



# **NATIONAL TRAINING CENTER AND FORT IRWIN**

Army Cleanup Program

Installation Action Plan Final

June 2024



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## STATEMENT OF PURPOSE

The Installation Action Plan (IAP) provides evidence that the Army is firmly committed to expeditious identification and cleanup of environmental contamination, and that the installation has a credible, organized program to carry out that commitment. The IAP provides an outline of the total multi-year environmental cleanup program for each site with ongoing or future planned restoration activity and includes the (1) environmental restoration requirements, (2) the rationale for the selected technical approach, and (3) foundation to develop corresponding financial needs for each cleanup site.

## INSTALLATION OVERVIEW

**Installation Name:** NATIONAL TRAINING CENTER AND FORT IRWIN

**Installation City:** FT IRWIN

**Installation County:** San Bernardino

**Installation State:** CA

**Regulatory Participation - Federal:** US Environmental Protection Agency (USEPA), Region IX

**Regulatory Participation - State:** Department of Fish and Game Department of Toxic Substances Control, Region IV (DTSC) California, California Water Board

## ACRONYMS

Acronym	Definition
AEDB-R	Army Environmental Database - Restoration
CC	Compliance-related Cleanup
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
CMI(C)	Corrective Measures Implementation (Construction)
CMI(O)	Corrective Measures Implementation (Operations)
CMS	Corrective Measures Study
CRL	Cleanup Restoration & Liabilities
CS	Confirmation Sampling
DD	Decision Document
DES	Design
ENV	Environmental
FS	Feasibility Study
IM	Interim Measure
IR	Installation Restoration
IRA	Interim Remedial Action
IRP	Installation Restoration Program
LTM	Long-Term Management
LUC	Land Use Control
MC	Munitions Constituents
MEC	Munitions and Explosives of Concern
MNA	Monitored Natural Attenuation
MR	Munitions Response
MRS	Munitions Response Site
MRSPP	Munitions Response Site Prioritization Protocol
NASA	National Aeronautics and Space Administration
OB	Open Burning
OD	Open Detonation
PA	Preliminary Assessment
PFAS	Per- and Polyfluoroalkyl Substances
PP	Proposed Plan
RA(C)	Remedial Action (Construction)
RA(O)	Remedial Action (Operations)
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design

Acronym	Definition
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RI	Remedial Investigation
RIP	Remedy-in-Place
ROD	Record of Decision
RRSE	Relative Risk Site Evaluation
SI	Site Inspection
UAV	Unmanned Aerial Vehicle
UE	Unrestricted Exposure
UST	Underground Storage Tank
UU	Unlimited Use
UXO	Unexploded Ordnance

## PHASE TRANSLATION TABLE

CERCLA Phase	RCRA Phase	RCRA UST Phase
Preliminary Assessment (PA)	RCRA Facility Assessment (RFA)	Initial Site Characterization (ISC)
Site Inspection (SI)	Confirmation Sampling (CS)	Investigation (INV)
Remedial Investigation/ Feasibility Study (RI/FS)	RCRA Facility Investigation/Corrective Measures Study (RFI/CMS)	Corrective Action Plan (CAP)
Remedial Design (RD)	Design (DES)	Design (DES)
Interim Remedial Action (IRA)	Interim Measure (IM)	Interim Remedial Action (IRA)
Remedial Action (Construction) (RA(C))	Corrective Measures Implementation (Construction) (CMI(C))	Implementation (Construction) (IMP(C))
Remedial Action (Operations) (RA(O))	Corrective Measures Implementation (Operations) (CMI(O))	Implementation (Operations) (IMP(O))
Long-Term Management (LTM)	Long-Term Management (LTM)	Long-Term Management (LTM)



## **PROGRAM SUMMARY**

**Number of Open Sites with Response Complete/Total Open IR Sites: 3/6**

**Number of Open Sites with Response Complete/Total Open MR Sites: 0/9**

**Number of Open Sites with Response Complete/Total Open CC Sites: 0/0**





## SITE-LEVEL INFORMATION

## 06225.1002\_FTIR-02\_ABANDONED SANITARY LANDFILL 2

**Env Site ID:** FTIR-02

**Cleanup Site:** ABANDONED SANITARY LANDFILL 2

**Alias:** FTIR-02

**Regulatory Driver:** CERCLA

**RIP Date:** 9/30/1999

**RC Date:** 9/30/1999

**RC Reason:** All Required Cleanup(s) Completed

**SC Date:** 9/16/2054

**Program:** ENV Restoration, Army

**Subprogram:** IR

**NPL Status:** No

**Hazardous Ranking Score:** 0

**RRSE:**

**MRSPP:** N/A

Phase	Start	End
PA:	1/31/1991	1/31/1992
SI:	1/31/1991	1/31/1992
RI/FS:	9/30/1992	6/30/1997
RD:	7/31/1997	3/31/1999
IRA:	6/30/1997	7/31/1997
RA(C):	3/31/1999	9/30/1999
RA(O):	--	--
LTM:	10/31/1999	9/15/2054

