

## 15 SKEET RANGES

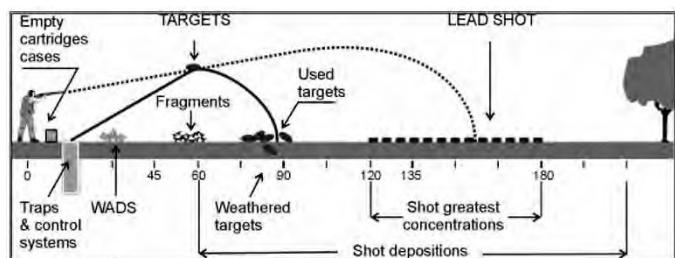
The Kingman Ground-to-Ground Gunnery Range was established in August of 1942, following the 1941 attack on Pearl Harbor. It was home to the Kingman Flexible Gunnery School, one of only seven schools of its kind in the United States.

The purpose of the gunnery school was to teach recruits how to shoot down attacking enemy fighter planes using the guns of the B-17 bomber. During skeet shooting, students used 12-gauge shotguns to fire at clay targets, or "pigeons." World War II clay pigeons were constructed with coal tar pitch. Coal tar pitch contains chemicals known as polycyclic aromatic hydrocarbons (PAHs). PAHs may be harmful to human health if inhaled, ingested, or if they come in contact with skin. PAHs can be toxic, but they are not explosive or radioactive.

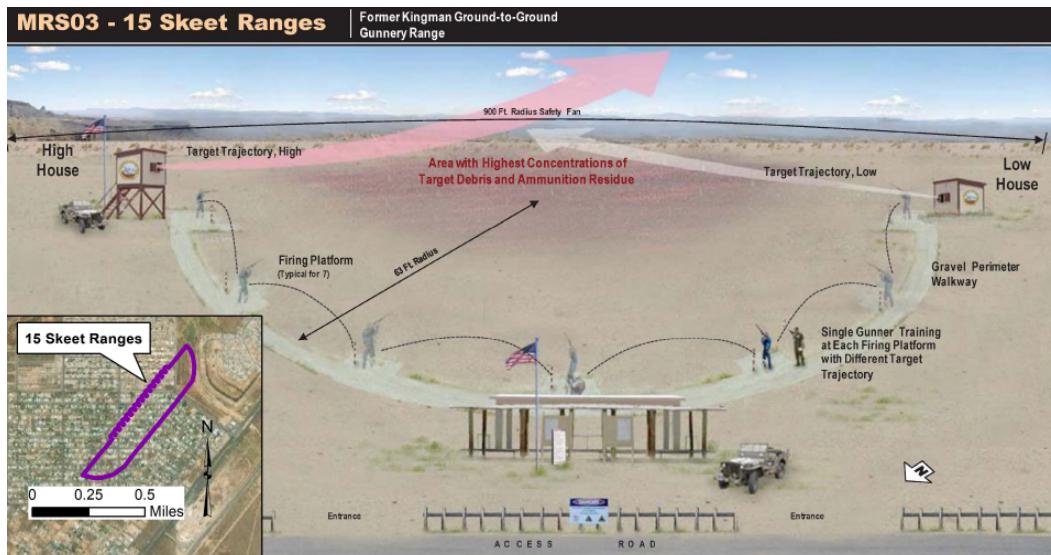
15 Skeet Ranges, hereinafter referred to as the Site, is comprised of roughly 75 acres located parallel to Highway 66. It includes approximately 284 individual residential properties/lots located on North Tommie Drive; and East Lass, East Snavely, East Develin, East Shaeffer, East John L, and East Northfield Avenues. The Site was used to teach gunnery students how to fire at a moving target.

There were 15 skeet ranges located at the gunnery school. The ranges were constructed side-by-side in an overlapping pattern. These overlapping skeet ranges define the size and shape of the Site.

Each individual skeet range was laid out in a semi-circle with a 63-foot radius, with six to eight firing positions situated along the edge. Clay pigeons were launched from two structures, a high house and low house, at various angles and heights. Students would move around the semi-circle, shooting at clay pigeons from each firing position. The firing positions of each skeet range were located on the northwestern portion of the Site, and students fired toward the southeast.



Flight paths of different materials resulting from clay target shooting (in meters, 1= 3.28 feet), ITRC, 2005.



Firing positions of a typical skeet range, ITRC, 2005.

