

USAF had characterized the OT-10 training sites during four investigations between 1988 and 2001. The first investigation was a limited site survey conducted between December 1985 and January 1990. The first extensive scan investigation was performed between October 1994 and May 1995, which included surface gamma surveys and soil sampling to delineate the general extent of the contamination. The most

recent investigation was conducted in 1996 and 1998 and included an assessment of radionuclides and chemicals in the background soil and contaminated soil in the training sites, geophysical surveys of the sites, a health physics assessment and radionuclide grain size analysis. During the 2001 survey, the licensee selected a non-impacted background area and performed extensive analyses for

background data. Additionally, the licensee performed building surveys of the two bunkers located in TS8.

The quantities and concentrations of thorium-232 contaminated soil above background, at the four training sites are summarized in the following table. The data was taken from the results of the 1994 to 1995 investigation.

Training site	Soil contaminated (yd ³)	Avg depth of contamination (in)	Avg Th-232 concentration (pCi/g)	Range of Th-232 concentration (pCi/g)
TS5	5,637	16	67.9	2.2–421.6
TS6	15,599	16	100.8	2.8–683.4
TS7	60	16	55.4	2.3–466
TS8	6,223	16	76.4	2.1–1,047.9

Approximately 9.2 acres (3.7 hectares) of the 43.2 acre (17.48 hectares) site are impacted with Brazilian thorium oxide sludge. The contaminants of potential concern associated with thorium oxide sludge include thorium-232 and its decay progeny and to a lesser extent, uranium-238 and its decay progeny. The extent of contamination is limited to the immediate vicinity of the training sites and to a maximum depth of 5 feet (1.524 meters) below ground surface. The vertical extent of ground contamination is typically 1–2 feet (0.61 meters) below ground surface. An estimated 27,500 cubic yards yd³ (21,025 m³) are radiologically contaminated.

The licensee considered five environmental pathways for the determination of the DCGL based on the conceptual modeling for Kirtland AFB. These five pathways include: external radiation, inhalation of particulates and radon, ingestion of soil and plant foods. There are no indications of contamination migration into surface water drainages or groundwater.

3.7.1 Radiological Status of Structures and Equipment

The DP outlines procedures for decommissioning Buildings 28005 and 28010 at training site TS8. The contamination on the interior surfaces of these storage bunkers exceeds the limits established in 10 CFR 20.1402, for the radiological criteria for unrestricted use for building surfaces. The interior surfaces of the bunkers would be cleaned and tested to determine if the remaining contamination level is acceptable. Demolition and disposal of these buildings would be performed if the contamination cannot be removed. Additionally, the licensee has established action levels that would ensure effluent releases generated

during decommissioning activities, such as scabbling or demolition, are below the levels allowed by 10 CFR part 20. The NRC would require the USAF to comply with the regulations established in 10 CFR part 20, to ensure the doses would be bounded by 25 mrem.

3.7.2 Radiological Status of Surface and Subsurface Soils

The licensee performed analysis of collected soil samples, scanning measurements and used historical information to classify soil survey units. The licensee calculated concentration guidelines for surface contamination of soils in the impacted areas of the training sites using RESRAD code, Version 6.1. The DCGLs would define the maximum amount of residual contamination in soils that would satisfy the NRC's regulations in 10 CFR part 20, subpart E, "Radiological Criteria for License Termination."

4.0 Environmental Impacts

There are limited potential short-term environmental impacts associated with the proposed decommissioning activities. The following sections discuss possible impacts on the environment resulting from approval of the DP.

4.1 Non-Radiological Impacts

Completion of the decommissioning activities would allow for unrestricted use of the site. The proposed decommissioning action would have a positive environmental impact on the area since low-level radioactive contamination would be removed from the soil above the aquifer.

4.1.1 Land Use and Socioeconomic Impacts

This action would not have an adverse impact on future land use.

Kirtland AFB has used the training sites since they were established in 1961. Remediation activities would provide a long-term positive impact to local socioeconomic conditions. Currently, land areas at Site OT-10 cannot be used for activities other than radiological training because dose rates associated with contamination there can exceed 25 mrem/year. Removal of radiologically contaminated materials would free the sites for recreational, residential, and/or industrial use. In addition, removal of Site OT-10 from administrative controls would release economic resources for use elsewhere.

4.1.2 Air Quality

There are no expected adverse impacts to air quality as a result of planned decommissioning activities. There would be a slight increase in dust emissions during the removal of the contaminated soil; however, there is little likelihood that airborne radioactive material would be a problem on the site during any operation conducted for the remediation. USAF would minimize the potential for airborne effluent releases by using light water spray to suppress the dust during activities that could generate significant quantities of dust. Activities that could generate significant quantities of dust include the excavation of the soil, processing and packaging of the remediated soil into the intermodal containers. Heavily traveled, clean areas would also be sprayed lightly.

4.1.3 Water Resources

This action would not have an adverse impact on water resources. The Kirtland AFB OT-10 training sites are not located in a flood plain of any streams or rivers. There are no wetlands located in the project area. There would