**Site Narrative:** FTIR-02 comprises approximately 16 acres located northwest of the active sanitary landfill (FTIR-01). From 1940 to 1945 the site was operated as a land disposal and open burning (OB) facility. The site is divided into two separate areas A and B. FTIR-02-A consists of a circular bermed feature in the eastern portion of FTIR-02. FTIR-02-B is a series of trenches oriented in a northeast to southwest direction in the southwestern portion of the site. The types of debris disposed of at these two areas are similar and consist of burned material broken glass metal charred wood and ashes. Approximately 4.4 acres of the landfill have less than two feet of cover over its contents. In accordance with the requirements of the 1999 Closure/Post-Closure Maintenance Plan groundwater monitoring was performed semiannually for a minimum of five years and cover inspection will be performed semiannually for a minimum of 30 years. Groundwater monitoring was discontinued in 2020 based on recommendations in the five-year review. Cleanup/Exit Strategy- Cover inspections continue to be conducted semiannually. Cap maintenance, cap repairs, and settlement surveys will be performed every five years per the long-term monitoring plan. Five-year reviews have been discontinued and long-term management (LTM) is in place.

## 06225.1004\_FTIR-04\_ABANDONED SANITARY LANDFILL 4

**Env Site ID:** FTIR-04

**Cleanup Site:** ABANDONED SANITARY LANDFILL 4

**Alias:** FTIR-04

**Regulatory Driver:** CERCLA

**RIP Date:** 9/30/1999

**RC Date:** 9/30/1999

**RC Reason:** All Required Cleanup(s) Completed

**SC Date:** 9/16/2054

**Program:** ENV Restoration, Army

**Subprogram:** IR

**NPL Status:** No

**Hazardous Ranking Score:** 0

**RRSE:**

**MRSPP:** N/A

Phase	Start	End
PA:	1/31/1991	1/31/1992
SI:	1/31/1991	1/31/1992
RI/FS:	1/31/1992	6/30/1997
RD:	7/31/1997	3/31/1999
IRA:	6/30/1997	7/31/1997
RA(C):	5/31/1999	9/30/1999
RA(O):	--	--
LTM:	10/31/1999	9/15/2054

**Site Narrative:** This 20-acre site is located immediately west of the inactive landfill (CCFTIR-01). From 1950 to 1980 it was operated as a land disposal and OB facility. It consists of a northeastern bulk disposal area and a western trench area. The types of debris found in the western trenches consisted of household rubbish construction debris and miscellaneous equipment parts. In the northeastern burial area construction material with some household debris and evidence of burning were found. Approximately 13 acres of FTIR-04 have less than two feet of cover. In accordance with the requirements of the 1999 Closure/Post-Closure Maintenance Plan groundwater monitoring was performed semiannually for a minimum of five years and cover inspections are performed semiannually for a minimum of 30 years. Cleanup/Exit Strategy- Cap maintenance and cap repairs will continue annually, and settlement surveys will be performed every five years per the long-term monitoring plan. Five-year reviews have been discontinued and LTM is in place.

## 06225.1006\_FTIR-06\_TROOP LANDFILL DISPOSAL SITE

**Env Site ID:** FTIR-06

**Cleanup Site:** TROOP LANDFILL DISPOSAL SITE

**Alias:** FTIR-06

**Regulatory Driver:** CERCLA

**RIP Date:** 6/30/1999

**RC Date:** 6/30/1999

**RC Reason:** All Required Cleanup(s) Completed

**SC Date:** 9/16/2054

**Program:** ENV Restoration, Army

**Subprogram:** IR

**NPL Status:** No

**Hazardous Ranking Score:** 0

**RRSE:**

**MRSPP:** N/A

Phase	Start	End
PA:	1/31/1991	1/31/1992
SI:	1/31/1991	1/31/1992
RI/FS:	9/30/1993	10/31/1998
RD:	11/30/1998	3/31/1999
IRA:	--	--
RA(C):	3/31/1999	6/30/1999
RA(O):	--	--
LTM:	10/15/2012	9/15/2054

