

## EXECUTIVE SUMMARY

This document contains the Range Condition Assessment (RCA) of the Rodman and Pinecastle Ranges. These ranges contain the land-based components of the Jacksonville Range Complex. The RCA will be used to support range planning and management decisions as part of the Range Sustainability Environmental Program Assessment (RSEPA). This document includes the Range Selection (Phase I) Review, Pre-Site Visit Information (Phase II) Review, On-Site Visit Information (Phase III) Review, including the Operational Range Site Model (ORSM) for munitions-related training activities, and the answers that are part of Decision Point 1 (DP1).

The following recommendations/protective measures for range sustainability were identified:

- Manage scrap at both ranges in accordance with the Navy's Operational Range Clearance Policy (2 April 2004).
- Conduct a comprehensive range evaluation (CRE) to address potential discarded military munitions at both ranges and the potential off-range release of munitions constituents (MCs) at Pinecastle Range.
- Prepare additional National Environmental Policy Act (NEPA) documentation if training operations at Pinecastle Range are expanded to include Guided Bomb Unit (GBU) 10/12/16 laser guided munitions and future precision guided munitions.

The following sections summarize the steps used to develop DP1 for the Rodman and Pinecastle Ranges.

### **I. Range Selection (Phase I) Review**

The Jacksonville Range Complex is of key importance in supporting Fleet Readiness Training Plan (FRTTP) requirements. Jacksonville is a critical component of the east coast "System of Ranges", which provides necessary training venues for the Atlantic Fleet battle groups. The value of this "System of Ranges" was highlighted by the loss of the Atlantic Fleet Weapons Training Facility, Vieques, Puerto Rico on 30 April 2003.

The Jacksonville Complex contains two land based operational range areas, the Rodman Target and the Pinecastle Range. The Pinecastle Range is the only remaining Navy east coast range where explosive munitions may be used. The Pinecastle Range is managed under a Special Use Permit (SUP) with the United States Department of Agriculture, United States Forest Service (USFS). As a

result of the recent re-negotiation of this SUP, the Navy is obligated to perform certain environmental assessments at Pinecastle. The analysis conducted during an RCA would be supportive of this requirement.

Given the high strategic value of the Jacksonville Range Complex, and the requirement to support the SUP, the operational land based assets of the Jacksonville Complex have been selected to undergo an RCA.

## **II. Pre-Site Visit Information (Phase II) Review**

A team of U.S. Navy civilians and personnel from EnSafe Inc. (EnSafe) conducted the RCA Pre-Site Visit Information Collection (Phase II) in September 2003. During Phase II the team collected as much information as possible from Navy personnel familiar with the range operations as well as publicly available information on the ranges. This information was used to plan the on-site visit and identify key information that would be needed to complete the RCA.

## **III. On-Site Visit Information (Phase III) Review**

### **Site Visit**

A team of U.S. Navy civilians and personnel from EnSafe conducted the on-site visit in October 2003. During the visit, the team interviewed key U.S. Navy personnel responsible for range and environmental operations and collected range and environmental information, specifically related to munitions operations.

Overall, training and the operation of the Rodman and Pinecastle Ranges are in compliance with applicable environmental programs. The following noncompliance issues were identified at the ranges. The Navy has investigated the feasibility of expanding training operations at the Pinecastle Range to include GBU 10/12/16 laser guided munitions. A preliminary weapons safety footprint has been plotted using existing targets and run-in headings and it has been determined that this proposed action and use of future precision-guided munitions would require additional NEPA documentation. In addition, range scrap management procedures do not comply with the Navy's Operational Range Clearance Policy (2 April 2004) and potential discarded military munitions were identified at both ranges.

### **Operational Range Site Model**

The ORSM is a summary of the operational, environmental, cultural, and land use information used to evaluate the potential for the off-range release of MCs and the potential for exposure to off-range receptors. This initial ORSM was prepared as part of the RCA Phase III component of RSEPA. Critical information for each range is discussed below.

### ***Rodman Range***

**Range Boundary:** The range boundary is the Navy's property line, shown in Figure 3-1. This boundary was chosen as the range boundary for RSEPA purposes because it encompasses the target impact area and the surrounding buffer area.

**Operational Component:** Operational data for the Rodman Range indicate that no live (containing high explosives or other energetic filler) munitions have been used at the range; only practice munitions incapable of producing a detonation have been used. These practice munitions contain spotting charges/signal cartridges that produce a visual indication of impact to facilitate scoring. The chemicals used in these spotting charges (a lead styphnate primer, a smokeless powder initiator, and red or white phosphorous or titanium tetrachloride) are not munitions constituents (MCs) according to RSEPA.

**Environmental Component:** Environmental data indicate that the range contains habitats for threatened, endangered, and sensitive species. No MCs are used on the Rodman Range.

**Cultural Component:** Two archaeological findings are present on the Rodman Range near the Ocklawaha River. While these areas represent potentially significant cultural resources, they are not located in the target area of the range and are adequately protected by the restricted access at the range.

**Land Use Component:** Current and future land use on the range is military training, specifically air-to-ground bombing training. Land around the range is used by the public for recreational purposes such as fishing, hunting, camping and hiking. Poachers have been occasionally identified on the range.

