



Operational Range Assessment Atlantic City Air National Guard Base Warren Grove Range

Air Force Operational Range Assessment Program

May 2024

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 DAF Operational Range Assessment Program (ORAP) assessment methodology uses an installation-wide approach to accomplish phased assessments to determine if MC are being transported to off-range areas and if such a release poses a risk to off-range receptors. An Air Force ORA is comprised of a primary Qualitative Assessment, Phase 1, and Quantitative Assessment, Phase 2, as required.

If an off-range release or substantial threat of release of MC is identified, further evaluation, a MC Migration / Mitigation Study, Phase 3, is conducted under the DAF ORAP. The study is focused on further characterizing site conditions, fully assessing risks, and evaluating mitigation measures. Based on findings of the MC Migration/Mitigation Study, a Mitigation Action, Phase 4, under the ORAP may be conducted if required.

Installation Overview

Atlantic City Air National Guard Base, comprised of two land parcels, is located within the confines of the Atlantic City International Airport, Egg Harbor Township, Atlantic County, approximately 9 miles northwest of Atlantic City, New Jersey. The Air National Guard Base (ANGB) manages Warren Grove Range (WGR), a Geographically Separate Unit.

ORAP Findings: April 2023 ORA Report

A MC Migration Study was conducted under the DAF ORAP at Warren Grove Range

- Substantial threat of an off-range MC release via surface water/sediment was confirmed
- No unacceptable risks to off-range ecological and human receptors was identified

Next Steps

Based upon the findings of the Phase 3 ORA, no further action is recommended at this time.

- The periodic Phase 2 for Warren Grove Range is recommended to include additional sampling of surface water and sediment to monitor MC (metals) levels and potential risks to receptors.



WGR Assessment Overview

WGR, encompassing roughly 9,416 acres, is located in Burlington County, southeastern New Jersey, in Bass River Township, approximately 3 miles southwest of the town of Warren Grove, New Jersey, and about 20 miles north of Atlantic City, New Jersey.

Lands comprising WGR is currently under license from the DAF to the Air Guard and is operated by the 177 Fighter Wing. The area has been used for weapons test and training since 1942. Current operations within WGR is limited to tactical and conventional air-to-ground training for both fixed wing and rotary aircraft. Training is mainly restricted to one primary area, referred to as the Primary Range Complex.

WGR was initially evaluated in 2004 and subsequently assessed under the DAF ORAP in 2005, 2011, 2014, and 2019. The 2019 Phase 2 assessment identified a substantial threat of an off-range MC release as metals (chromium and lead), perchlorate, and/or explosive compounds were detected in on-range samples of surface water, sediment, and groundwater. A complete exposure pathway via surface water and sediment was identified for ecological receptors; and a potentially complete exposure pathway for human receptors via groundwater. No unacceptable risks to off-range human or ecological receptors identified; however further evaluation was recommended.

The Phase 3 ORA included the collection of on-range surface water, sediment, and groundwater samples.

- No explosive compounds were detected in any media samples.
- Perchlorate concentrations were low-level and comparable to the average reference [background] concentrations, indicating perchlorate may be naturally occurring within the Pine Barrens Region.

WGR Assessment Overview, Continued

MC metals (chromium and lead) are potentially being transported off-range via surface water/sediment. However, based upon comparison to the risk-based ecological screening level, MC (dissolved chromium and dissolved lead) migrating within surface water poses no potential risk to ecological receptors. The simultaneously extracted metals / acid volatile sulfide (SEM/AVS) results indicate no MC (lead) is bioavailable and toxic to benthic organisms in sediment.

Therefore, no potential risks to off-range ecological receptors were identified for the surface water and sediment exposure pathway during the Phase 3 ORA. The elevated metals within surface water and sediment are likely a result of the natural environment at WGR including low-pH surface water and low-velocity depositional environments which result in high levels of total organic carbon. The low-pH surface water promotes migration of metals, both naturally occurring and range related, while the low-velocity depositional environments coupled with high levels of total organic carbon result in metals sinks.

Groundwater analytical results indicated that no MC are migrating off-range via groundwater. No average downgradient concentration of MC (metals) exceeded their respective background values, and no explosives were detected in groundwater samples. Therefore, no potential risks to human receptors were identified for the groundwater pathway during this Phase 3 ORA.

As no potential risks were identified to off-range receptors, no MC Mitigation Study was recommended at this time. However, a substantial threat of an off-range release via surface and sediment was confirmed; as such, monitoring and additional sampling of surface water and sediment under the ORAP via the periodic Phase 2 Quantitative Assessment will be conducted.

For more information on this assessment or the Air Force Operational Range Assessment Program contact the Ranges Subject Matter Expert, Technical Branch, Environmental Quality Directorate, Air Force Civil Engineer Center For more information on the DoD Operational Range Assessment Program visit <https://denix.osd.mil/orap/home/>