**Site Narrative:** This site was used for solid waste disposal and possibly for OB/open detonation (OD) activities. It is located 17.5 miles from the cantonment area at Universe Transverse Mercator grid coordinates NK5012 and is approximately 2.3 acres in size. The exact dates of operation are unknown. The most recent documentation indicates that the landfill has not been used since 1980. The main part of the landfill is a 300-foot long by 120-foot wide rectangular area of disturbed soil. The pit is 120 feet long by 15 feet wide and five to six feet deep. The spoil piles are two to six feet high and are home to several types of animals including kit fox and whip tail lizards. In agreeing to site closure, the state of California provided written comments saying the soil piles are prime habitat and should be disturbed as little as possible. In accordance with the 1998 Scope of Work engineering controls have been in place at FTIR-06 since April 1999. Engineering controls consist of native soil caps (over the spoil piles), a K-rail (concrete) barrier with non-metallic stakes, and four warning signs on each side of the site. Cleanup/Exit Strategy- Land use controls (LUC) including maintaining signs and barriers to protect wildlife habitat from vehicles and training activities will be continued. Cap maintenance and cap repairs will continue as needed as part of long-term monitoring. Pursuant to the third five-year review of July 2014 five-year reviews are no longer required for this site.

## 06225.1061\_CCFTIR-01\_INACTIVE/ ACTIVE LANDFILL

**Env Site ID:** CCFTIR-01

**Cleanup Site:** INACTIVE/ ACTIVE LANDFILL

**Alias: #**

**Regulatory Driver:** CERCLA

**RIP Date:** 10/1/2027

**RC Date:** 9/30/2047

**RC Reason:** Not assigned

**SC Date:** 12/31/2057

**Program:** ENV Restoration, Army

**Subprogram:** IR

**NPL Status:** No

**Hazardous Ranking Score:** 0

**RRSE:** Not Evaluated

**MRSPP:** N/A

Phase	Start	End
PA:	9/30/1991	9/30/1992
SI:	9/30/1991	9/30/1992
RI/FS:	8/31/1997	12/31/2025
RD:	1/1/2026	12/31/2026
IRA:	--	--
RA(C):	1/1/2027	9/30/2027
RA(O):	10/1/2027	9/30/2047
LTM:	10/1/2047	12/30/2057

**Site Narrative:** This site is located east of the main cantonment area on the south side of Sanitary Fill Road and consists of an inactive 36-acre northern inactive disposal area used from the late-1940s to the 1980s a formerly active 18-acre active disposal area located in the southern part of the site used from 1993 to the early 2000s and an inactive seven-acre petroleum oil and lubricants contaminated soil disposal pile located east of the inactive disposal area. There are no longer any active areas of this landfill. Historical records have not been located for the 36-acre disposal area, but geophysical surveys indicate unexploded ordnance (UXO) and other magnetic anomalies are a concern in the northern portion of CCFTIR-01. Available records document that no hazardous waste has been disposed of in the 18-acre disposal area. A new lined disposal cell eight acres in size was opened for disposal in 2001. This site is encompassed by a single Resource Conservation and Recovery Act (RCRA) Subtitle D permit; however, since the 36-acre portion of the landfill has not received waste prior to current California permitting regulations (Title 27) the site regulatory driver for cleanup is Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA). The site has been funded and managed under the Compliance-related Cleanup (CC) program as site CCFTIR-01 since FY09 current and future cleanup costs are divided between Army programs- installation of a landfill cap for the site will be funded through a Directorate of Public Works account and groundwater/soil gas monitoring operation of the probable remedy monitored natural attenuation (MNA) and LTM will be funded through the Installation Restoration Program (IRP). LTM is expected to include semiannual groundwater monitoring and quarterly soil gas monitoring. As a result of previously detected volatile organic compounds in groundwater the site is undergoing evaluation monitoring and development of an engineering feasibility study/corrective action plan pursuant to Title 27 of the California Code of Regulations. Cleanup/Exit Strategy- The feasibility study for the site is underway and the preferred alternative consists of (1) MNA relying on naturally occurring processes that control volatile organic compound -contaminated groundwater at CCFTIR-01 (2) long-term groundwater monitoring to confirm continuing stability or shrinking of the current plume based on evaluation of most recent sampling data and fate and transport modeling

simulations; and (3) institutional controls that would control exposure to volatile organic compounds in groundwater at CCFTIR-01. Upon selection of the remedy in the decision document (DD) a containment zone will be established and MNA parameters implemented. Because hazardous substances pollutants or contaminants will remain at the site at concentrations exceeding levels that allow for unlimited use (UU)/unrestricted exposure (UE) five-year remedy reviews will continue until UU/UE is achieved.

