no unacceptable risks remaining, thereby obviating the need for additional soil cover in order to meet the objectives set forth in the remedy selected for the 2011 record of decision (ROD). None of the other aspects of the 2011 ROD are changed by this ESD; the long-term groundwater monitoring, the institutional controls, and O&M requirements remain unchanged.

The Navy and EPA are issuing this ESD for SWMU 1 as part of the requirements under Section 117(c) of CERCLA, Section 300.435(c)(2)(i) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), and the Navy Installation Restoration Program (IRP). In accordance with Section 300.825(a)(2) of the NCP, this ESD and all documents that form the basis for the decision to modify the originally selected remedy are part of the Administrative Record for this response action and contain background information that was used in determining the modifications to the selected remedy, as documented in this ESD. The Administrative Record is available for review at the following web site:

<http://www.navfac.navy.mil/vieques>

This ESD clarifies why change to what the ROD described as Enhanced Native Soil Cover is appropriate. With the change documented in this ESD, the remedy will continue to meet the remedial action objectives identified in the ROD.

SITE HISTORY, CONTAMINATION, AND SELECTED REMEDY

Site History

According to the Navy Assessment and Control of Installation Pollutants (NACIP) *Initial Assessment Study Report* (IAS), SWMU 1 was in operation from approximately 1954 to 1978 (Greenleaf/Telesca, 1984). While SWMU 1 was operational, it was an unlined landfill that was used to dispose of paper, corrugated containers, cans and food packaging material, rags, scrap metal, and yard waste. Municipal waste from both Camp Garcia and other areas of the VNTR was handled here. SWMU 1 and the Camp Garcia area within the former VNTR are shown in **Figure 1**. Approximately 1,800 to 3,120 tons of wastes were reportedly disposed of in the SWMU 1 landfill, as noted in the IAS (Greenleaf/Telesca, 1984).

During operation of the landfill, the trench method of disposal was employed, and land clearing was kept to a minimum to avoid erosion at the landfill. A bulldozer was used to dig a trench into which materials were disposed. The trench was then covered with about 6 inches of soil to control blowing of litter. The landfill was closed in 1978, and a 2-foot thick soil cover was reportedly placed over the trenches.

Waste from a maximum of approximately 150 individuals was managed at the landfill, depending on military exercises. An aerial photograph analysis of the former landfill operations indicates that the fill area extended over an area of approximately 50 acres (Lockheed Martin, 1999). Although geophysical evaluation and test pitting performed during the Phase I Resource Conservation and Recovery Act Facility Investigation (RFI) and the Expanded Site Inspection (ESI) suggested the landfill covered an area of approximately 41 acres, additional geophysical evaluation conducted during implementation of the

