



## Introduction

To effectively carry out its mission, the United States Marine Corps (Marine Corps) must conduct real-time, realistic training involving tactics, procedures, equipment, and personnel on our ranges. The Marine Corps has established a Sustainable Range Program to ensure that training areas are available to future generations of Marines. A key component of the Marine Corps Sustainable Range Program is the Range Environmental Vulnerability Assessment (REVA) program. REVA was developed to help us understand the environmental impacts our range operations may have and identify actions that will keep our ranges operational while protecting human health and the environment. It is a proactive program that supports Marine Corps and Department of Defense goals and policies, but is not required by law or regulation.

## Marine Corps' Range Environmental Vulnerability Assessment (REVA) Program

REVA is a valuable tool for the Marine Corps. This program:

- Provides a snapshot of the current environmental conditions of operational ranges across the Marine Corps;
- Performs a detailed assessment of potential munitions constituent (chemical components of munitions) migration from operational ranges;
- Assists installation and range managers in formulating strategies for long-term range sustainment; and
- Provides early identification of potential environmental issues.

Operational ranges that are addressed under REVA include target/impact areas, firing points, small arms ranges, and training areas. REVA also assesses areas with historical munitions use within operational range boundaries.

## REVA Process

The REVA process includes data collection, development of a range Conceptual Site Model (CSM), groundwater and surface water/sediment modeling (if applicable), further analysis (e.g., environmental or geophysical sampling, or risk assessment), and documentation of results.

The data collection process includes identifying physical, hydrologic, geographic, and operational data to develop the range CSM. The CSM outlines current environmental conditions at the range and identifies if potential pathways and receptors are present that may be potentially impacted by munitions constituents. REVA addresses both human and ecological receptors.

Ranges may be qualitatively or quantitatively assessed based on the munitions type used at the range. Quantitative assessments such as surface water/sediment and groundwater modeling are conducted on high explosive ranges to predict whether munitions constituents, exceeding screening levels, have the potential to migrate from an operational range to a receptor. In some cases, operational ranges may be grouped together for modeling purposes if they share similar characteristics, including environmental characteristics and/or military munitions use.

# FACTSHEET *REVA Overview*

## ***REVA Process....continued***

It may not be necessary to model every operational range. Some ranges may be screened from the process because their environmental impact can be assessed without computer modeling. Modeling results are used to determine whether further assessment is warranted.

Further assessments may include environmental media sampling (e.g., soil, groundwater, surface water, and sediment), characterization of physical properties (e.g., soil properties, hydraulic data), evaluation of implementing best management practices, and/or conducting a risk assessment.

Small arms ranges, which include any munitions less than .50 caliber and do not include high explosives, are evaluated qualitatively. Lead is the primary munitions constituent on small arms ranges. The REVA process uses a Small Arms Range Assessment Protocol specifically designed to assess the potential for lead to become available to the environment and to migrate off-range where human and ecological receptors may become exposed. The SARAP evaluation uses factors relevant to lead release, dissolution, and transport in addition to range physical characteristics, and proximity to receptor exposure points. The assessment process involves a scoring process to rank the range as having a low, moderate, or high potential for off-range lead migration and receptor exposure.

All assessments are documented and made available to the public on The DoD Energy, Environment, Safety & Occupational Health Network and Information Exchange website, <http://www.denix.osd.mil/>, and the Installation specific website.

## **REVA Schedule**

The baseline assessments were completed for all operational ranges in FY08 and will be reevaluated on a five-year basis. The REVA 5-Year Review Assessments began in fiscal year 2011 and are anticipated to be completed by the end of fiscal year 2014. The five-year reviews include a site visit and desktop review to update data collected in the baseline.

## **Where can I get more information?**

If you have any more questions or concerns regarding REVA, please contact

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