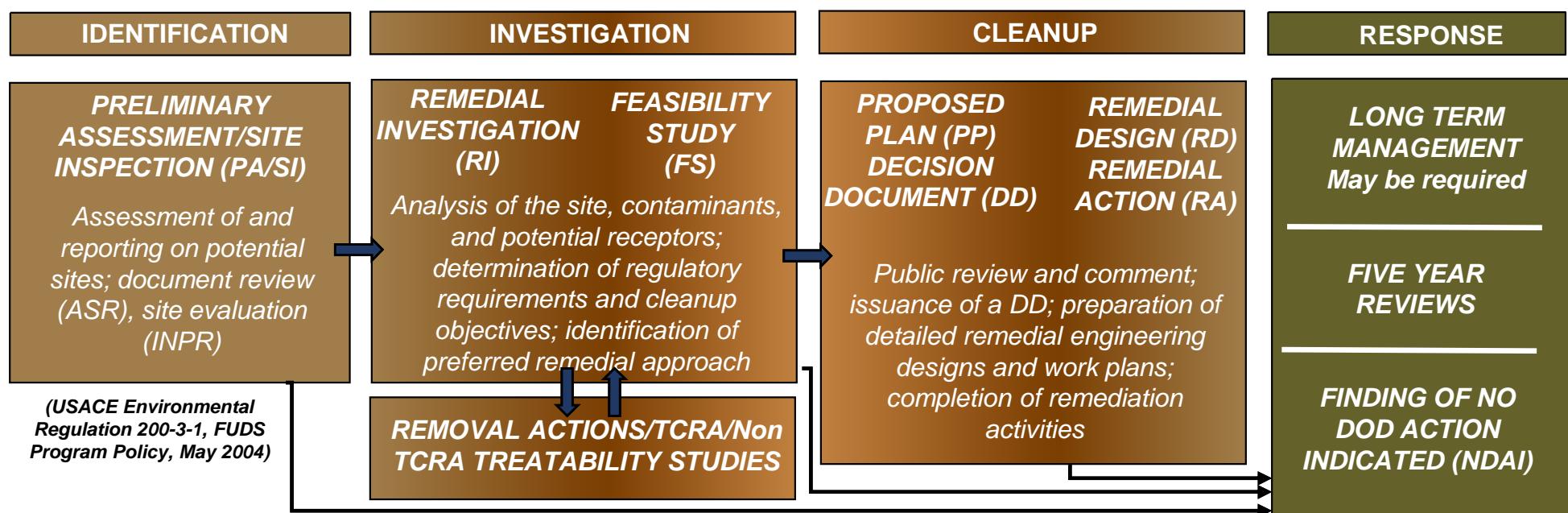
# FUDS/Military Munitions Response Program Implementation

The U.S. Army Corps of Engineers (USACE), Los Angeles District is investigating the Site, also known as Munitions Response Site (MRS) 03, through the Formerly Used Defense Sites (FUDS) program.

A Remedial Investigation (RI) and Feasibility Study (FS) is being conducted to characterize the environmental conditions and to determine the nature and extent of potentially hazardous substances related to military munitions used at the Site.

The Department of Defense (DoD) is responsible for environmental restoration of FUDS properties that were formerly owned by, leased to, or otherwise possessed by the United States and under the jurisdiction of the Secretary of Defense. The U.S. Army is DOD's lead agent and USACE executes the FUDS program on behalf of the U.S. Army and DOD.

Below is a summary describing the process of the FUDS implementation.