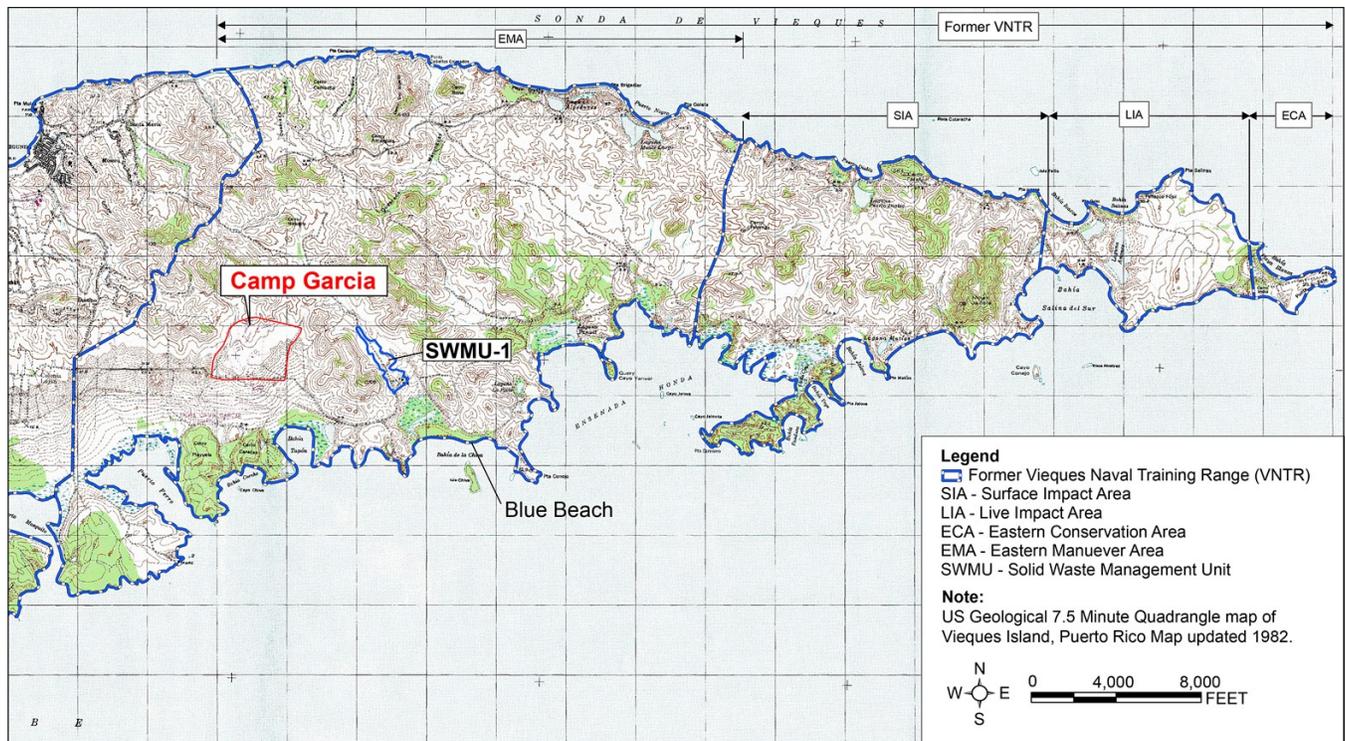
remedial action confirmed the landfill area to be approximately 51 acres.

Prior to the surface debris removal, the landfill was vegetated with dense grasses and trees. A gravel road was constructed down the center of the landfill in the mid-1980s, but the road had also become vegetated. During a visual site inspection, no signs of erosion or stressed vegetation were observed (PREQB-Vargas, 1995), nor was stressed vegetation observed during the ESI or surface debris removal activities. No documentation was found regarding releases of hazardous constituents from the landfill. Several areas of debris (fill material) were observed during the clearing of transects for the Phase I RFI. Debris observed included galley (kitchen) waste (cans, bottles, forks, and knives), metal pipes, and a small metal tank. Observations while test pitting during the ESI suggest some munitions debris was also disposed of in the landfill.

Evaluation of historical data collected regarding SWMU 1 is presented in the Final Preliminary Assessment/Site Investigation (PA/SI) Report (CH2M HILL, 2008) and the Final SI/ESI Report (CH2M HILL, 2010). Although the data collected during the Phase I RFI suggest there had not been a release from the landfill that posed a potentially unacceptable risk, only surface soil and groundwater

samples were collected and analyzed at that time (i.e., no soil samples within and beneath debris nor ephemeral stream samples were collected). Based on this information, SWMU 1 was part of an ESI for which the fieldwork, described in a sampling and analysis plan (CH2M HILL, 2009), was completed in May 2009. During the ESI, geophysical surveying, test pitting, waste characterization, soil sampling, ephemeral stream sampling, monitoring well installation, and groundwater sampling were performed. The Final SI/ESI Report, which included SWMU 1, was submitted in August 2010 (CH2M HILL, 2010). Based on the findings documented in the Final SI/ESI Report and consistent with EPA guidance, a Streamlined Remedial Investigation/Feasibility Study (RI/FS) Report for a presumptive remedy was produced for SWMU 1 in April 2011 (CH2M HILL, 2011). Based on the remedial alternatives evaluation in the RI/FS Report, a Proposed Plan was issued for public comment in July 2011 (CH2M HILL, 2011) and the associated ROD was issued in September 2011 (CH2M HILL, 2011). The work plan to guide implementation of the remedial action and O&M was submitted in July 2012 (CH2M HILL, 2012). During implementation of the remedy (in accordance with the 2011 ROD) in September 2012, more surface debris was encountered on the landfill surface than had been previously assumed (i.e., 0.5 acre).