## 06225.1065\_CCFTIR-02\_WASTE WATER TREATMENT FACILITY

**Env Site ID:** CCFTIR-02

**Cleanup Site:** WASTE WATER TREATMENT FACILITY

**Alias:** #

**Regulatory Driver:** CWA

**RIP Date:** 9/30/2027

**RC Date:** 9/30/2027

**RC Reason:** Not assigned

**SC Date:** 9/30/2027

**Program:** ENV Restoration, Army

**Subprogram:** IR

**NPL Status:** No

**Hazardous Ranking Score:** 0

**RRSE:** Not Evaluated

**MRSPP:** N/A

Phase	Start	End
PA:	1/15/2010	1/15/2010
SI:	9/15/2010	2/15/2012
RI/FS:	1/15/2013	9/30/2027
RD:	--	--
IRA:	--	--
RA(C):	--	--
RA(O):	--	--
LTM:	--	--

**Site Narrative:** The Waste Water Treatment Facility is located on Fifth Street on the eastern side of Irwin Basin. The facility is designed to collect and treat an average of two million gallons domestic sewage per day with a peak flow of four million gallons domestic. The facility consists of the following unit processes- headworks aeration basin (oxidation ditch), secondary clarifiers chlorine contact tank, effluent ponds, sludge drying beds, the tertiary treatment plant, and the irrigation pump station. The treated effluent flows to a series of percolation ponds. The first pond in the series is a 4.9-acre outfall/percolation pond. From this percolation pond water can be pumped to a 22-acre evaporation pond. Alternatively, the effluent flows through a conveyance pipe to a series of three storage ponds. The Waste Water Treatment Facility operates under the regulatory purview of the Lohantan Regional Water Quality Control Board. The control board issued an investigative order (Number R6V-2010-0030) in 2010 based on noncompliance for nitrate with Waste Discharge Identification No. 6B360703001 (discharge to groundwater). Since the nitrate source is likely an old drying pond no longer part of wastewater discharge this action is under a CERCLA regulatory driver. One additional delineation well was installed the week of April 27, 2020. The well installation was approved by the Lahontan Regional Water Quality Control Board in 2020 and is now undergoing four quarterly monitoring events. Sampling shows nitrate has not migrated beyond the well and this site will be closed with no further cleanup required. This site is located just east of the cantonment area of the Fort Irwin Basin. The well has been monitored on a quarterly basis for one year, and results remain under maximum contaminant levels. Cleanup/Exit Strategy- Army will request closure of the investigative order.

**06225.1070\_FTIR-42\_PFAS**

**Env Site ID:** FTIR-42

**Cleanup Site:** PFAS

**Alias:** #

**Regulatory Driver:** CERCLA

**RIP Date:** 9/30/2029

**RC Date:** 9/30/2029

**RC Reason:** Not assigned

**SC Date:** 9/30/2029

**Program:** ENV Restoration, Army

**Subprogram:** IR

**NPL Status:** No

**Hazardous Ranking Score:** 0

**RRSE:**

**MRSPP:** N/A

Phase	Start	End
PA:	9/30/2017	9/15/2019
SI:	3/15/2020	3/15/2023
RI/FS:	5/30/2024	9/30/2029
RD:	--	--
IRA:	--	--
RA(C):	--	--
RA(O):	--	--
LTM:	--	--

**Site Narrative:** Per direction from Deputy Chief of Staff G-9 site created to account for all per- and polyfluoroalkyl substances (PFAS) costs at the installation. Currently a preliminary assessment (PA)/site inspection (SI) is underway to identify all releases of PFAS to the environment. Preliminarily the PA/SI indicates 11 areas of potential interest are expected to go to remedial investigation (RI), and 13 areas of potential interest require additional sampling to complete the SI phase.



## 06225.1044\_FTIR-001-R-01\_COMBAT ENGINEER'S RANGE OB

**Env Site ID:** FTIR-001-R-01

**Cleanup Site:** COMBAT ENGINEER'S RANGE OB

**Alias:** #

**Regulatory Driver:** CERCLA

**RIP Date:** 2/28/2026

**RC Date:** 2/28/2026

**RC Reason:** Not assigned

**SC Date:** 9/30/2055

**Program:** ENV Restoration, Army

**Subprogram:** MR

**NPL Status:** No

**Hazardous Ranking Score:** 0

**RRSE:** N/A

**MRSPP:** 3

Phase	Start	End
PA:	6/10/2002	5/1/2003
SI:	6/30/2006	8/31/2009
RI/FS:	10/31/2009	2/28/2025
RD:	3/1/2025	5/31/2025
IRA:	11/15/2011	5/21/2020
RA(C):	6/1/2025	2/28/2026
RA(O):	--	--
LTM:	3/1/2026	9/30/2055