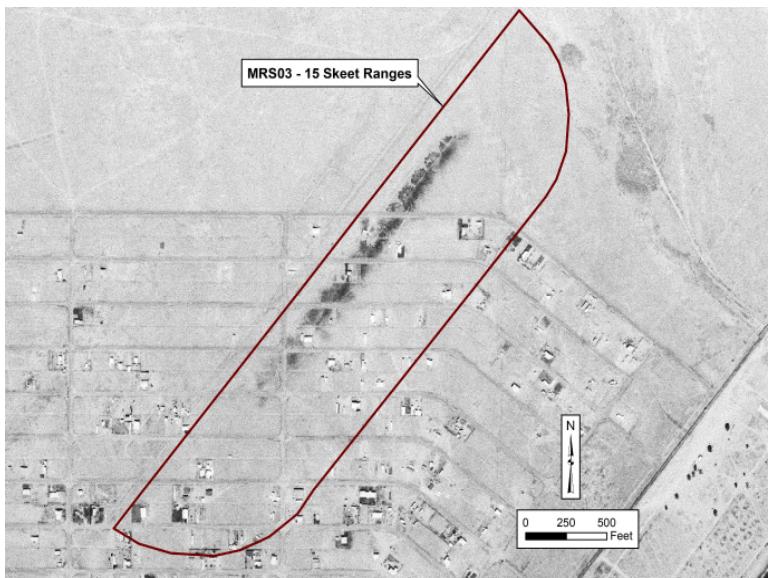


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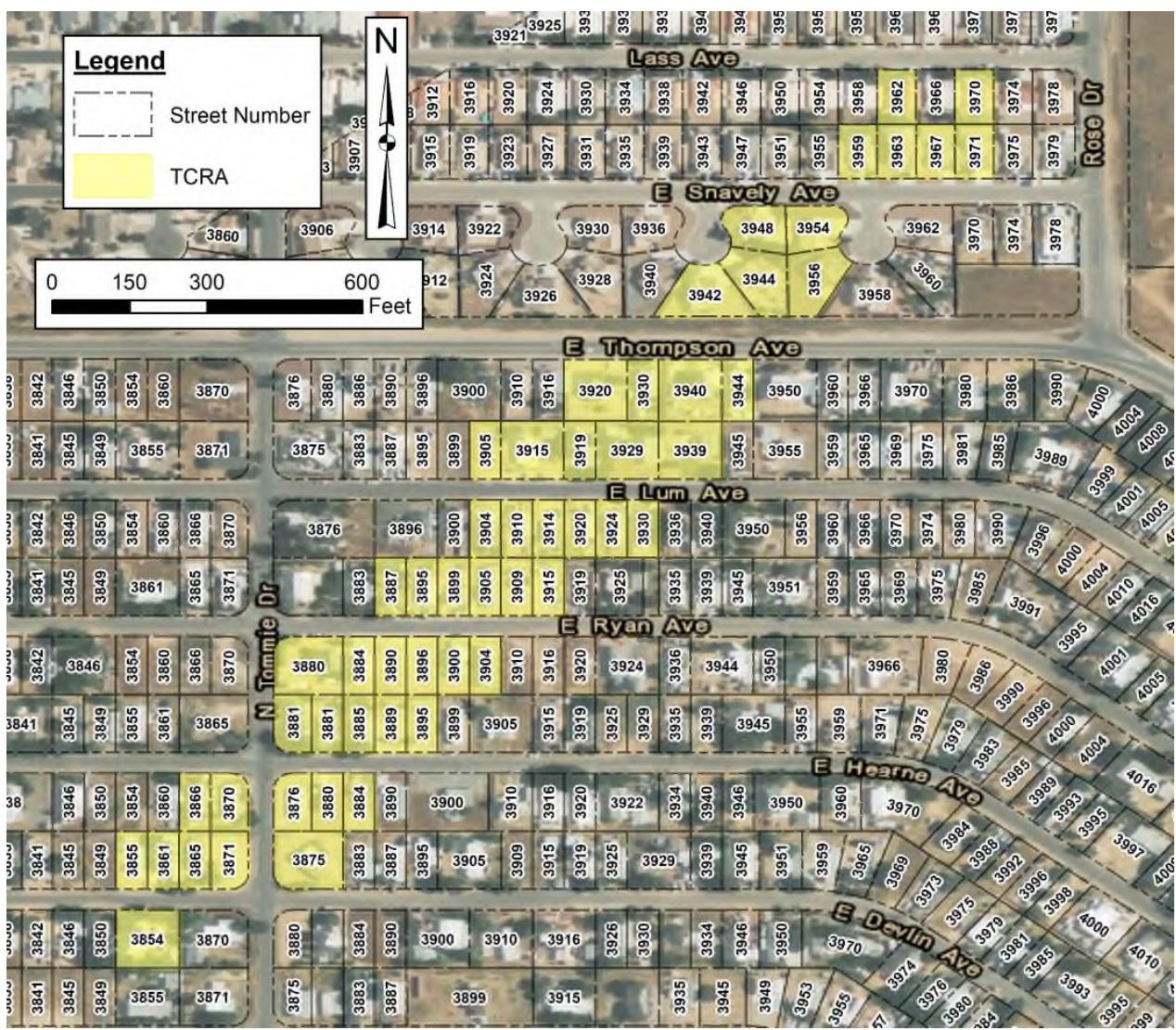
The Site is currently in the RI process. In order to perform the RI, a right of entry (ROE) must be signed by the home owner. As described above, an RI is necessary to proceed with the cleanup phase of work. If a home owner is interested in having an RI completed at their property they can request the ROE paper work from the USACE contact shown to the left.