Figure 1 – Former VNTR and SWMU 1 Location Map



ES02111012326TPA F2 Former VNTR and SWMU 1 Location Map.ai mstuart

Based on this finding, the Navy recommended removing the vegetation across the landfill in order to ensure the surface debris could be removed, noting this would also facilitate a site-wide geophysical survey to refine the boundary of the landfill and increase the level of confidence that all areas within the landfill boundary are appropriately addressed by the remedial action. To accomplish this, a technical memorandum work plan for these activities was submitted in September 2013 (CH2M HILL, 2013), with fieldwork commencing shortly thereafter. During the surface clearance, approximately 11,631 pounds of debris were removed from the landfill surface. A geophysical survey to identify the boundaries of the buried debris contained within the landfill was completed in April 2014. A Technical Memorandum (TM) entitled, *Summary of Findings: Surface Debris Clearance, Landfill Boundary Refinement, and Supplemental Human Health Risk Assessment (HHRA) to Support the Remedial Action at Solid Waste Management Unit 1* was finalized in August 2015. This TM documented the remedial action activities through April 2014 and the revised HHRA, and it contained a recommendation that the surface debris removal and geophysical surveying be completed across the remainder of the landfill (i.e., approximately 9 acres, primarily along the ephemeral streams) (CH2M HILL, 2015). This final surface clearance activity was completed in November 2015. Details of the surface debris removal and landfill boundary refinement via geophysical mapping will be documented in an interim remedial action completion report.

Contaminants of Concern at SWMU 1

Based on the ecological risk assessment (ERA) contained in the RI/FS Report (CH2M HILL, 2011) and the revised human health risk assessment (HHRA) following the surface debris removal, which was contained in the aforementioned TM (CH2M HILL, 2015), it was concluded that no unacceptable risks or contaminants of concern (COCs) were identified at SWMU 1. Although no unacceptable risks were identified for human health or ecological receptors, this determination is predicated upon the land use remaining the same and access to subsurface debris and associated contamination being restricted. Therefore, the remedial action has and will continue to address potential exposure from direct contact with subsurface landfill debris and associated contamination, minimize the potential for erosion of landfill debris, and ensure that land use within the landfill boundaries is controlled. Long-term groundwater monitoring will be conducted every year for the first 5 years unless trend data suggest more or less frequent monitoring is warranted. Based on historical data, it is anticipated that after the first 5 years of annual monitoring, the frequency will be adjusted to once every 5 years to monitor for any future release from waste remaining in place and will be documented in the 5-year review reports mandated by CERCLA. However, this

adjustment will only be made if concurred upon by the Navy, EPA, and PREQB. At the end of the 30-year post-closure period, the groundwater sampling program will be discontinued if no groundwater contamination warranting remedial action is observed.

Selected Remedy

The SWMU 1 remedy, Enhanced Native Soil Cover and Institutional Controls, selected in the 2011 ROD, comprises the following components:

- Enhance existing soil cover
- Institutional Controls
- LTM and O&M

Enhance Existing Soil Cover

Enhancing the existing soil cover by covering the exposed waste areas with 18 inches of soil fill and 6 inches of top soil to promote vegetative growth.

Institutional Controls

Implementing physical barriers (boundary survey, fencing, gates, and signage), and ICs to restrict any future residential or industrial land use, unauthorized and uncontrolled excavation and drilling at SWMU 1, and any land surface activities that permanently expose waste materials or release associated contamination.

Long-term Monitoring and Operation and Maintenance

Performing LTM and O&M.

Five-Year Reviews

Performing 5-year reviews and reporting because debris and hazardous substances will remain at SWMU 1 at concentrations that do not allow unlimited use and unrestricted exposure.

BASIS FOR THE DOCUMENT

This ESD addresses the Navy's and EPA's desire (with support from PREQB and DOI) to amend the remedy selected in the 2011 ROD by removing the surface debris and demonstrating human health and ecological risks are acceptable, thereby eliminating the need for additional native soil cover. As described in the ROD, the reason the enhanced native soil cover was selected was to prevent direct contact with surface and subsurface landfill debris and associated contamination that would pose potentially unacceptable risk to exposed receptors. The additional fieldwork removed surface debris over the entire landfill and mapped the extent of the buried material below ground to better define the boundaries of the former landfill area. Additionally, the HHRA was revised using surface and subsurface soil data that, when coupled with the original ERA, resulted in no COCs being identified at SWMU 1. Therefore, a minor change to the remedy selected in the 2011 ROD is warranted because the remedial action objectives have been (or will be) met as follows:

1. Prevent direct contact with surface and subsurface landfill debris and associated contamination that would potentially pose an unacceptable risk to exposed receptors.
 - Surface debris across the landfill has been removed.
 - The ERA and the revised HHRA support the conclusion that there are no unacceptable risks for potential receptors (i.e., plant, animals, trespassers, or U.S. Fish and Wildlife Service [USFWS] workers) at SWMU 1 from potential exposure to surface and subsurface soil.
2. Minimize the potential for erosion of landfill debris.
 - No erosion was observed following the vegetation clearance activities, even after major precipitation events and even within areas identified to potentially channel surface flow.
 - Since the vegetation removal, rapid regrowth of vegetation was observed at SWMU 1. The re-established vegetation provides sufficient erosion control by intercepting rain, reducing sheet flow, and anchoring and reinforcing the soil with its root systems.
3. Ensure land use within the landfill boundaries (including the use of groundwater) is controlled, unless or until additional action is implemented that mitigates potentially unacceptable risks associated with unrestricted land use.
 - Warning signs have been posted.
 - Landfill boundary markers have been installed and the land use control boundary has been surveyed; the surveyed boundaries will be included in the Interim Remedial Action Completion Report.
 - Administrative controls (notification/education) will be implemented.

DESCRIPTION OF SIGNIFICANT DIFFERENCES

Remedial Alternative 2 was chosen in the ROD. That alternative included enhancing the existing soil cover, ICs, LTM, and O&M. The only change to the recommended alternative is the elimination of the requirement to enhance the existing soil cover based on the factors described above.

SUPPORT AGENCY COMMENTS

PREQB and USFWS representatives, as part of the Vieques Technical Subcommittee Team with the Navy and EPA, have had ongoing involvement in the decision-making process associated with the change to the remedy documented in the 2011 ROD, as documented in this ESD. All agencies concur on the change to the previously selected remedy.

STATUTORY DETERMINATIONS

Performing landfill-wide surface debris removal instead of

localized addition of native soil cover has a minimal impact on the scope and cost of the remedy. The proposed change to the selected remedy will continue to satisfy the statutory requirements of CERCLA Section 121. The revised remedy will remain protective of human health and the environment, will continue to comply with federal and state Applicable or Relevant and Appropriate Requirements, and will be cost effective.

PUBLIC PARTICIPATION

Public participation requirements as outlined in the NCP, Section 300.435 (c)(2)(i), have been met by publishing a notice in a local newspaper (Primera Hora) of availability of the ESD. In addition, the Navy regularly meets to discuss the status and progress of the IRP with the Restoration Advisory Board (RAB), which includes representatives from the local community. Representatives from the Navy, EPA, USFWS, PREQB and the Puerto Rico Department of Natural and Environmental Resources (PRDNER) attend these meetings.

FOR MORE INFORMATION

If you have questions or would like further information about the ESD for SWMU 1, please contact:

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DECLARATION (PAGE 1 of 4)

For the foregoing reasons, by my signature below, I approve the issuance of this Explanation of Significant Difference for the Record of Decision for SWMU 1, Former Vieques Naval Training Range, Vieques, Puerto Rico.

United States Department of the Navy

 9 Jun 2016
J. R. Cirvello Date
Environmental Business Line Manager
Naval Facilities Engineering Command, Atlantic

DECLARATION (PAGE 3 of 4)

For the foregoing reasons, by my signature below, I concur with the issuance of this Explanation of Significant Difference for the Record of Decision for SWMU 1, Former Vieques Naval Training Range, Vieques, Puerto Rico.

Puerto Rico Environmental Quality Board



May 5, 2016

Weldin F. Ortiz Franco

Date

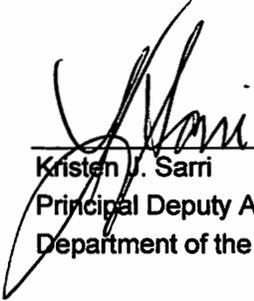
Executive Director

Puerto Rico Environmental Quality Board

DECLARATION (PAGE 4 of 4)

For the foregoing reasons, by my signature below, I concur with the issuance of this Explanation of Significant Difference for the Record of Decision for SWMU 1, Former Vieques Naval Training Range, Vieques, Puerto Rico.

Department of the Interior



10/12/16

Kristen J. Sarri

Date

Principal Deputy Assistant Secretary, Policy, Management and Budget
Department of the Interior