ENVIRONMENTAL UPDATE

Information About Kirtland Air Force Base's Installation Restoration Program

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Non-RCRA IRP Activities

Although the majority of Installation Restoration Program (IRP) work is on Resource Conservation and Recovery Act (RCRA)-permitted sites, the Air Force is also investigating sites not under the permit. These include newly identified sites that haven't been put on the permit and sites that are under study because of other environmental regulations. A summary of IRP activities at non-RCRA sites is presented in this fact sheet, as well as a map showing the location of the sites.

IRP Activities at Radiation Training Sites TS-1 through TS-8 (IRP Site Number: RW-10)

Site Background

There are eight radiation training sites (TS-1 through TS-8) located in the northeast region of Kirtland AFB. Each site is fenced and marked with radiation warning signs. Access to the four active sites is restricted. These eight sites together are known as IRP site RW-10.

The training sites were established in the early 1960s to train military personnel in alpha radiation monitoring and decontamination at simulated nuclear weapons accident sites. The sites were used by the Interservice Nuclear Weapons School. To simulate an accident, thorium hydroxide sludge was applied to the training areas using a fertilizer spreader or shovel. Once the sludge dried, it was raked into the top 1/4-inch of soil. Depending on the site, the sludge covered between 100 and 70,879 square feet of soil. This process was repeated annually.

Four sites (TS-5, TS-6, TS-7, and TS-8) were placed into inactive status in 1989. These four sites were last used for training in 1986. The remaining four sites, TS-1, TS-2, TS-3 and TS-4, will continue to be used for training; however, the sites will not be re-seeded with thorium hydroxide.

Regulatory Status

IRP site RW-10 (TS-1 through TS-8) was not added to the RCRA Part B Permit since low-level radioactive sludge was the only contaminant of concern and is not regulated under RCRA. Regulation of source materials, like thorium, is the responsibility of the Nuclear Regulatory Commission (NRC). The thorium sludge spread on the training sites is natural thorium which came from tailings from titanium mining operations. Kirtland will initiate an investigation of sites TS-1 through TS-8 (IRP site RW-10) in FY 95. The investigation and cleanup of these sites will follow NRC and Environmental Protection Agency (EPA) guidance. Oversight will be performed by the New Mexico Environment

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Department (NMED), the EPA, and the NRC. The NMED and EPA will be provided all related documents for review and comment.

Proposed Investigation

The Air Force will conduct a non-intrusive surface radiation survey (that will not disturb the soil) and drill shallow soil borings at each of the radiation training sites. The results of this first phase of activity will be presented in a Preliminary Assessment/Site Investigation (PA/SI) report.

Golf Course Pond & Sewage Lagoons (IRP Site Number: LF-26)

Site Background

The golf course pond and sewage lagoons (IRP Site LF-26) were not added to the RCRA Part B permit as SWMUs by the EPA because they were being regulated by the NMED under a Notice of Violation (NOV) when Kirtland's Permit was granted in 1990. NMED issued an NOV to Kirtland in 1989, based on their classification of this site as a RCRA surface impoundment. Kirtland had previously considered the site a sewage treatment facility which falls under different environmental regulations.

Regulatory Status

The site was recommended for clean closure by Kirtland AFB in 1993 after a two-year investigation. NMED disapproved clean closure based on concerns regarding elevated chromium levels in groundwater samples collected during the earlier stages of the base's groundwater monitoring program. Kirtland was required to submit a Post Closure Care Plan in May 1994. A public comment meeting on the plan was held on May 19, 1994 with no attendance. The Post Closure Care Plan was approved by NMED.

Proposed Action

The Post Closure Care Plan is a two-phased plan. The first phase consists of a one-year quarterly monitoring program at eight wells, and a single round of the dried sewage sludge sampling. All samples will be tested for chromium. The second phase is a remediation phase that may be initiated depending on results of the first phase sampling.

Newly Identified Sites

In addition to the IRP sites already identified, Kirtland AFB has a proactive program to identify and report all potential release sites. During records searches and field investigations, new potential SWMUs are identified and reported to EPA Region 6 in Dallas, Texas. Kirtland is required to submit a SWMU assessment report for each site within 90 days of the original notification. The EPA then reviews these reports and, subsequently, determines if the sites should be added to the permit as SWMUs. These sites may also be added to the base's IRP site list. Newly identified sites that fall within these requirements are discussed below.

Radium Dump - Slag Metal Heaps

Site Background

The Radium Dump is an area located in the southeast portion of the base, west of the Starfire Optical Range. The site contains approximately ten metal slag heaps. The piles lie within a 600 by 300-foot area. The slag resulted primarily from the burning of captured World War II warplanes that were subjected to damage-endurance tests. The slag had not previously been determined to be a problem, but the area showed up as an

anomaly on radiation surveys of the base.