## **2013-2014 TIME CRITICAL REMOVAL ACTION (TCRA)**

The TCRA was performed to address visible debris from clay pigeons that were associated with elevated PAH concentrations in the near-surface soils at the Site. The TCRA was focused on properties within and southeast of the firing positions of the former skeet ranges. Under the TCRA program, the top two feet of PAH-impacted soils from 55 properties within the immediate skeet and shot-fall zone were excavated and the soil was transported off-site for proper disposal. The excavated areas were backfilled with clean soil material.



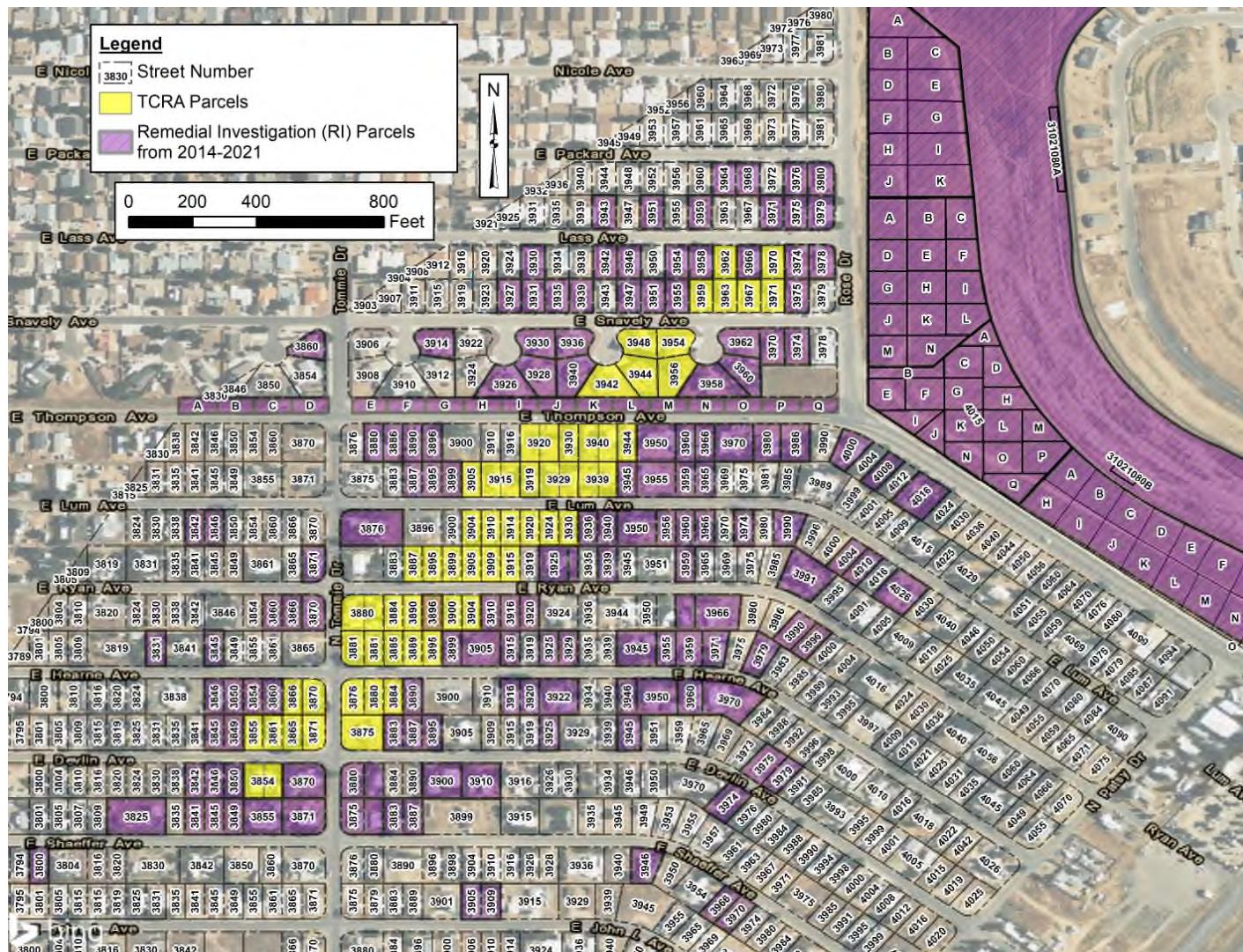
**View of 1967 aerial with visible debris from clay pigeons, and 15 Skeet Ranges (the Site) boundary.**



