Pohakuloa Training Area, Hawaii

November 2022

Background

DoD uses and manages operational ranges to support national security objectives and maintain the high state of operational readiness essential to its mission requirements. The Department conducts non-regulatory, proactive, and comprehensive operational range assessments (ORAs) to support the long-term sustainability of these ranges while protecting human health and the environment. The purpose of an ORA is to determine if there is a release or substantial threat of a release of munitions constituents (MC) from an operational range to an off-range area that exceeds an applicable regulatory standard or creates a potential unacceptable risk to human health or the environment.

The Army ORA effort was developed to address DoD requirements detailed in DoD Directive 4715.11 (10 May 2004) and DoD Instruction 4715.14 (15 November 2018). The overall objective of the ORA is to assess operational ranges/range complexes to determine if an off-range MC release or substantial threat of an off-range MC release exists; if an off-range MC release exists, does it exceed an applicable regulatory reporting standard; and if an MC release or substantial threat of a release exists, determine whether it creates a potentially unacceptable risk to off-range human health or the environment. Army ORAs assess potential off-range migration of MC along surface water system and groundwater migration pathways.

Installation Overview

Pohakuloa Training Area (PTA) is located approximately 36 miles west of the town of Hilo on the island of Hawai‘i. The installation is situated on a plain formed by the convergence of the Mauna Kea, Mauna Loa, and Hualalai volcanoes. Access to PTA is provided via Saddle Road, which crosses the northern portion of the installation. PTA is a training site for Schofield Barracks Military Reservation, an Army installation located on Oahu, Hawai‘i.

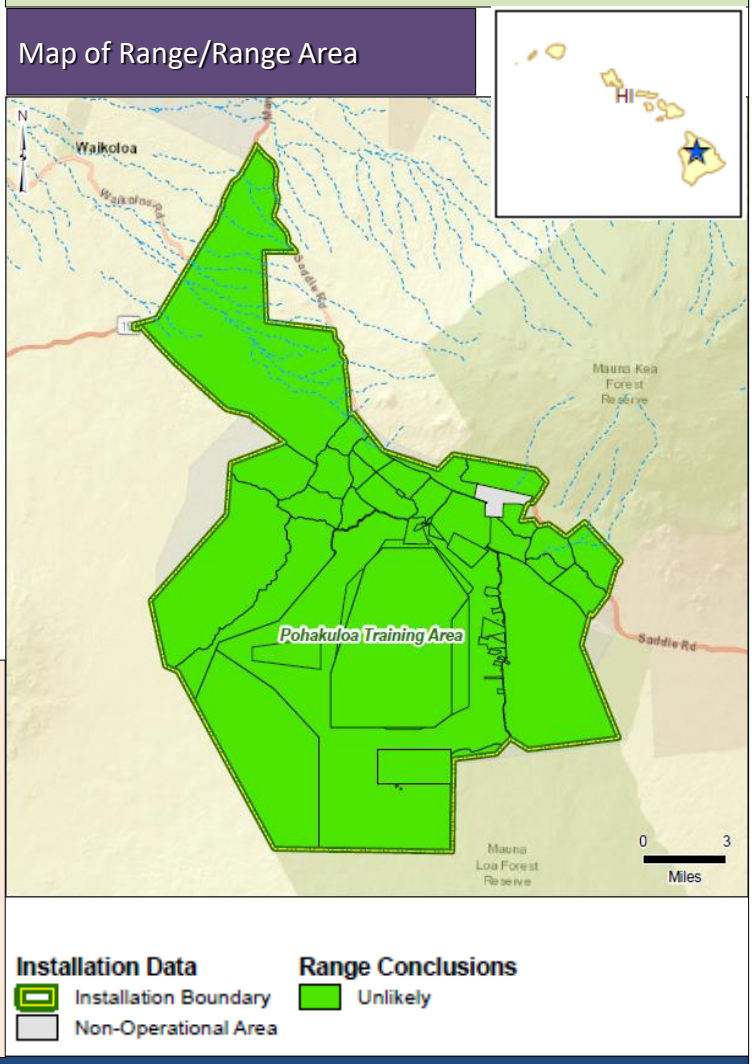
Operational Range Assessment Findings (11/2022)

Based on the updated data, no off-range MC release or substantial threat of an off-range MC release currently exists. The operational ranges remain categorized as Unlikely.

Next Steps

The installation’s operational ranges should be included in the FY23-27 cycle of ORAs to meet DoD Policy (DoDI 4715.14) re-assessment requirements.

Map of Range/Range Area



Installation Overview (continued)

Currently, PTA has 165 operational ranges that encompass 131,876 acres that are composed of 78 firing sites, 23 firing ranges, 25 maneuver training areas, 18 landing zones, 12 training sites, 4 drop zones, 3 demolition ranges, 1 dudded impact area, and 1 non-dudded impact area. Small, medium, and large caliber munitions, pyrotechnics, obscurants, demolition materials, and other munitions (i.e., mines, rockets, etc.) have been historically and are currently used at PTA for training.

Previous Assessments

The 2009 Phase I Qualitative Assessment for PTA consisted of collecting, evaluating, and presenting available data to establish if there is an interaction between the on-range sources of MCOC and off-range receptors (source/receptor interaction).