**Predictive Modeling:** Only practice munitions which do not contain MCs have been used on the Rodman Range. Therefore, predictive modeling was not performed.

### ***Pinecastle Range***

**Range Boundary:** The range boundary, shown on Figure 3-2, is the line agreed to by the USFS and the Navy in the SUP to operate the range. This boundary was chosen for RSEPA purposes because it encompasses the target impact areas and the surrounding buffer area. The range administrative facilities (i.e., the Centroid) are located outside the range boundary. The range is located within an older and larger former range, the Lake Bryant Range, where the quantity and type of munitions used are unknown. The Lake Bryant Range has been identified as a Formerly Used Defense Site by the Department of Defense.

**Operational Component:** The Pinecastle Range uses live munitions; therefore, the release of MCs from the range's Live Ordnance Impact Area is possible. No evidence of the use of perchlorate-containing munitions was identified.

**Environmental Component:** Environmental data indicate that the Pinecastle Range contains habitats for threatened, endangered and sensitive species. In addition, site geological and hydrogeological data collected during the ORSM indicate that potential contaminant migration pathways for MCs are present and should be addressed with predictive modeling.

**Cultural Component:** An archaeological resource area was identified at the Pinecastle Range in the strafing target; it was determined to be an insignificant finding that did not warrant further evaluation or special protective measures.

**Land Use Component:** Current and future land use is military training, specifically air-to-ground bombing training. Land around the range is comprised of the Ocala National Forest and is used by the public for recreational purposes such as fishing, hunting, camping, and hiking.

**Predictive Modeling:** Section 3.4 of the report provides the first stage of the predictive modeling process for the offsite migration of MCs at the Pinecastle Range. The first stage of the process involves predicting potential concentrations of MCs in soil using munitions usage data from U.S. Navy Pacific Air Command's Target and Range Information Management System, range munitions expenditure data, available data on the composition of the munitions used, dud and low-order detonation rates, and the size of the target area. Based upon this information, the estimated maximum concentration of TNT in soil in the LIA is 59 milligrams per kilogram (mg/kg); the estimated concentration of RDX is 24 mg/kg; the estimated mass of HMX is 3 mg/kg; and the estimated concentration of DNT is 47 mg/kg. Because the range is within the older and larger Lake Bryant Range where other munitions (quantity and type unknown) were used, some uncertainty exists in the modeling results.

The second stage of predictive modeling uses screening level computer models to predict vertical and horizontal migration of MCs. Vertical groundwater modeling indicates that the surficial aquifer beneath the LIA may be impacted with MCs exceeding screening values. However, lateral groundwater transport modeling indicates that the MCs will attenuate to below screening values before reaching the property boundary. Surface water modeling indicates that surface water run-off from the LIA is not leaving the site, even in extreme storm conditions.

#### **IV. Decision Point 1 Outcome**

##### **Are Further Steps Required to Maintain Compliance?**

###### ***Rodman Range***

Overall, training and the operation of the Rodman Range are in compliance with applicable environmental programs. It is recommended that range scrap management procedures be modified to comply with the Navy's Operational Range Clearance Policy (2 April 2004) and that the potential discarded military munitions be addressed.

###### ***Pinecastle Range***

Overall, training and the operation of the Pinecastle Range are in compliance with applicable environmental programs. The Navy has investigated the feasibility of expanding training operations to include GBU 10/12/16 laser guided munitions. A preliminary weapons safety footprint has been plotted using existing targets and run-in headings, and it has been determined that this proposed action and the use of future precision guided munitions would require additional NEPA documentation to sustain compliance. It is also recommended that range scrap management procedures be modified to comply with the Navy's Operational Range Clearance Policy (2 April 2004) and that potential discarded military munitions be addressed.

##### **Is Further Analysis Required to Assess Risk of Potential Off-Range Release?**

###### ***Rodman Range***

No further analysis is required to assess the risk of off-range releases.

###### ***Pinecastle Range***

ORSM modeling of the groundwater and surface water pathways does not indicate a potential for off-range releases of contaminants. However, because the Pinecastle Range is part of the older and larger Lake Bryant Range, some uncertainty is associated with the ORSM modeling. In 1998, TNT was detected in groundwater in a perimeter well. Based on this detection, recent Navy policy recommends a CRE to assess the potential off-range release of MCs. A groundwater investigation, required as part of the range's SUP, is currently being conducted to assess whether an off-range release of site-related contaminants has occurred. It is recommended that these results be incorporated into the CRE.

#### **V. Recommendations/Protective Measures**

##### **Rodman Range**

No further analysis or protective measures are recommended to assess risk of potential off-range releases of MCs. The following recommendations/protective measures are recommended to address noncompliance issues:

- Manage range scrap in accordance with the Navy's Operational Range Clearance Policy (2 April 2004).
- Conduct a comprehensive range evaluation (CRE) to address potential discarded military munitions.

### **Pinecastle Range**

The following recommendations/protective measures are recommended to address noncompliance issues and assess risk of potential off-range releases of MCs:

- Manage range scrap in accordance with the Navy's Operational Range Clearance Policy (2 April 2004).
- Conduct a comprehensive range evaluation to address potential discarded military munitions and the potential off-range release of MCs.
- Prepare additional NEPA documentation if training operations are expanded to include GBU 10/12/16 laser guided and future precision guided munitions.