



ENVIRONMENTAL REMEDIATION OF DIOXIN CONTAMINATION AT DANANG AIRPORT

JUNE 2012 – NOVEMBER 2018 | IMPLEMENTERS: CDM SMITH, INC., TETRA TECH, INC., TERRATHERM, INC. | BUDGET: \$110 MILLION

At the request of the Government of Vietnam (GVN), the U.S. Government agreed to complete the environmental remediation, or cleanup, of the Danang Airport due to high dioxin concentrations in soil and sediment remaining from the U.S.-Vietnam War. After completing an Environmental Assessment of the Danang Airport that estimated the extent of dioxin contamination, USAID and the Vietnamese Ministry of National Defense (MND) launched a joint project to clean up the dioxin contamination to reduce the risk of dioxin exposure to the surrounding community, while developing Vietnamese capacity for environmental assessment and remediation.

ENVIRONMENTAL REMEDIATION PROCESS

The Danang Airport Remediation Project used both thermal treatment and containment remediation approaches. The thermal treatment strategy involved three major steps: building an enclosed, above ground treatment structure; excavating and placing the dioxin-contaminated soil and sediment into the structure; and heating the contaminated soil and sediment to a high temperature (approximately 335°C) to destroy the dioxin. Following treatment, both USAID and MND scientists tested the soil and sediment to ensure it met the approved GVN treatment goal. The treated material was then cooled, removed from the treatment structure, and used as fill material in the on-going Danang Airport expansion. In addition to thermal treatment, USAID and MND safely isolated approximately 50,000 cubic meters of low concentration, dioxin-contaminated sediments in a geomembrane-lined, and soil-capped landfill on airport land. USAID, MND and the Vietnamese Ministry of Natural Resources and Environment agreed that containing these sediments was the appropriate means for preventing human health and environment impact over the long-term.

MAINTAINING HEALTH AND SAFETY

All remediation activities occurred entirely within the military portion of the Danang Airport. USAID put measures in place to ensure that contaminated soil, sediment, dust and water did not leave the project area. Contractors followed international safe work practices for hazardous waste sites, which included worker monitoring and health and safety training. The project achieved over one million accident-free work hours and conducted more than 20,000 hours of worker training, building local capacity for future environmental remediation work.

RESULTS

In May 2015, USAID and MND confirmed successful treatment of approximately 45,000 cubic meters of dioxin-contaminated material. The second and final phase of treatment was completed in June 2017, successfully treating almost 50,000 additional cubic meters of dioxin-contaminated material. On November 7, 2018, U.S. Ambassador to Vietnam Daniel Kritenbrink and MND Vice Minister Nguyễn Chí Vịnh announced the successful completion of the project and formally handed over 13.7 hectares of land, the third and last portion of remediated land, for expansion of Danang International Airport.

In the photo: The structure for thermal treatment at Danang Airport – equal to the size of a two-story tall, American football field. (TetraTech, Inc for USAID)