During the Phase I assessment, PTA included a total of 153 operational ranges totaling 109,950.42 acres. Limited or no known sources of MCOC from current or historical munitions use were identified at 24 operational ranges at PTA. A total of 129 operational ranges at PTA were found to have sources of potential MCOC; however, incomplete migration pathways were identified due to the limited precipitation rate, dense vegetation, permeable soils, and depth to the groundwater (over 1,000 feet [ft] below ground surface [bgs]). As a result, the installation was categorized as Unlikely to have a source/receptor interaction.

In 2013, the Periodic Review was conducted to re-evaluate the conclusions of the 2009 Phase I and to determine whether the source, pathways, and receptor evaluation completed during the initial assessment remain valid.

At the completion of the site visit meeting and subsequent data collection efforts, all new data and information obtained was evaluated for comparison with the information reflected in the Phase I. The primary findings of the Periodic Review were as follows:

- The number of operational ranges was determined to have been reduced from 153 operational ranges encompassing 109,950.42 acres to 134 operational ranges encompassing 131,424.81 acres.

Previous Assessments (continued)

- The change in acreage was a result of the incorporation of the Keamuku Local Training Area into PTA prior to the 2013 Periodic Review. Additionally, previously identified operational acreage in the 2009 Phase I was added to the non-operational acreage, resulting in an increase in the non-operational acreage.
- Changes to the installation boundary and number of ranges were identified; however, the overall range usage and potential MC sources were determined to have remained consistent with the 2009 Phase I, although there was an increase in munitions expenditures.
- Limited or no MC source was identified for 27 operational ranges.
- Potential source of MC was identified for 107 operational ranges; however, potential migration pathways were deemed incomplete.
- No changes in migration pathways or downstream receptors since the 2009 Phase I were identified.
- All ORA eligible ranges were deemed unlikely and placed into the periodic review cycle.

Based on current and historical military munitions usage at PTA and a review of potential migration pathways and potential human or ecological receptors, 134 ranges were identified as being unlikely to have potential MCOC migrate off- range and affect human or ecological receptors.

Basic Assessment

The Basic Assessment is a periodic re-assessment of operational ranges to determine whether there are releases or substantial threat of releases of MC to off-range areas and whether MC migration poses an unacceptable risk to human health or the environment. This Basic Assessment was performed to collect new data generated since the prior ORA, evaluate that data, review and evaluate the prior ORA, refine the conceptual site model (CSM) and identify whether migration and/or unacceptable risk exists while also either confirming or disproving the previous ORA conclusion.

At the completion of the site visit and subsequent data collection efforts during the Basic Assessment, all new data and information obtained was evaluated to update the CSM.

Basic Assessment (continued)

Since the Periodic Review was completed in 2013, the operational range count has increased from 134 to 165. This change to the operational range count is the result of retrofitting existing ranges and major construction events.

A limited or no source of MCOC was identified at 134 operational ranges including 75 firing sites (artillery and mortar firing points, shoot houses, laser ranges, firing points, firing areas, and firing boxes), 25 maneuver training areas, 18 landing zones, 12 training sites, and 4 drop zones*. These ranges were determined to constitute limited source areas as munitions use is limited and/or dispersed. Additionally, artillery and mortar firing points do not constitute significant source areas as artillery powder bags and mortar charges/ increments are burned at designated burn pits.

A potential current and/or historical source of MCOC was identified on the remaining 31 operational ranges including 23 firing ranges (live-fire firing ranges), 3 firing sites, 3 demolition ranges, 1 dudded impact area, and 1 non-dudded impact area. Since 2013, there has been an overall increase in expenditures for small, medium, and large caliber munitions; pyrotechnics/obscurants; and other weapons, and additional source loading has occurred.

** Upon reevaluation of the previous ORAs, 55 firing points were recategorized as limited source because the majority of the MCOC associated with the rounds are deposited in the impact area rather than at the firing points. Numerous firing points have merged with existing operational area thus there has been a significant decrease in the number of firing points since the prior ORA.*

Basic Assessment (continued)

PTA experiences limited precipitation from seasonal rainfalls (averages 13.9 inches per year). Most of PTA is above the thermal inversion layer and is not influenced by the trade wind-orographic rainfall regime. Moisture carried by the summer easterly trade winds is lost as precipitation with an increase in elevation and rarely reaches PTA. Due to low precipitation, porous soils, and lava substrates, there are no perennial streams or lakes within PTA boundaries.

Perched groundwater at PTA is encountered at approximately 700 and 1,800 ft bgs**, respectively. While the lateral extent of the deeper perched aquifer is extensive, the extent of the shallower perched aquifer is unknown.

While a source of MCOC was identified at 31 operational ranges, no runoff from the identified source areas flows off range due to the low precipitation rate, porous soils, and lava substrates. Although the highly porous soils promote infiltration to groundwater, MC from these source areas are not expected to infiltrate through the soil profile to groundwater due to limited precipitation and substantial depth to water (700 ft bgs). The lack of migration pathways interrupts the potential for source/receptor interaction and the operational ranges at PTA therefore do not pose an unacceptable risk to off-range human or ecological receptors.

No changes to the CSM occurred as a result of data collection and evaluation during this assessment cycle; therefore, the 165 operational ranges remain categorized as Unlikely.

*** The depth to groundwater was updated from the previous ORA based on a 2022 USACE report. The previous ORA stated depth to groundwater was at least 1,000 ft bgs; however, based on the updated 2022 USACE report, depth to groundwater is encountered as shallow as 700 ft bgs.*

For more information on Pohakuloa Training Area, contact the Public Affairs Office at (808) 824-1474
For more information on the DoD Operational Range Assessment Program visit https://www.denix.osd.mil/orap/home/