*Properties in yellow were a part of the Time Critical Removal Actions (TCRA).*

## 2014-2021 REMEDIAL INVESTIGATIONS (RI)

Properties not remediated under the TCRA program were included in the RI program to investigate the nature and extent of the PAHs, lead, and other metals (antimony, copper, and zinc) in soil at the Site. Between December, 2014 and April, 2021, multiple soil samples were collected from the ground's surface (0-2 inches) and subsurface (0-1 foot, and 1-2 feet). The results for all properties investigated were summarized in the RI Report and Addendum RI Report. These reports are available in Mohave County Library – Kingman Branch, located at 3269 North Burbank Street, Kingman, AZ 86402-7000. Additional information is available in the following USACE Website: <https://www.spl.usace.army.mil/Missions/Formerly-Used-Defense-Sites/Kingman-Ground-to-Ground-Gunnery-Range/MRS03-15-Skeet-Ranges/>



## EXAMPLES OF INVESTIGATIONS



**Typical clay pigeon debris**



**Typical clay pigeon debris (black, raised line pattern)**



**Typical clay pigeon debris (black, raised line pattern)**



**Utility locations, showing water lines (blue), gas lines in yellow, and electrical lines (red)**



**Preparation of sampling location for hand augering and sample collection**



**Examples of soil boring and sampling at 1 foot and 2 feet**

## What are Polycyclic Aromatic Hydrocarbons?

Polycyclic Aromatic Hydrocarbons (PAHs) are a group of different chemicals commonly found in the environment. They are formed by burning coal, oil, gas, garbage, or other organic substances like tobacco and charbroiled meat. In the past, PAHs were used extensively in the manufacturing of clay targets.

### What are the health effects of PAHs?

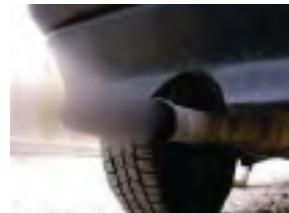
Human health effects of PAH exposure are determined by how someone is exposed, in what quantity, and for how long. PAHs do not typically stay in the body for long periods of time, and in fact, most PAHs that enter the body are excreted within a few days.

**Short-term health effects:** There are no known short-term health effects.

**Long-term health effects:** Chronic exposure, typically over many years, to PAHs may cause cancer, a decrease in respiratory function, and kidney and liver damage.

### How can I be exposed?

**Skin absorption:** PAHs may be absorbed through skin, typically from contact with contaminated sources.



**Breathing:** PAHs may be inhaled from tobacco, wood smoke, fossil fuels, exhaust fumes, and inhalation of dust (this is the inhalation pathway for this site).



**Drinking/Eating:** PAHs can be ingested through incidental ingestion of soil on hands, eating charcoal-broiled meats, vegetables grown in contaminated soil, or drinking contaminated water.



Residential water within the Site is not affected because it is provided by off-site sources and independently verified as safe to drink. Additionally, groundwater is not anticipated to be impacted due to its estimated depth exceeding 500 feet below ground surface. There are no groundwater wells located within the Site.



### How can I reduce exposure?

1. If you have walked/potentially walked through skeet target fragments, rinse off and remove your shoes before entering your home.
2. If your hands and clothes have come into contact with skeet target fragments, wash your hands and clothes, especially before eating.
3. Keep children from playing in areas with skeet target fragments, and follow the steps above if they do come in contact with soils that are potentially contaminated with PAHs.
4. Change your homes filters according to the manufacturer's directions.
5. Use raised garden systems and continue to wash all produce before eating.
6. Avoid landscaping or digging in areas with skeet target fragments or potential PAH hazards until the soil has been remediated.

**Proposed Schedule:**  
Additional RI - Spring 2022  
FS – Summer 2022  
PP and DD – Fall/Winter 2022

**Where Can I Get Additional Information?  
Please Call or Write:**

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