Investigation Results

An initial radiological survey of the radium dump slag metal heaps was conducted in May 1992. Results of this survey (two soil samples) indicated the presence of radium, probably the Ra-226 isotope used for luminescent radium aircraft dials. Most aircraft built during that time period used radium dials. In June 1992, a detailed survey was conducted. Fifteen soil and slag samples each were collected and analyzed for beta/gamma net count rate, alpha net count rate, and beta/gamma exposure rate. Analytical results of the survey indicated there has been no significant migration of material from the general slag heap area. The highest external radiation exposure rate was 0.3 millirad per hour (mrad/hr), which is normally not considered a personnel exposure hazard. However, it is approximately 20 times the natural background rate of 0.015 mrad/hr. In addition, a radioactive aircraft dial was found, thus supporting the assumption that the radiation source is Ra-226.

Proposed Action

Kirtland is planning to fence the site and will be conducting a geophysical survey to locate all potential slag and waste piles. Shallow soil borings will be drilled and additional soil samples will be collected. This work is scheduled to begin in late 1994. The results of field investigations at the radium dump slag metal heaps will be submitted to EPA Region 6 in the form of a SWMU Assessment/RCRA Facility Assessment(RFA) report.

Other Sites

Seven other sites were identified in 1994 and are currently in various stages of SWMU assessment. These sites are:

- **ART Facility Buried Drum**

  A buried 55-gallon drum is located near Building 768 in the Armament Research Test (ART) Facility area. The drum is buried in a vertical position in an area previously used to store helium and nitrogen. Lab analysis of the sediments found high levels of heavy metals and total petroleum hydrocarbons.

- **ART Facility Drain Pit**

  A drain pit is located behind Building 765 in the ART Facility area. The concrete pit was a receptacle for noise-suppression water and combustion byproducts generated during rocket-engine test firings in the test cell in Building 765. The pit is piped into the storm-water drain system. Lab analysis of pit sediments indicates high levels of heavy metals and total petroleum hydrocarbons.

- **Building 20451 Laundry Facility**

  Building 20451, located on Wyoming Boulevard, is a former Sandia Base Laundry Facility. Documentation found during a records search indicates that soil testing was done to prepare for landscaping around this building. Test results showed that herbicides were used around the building. An additional review of the building's records indicates it was used by the US Army as a laundry facility, including a dry-cleaning plant.

- **South EOD Range Mine Shafts**

  There are over 80 abandoned mine shafts, pits, trenches, and tunnels on Kirtland.

The Department of Energy is the responsible party for a number of these sites. To date, however, the Air Force has identified three mines south of the Explosive Ordnance Disposal (EOD) Range that may have released contamination to the environment. The three mines are located in the southeastern portion of the base. All were fluorite mines operated in the 1940s. The first mine is located northeast of the Starfire Optical Range. It is a shaft of unknown depth. The large surface fractures and scattered shrapnel near this site indicate an explosive charge was detonated in this shaft. It is not known if the detonation was a result of testing or disposal. The second site is a steeply dipping shaft of unknown depth located east of the optical range. There is a large metal plate covering a portion of this shaft, and a set of conductive cable or detonation lines goes into the shaft. According to unconfirmed reports, testing of rocket motors and/or propellants may have been conducted at this site. The third site is a vertical shaft, at least 50 feet deep, located 1.5 miles east-southeast of the optical range. This shaft has water in it at a depth of about 40 feet. Fragments of a lightweight slag are located at the entrance, indicating the shaft may have been used to incinerate waste or for disposing of incinerated waste. There were no smelting activities at any of these sites.

- **Landfill D**

  This site is a 5-acre landfill southwest of the former Manzano Weapons Storage Area. The landfill was discovered during trenching operations to lay a telephone cable. Materials found in this landfill include wood, railroad ties, metal fragments, cans and other storage containers, glass and general construction/demolition debris. The actual dump area is about 400 feet in diameter, with an unknown depth (possibly greater than 20 feet, based on geological evidence).

- **Waste pits at the New Mexico Engineering Research Institute (NMERI)**

  Two waste pits were identified at the Civil Engineering Research Facility (CERF) Building 57001 area, which the New Mexico Engineering Research Institute (NMERI) operated to conduct explosives research from about 1961 until mid-1993. One pit is concrete, located on high ground approximately 425 feet west of Building 5700l. During testing operations, NMERI filled the pit with water and detonated an explosive device to test blast wave effects on underwater pressure gauges. Following the test, two drains were opened and the pit contents allowed to drain onto the surface. Over the years, blast effects caused structural deterioration and, in early 1993, the pit was blasted to collapse, filled in, and abandoned. The second pit is an earthen structure located 725 feet west of building 5700l. The pit served as NMERI's blast area and was partially developed by setting off explosives suspended just above ground level. Earthen material was used to build up the sides and help contain the blast. In recent years, the pit may have been used to dispose of paper, lumber, and other unknown wastes.

- **Trestle Site**

  The Trestle Site is currently inactive but includes a vehicle maintenance pit with an

associated oil-water separator, as well as an emergency-jet fuel-spill holding pit that were operational in the late 1970s through the late 1980s. The maintenance pit was used to service the tractor that towed aircraft onto the Trestle pad. It is a concrete pit with a drain in the center. The tractor was driven over the pit and serviced from below. The drain is connected to an oil-water separator, which drains into an open ditch to the north. The pit appears to be structurally sound but is contaminated with petroleum, oils, and lubricants. Contaminated water can be seen in the drain and the oil-water separator. The oil-water separator has been damaged, and the inflow and outflow lines are located at the same height above the base. The depth of the separator is unknown. At the outlet to the drainage ditch, an area of soil measuring 25 feet by 3 feet is visibly stained and has a hydrocarbon odor. There are also some small areas of contaminated soil near the pit.

The emergency-jet fuel-spill holding pit is located west of the vehicle maintenance pit and is concrete-lined. The pit was designed to contain any fuel spilled during aircraft refueling. It does not appear to have been used and no evidence of contamination was observed.

FOR MORE INFORMATION ABOUT THE AIR FORCE'S INSTALLATION RESTORATION PROGRAM AT KIRTLAND, CONTACT THE:

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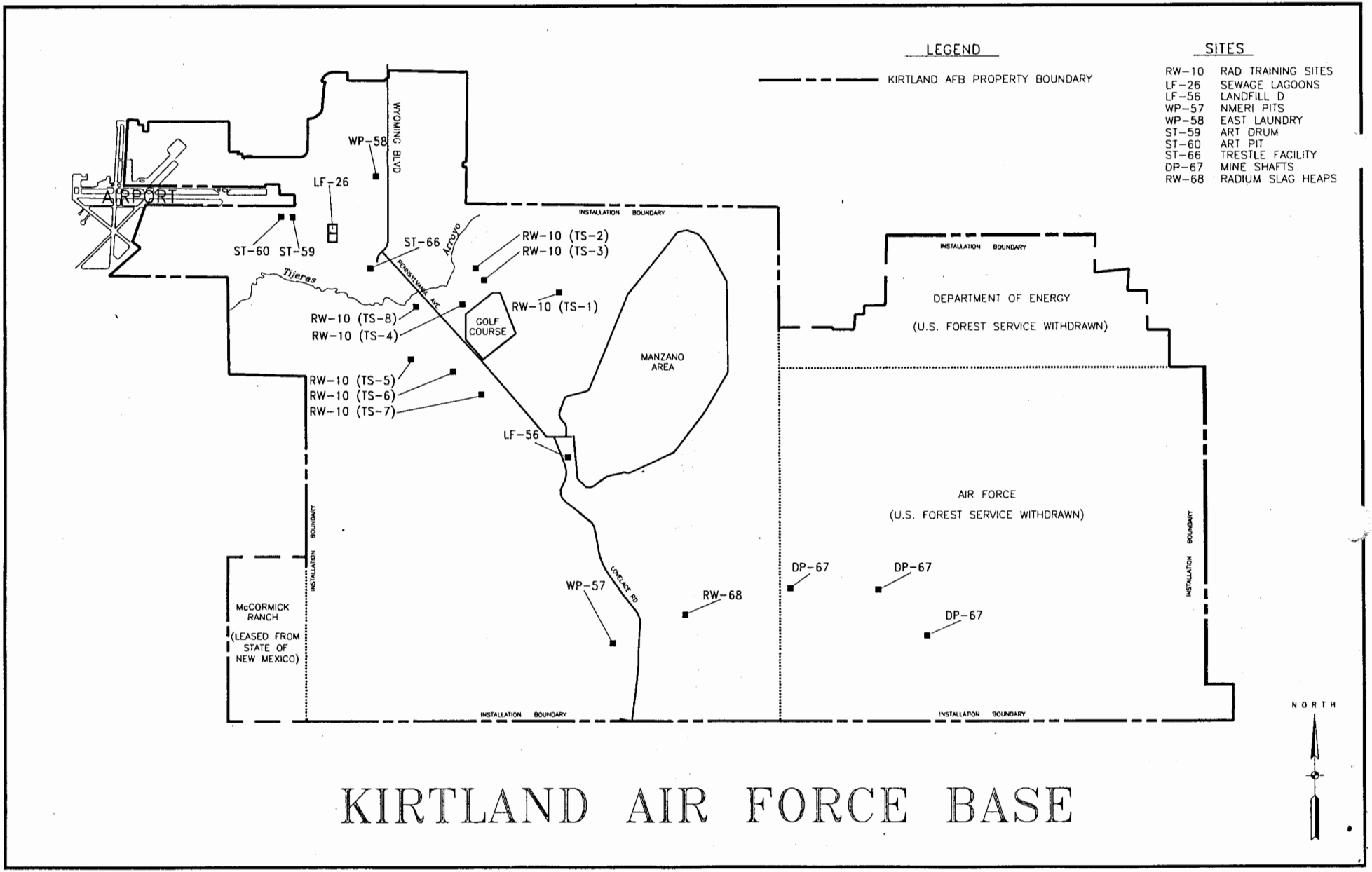
NEW SITES AND NON-PERMIT SITES
KIRTLAND INSTALLATION RESTORATION PROGRAM



KIRTLAND AIR FORCE BASE