**Site Narrative:** The Combat Engineer's Range OB/OD Area is about 1520 acres in size and is located within the non-active/inactive area west of the cantonment. Approximately half of the former range is located on the Goldstone Deep Space Complex. Goldstone Road bounds the property to the north. There are no buildings on the site. The cantonment area is just over one mile away and there are schools, residences, office buildings, restaurants, and shops within a two-mile radius. Based on interpretations of aerial photographs a 1999 archives search report indicates the two areas of the OB/OD area are divided by a strip of operational range. The western portion is located on the northern edge of the site and lies on the boundary separating the operational and nonoperational range property; it consists of two trenches several circular craters six structures excavation sites and graded pads. The second area described in the archives search report is located in the southern portion of the OB/OD area and is characterized as a demolition area. The western portion of the range located outside the Goldstone Deep Space Complex is currently part of a recreational area located behind the equestrian center and contains a Boy Scout camp recreation area. The portion of the Combat Engineer's Range OB/OD Area located within the Goldstone Deep Space Complex remains undeveloped and access to this area is controlled. Munitions and explosives of concern (MEC) hazards may also remain in both the surface and subsurface in the portion of the former range that overlaps the Goldstone Deep Space Complex. Portions of this range were surface cleared (including removal of live items) in 1999, 2000, 2001, 2007, and May 2009. At one time OB/OD areas within this range were identified as site FTIR-041 in the Environmental Restoration, Army program and listed as response complete (RC) in 1998. Historical records indicate that excess mortar and rocket ammunition small arms ammunition rocket propellants and explosive components (fuses boosters and bursters) may have been burned and/or detonated at the OB/OD area between the 1950s and 1981. The OB/OD area also overlaps a former close combat range. The close combat range begins within the OB/OD area and extends south beyond the OB/OD area. The 2009 SI recommended further investigation for MEC and munitions constituents (MC) at this site. Munitions debris was observed during the visual survey and three soil sample results exceeded the screening

criteria (one for lead one for iron and one for cyclotrimethylenetrinitramine.) The RI is underway.  
Cleanup/Exit Strategy- Anticipate LUCs based on industrial use until potential land use changes require further remedial actions. Because hazardous substances pollutants or contaminants will remain at the site at concentrations exceeding levels that allow for UU/UE five-year remedy reviews will continue until UU/UE is achieved.

## 06225.1045\_FTIR-003-R-01\_GALCIT AND ORDCIT PROJECTS

**Env Site ID:** FTIR-003-R-01

**Cleanup Site:** GALCIT AND ORDCIT PROJECTS

**Alias: #**

**Regulatory Driver:** CERCLA

**RIP Date:** 2/28/2027

**RC Date:** 2/28/2027

**RC Reason:** Not assigned

**SC Date:** 9/30/2056

**Program:** ENV Restoration, Army

**Subprogram:** MR

**NPL Status:** No

**Hazardous Ranking Score:** 0

**RRSE:** N/A

**MRSPP:** 3

Phase	Start	End
PA:	6/10/2002	5/1/2003
SI:	6/30/2006	8/31/2009
RI/FS:	10/31/2009	1/31/2025
RD:	2/1/2025	5/31/2026
IRA:	11/15/2011	9/30/2020
RA(C):	6/1/2026	2/28/2027
RA(O):	--	--
LTM:	3/1/2027	9/30/2056

**Site Narrative:** The Graduate Aeronautical Laboratory California Institute of Technology and Ordnance California Institute of Technology Projects Area is depicted on a May 1945 map of Camp Irwin and is estimated to be 17371 acres in size. The site was used during the 1940s and 1950s and much of the area remains undeveloped. This site is located in the western half of Fort Irwin and is a portion of the property known as the Goldstone Deep Space Complex that has been leased to National Aeronautics and Space Administration (NASA) since 1958; it includes Goldstone Lake. The small portion outside of NASA's lease is within the operational area. Buildings a large antenna and an airstrip have been constructed on the property. This site consists of the Goldstone Lake Rocket Testing Range and the Goldstone Lake Mortar/Small Arms Range. Smaller areas next to the dry lake underwent some remediation in the Environmental Restoration Army program as sites FTIR-38 Goldstone Lake Mortar/Small Arms Range FTIR-39 Goldstone Lake Rocket Testing Range and FTIR-40 Mojave Anti-aircraft Range HQ. These sites were listed as RC in September 2006 under the IRP. Goldstone Lake Rocket Testing Range is located at the southern end of Goldstone Lake. According to historical reports Goldstone Lake Rocket Testing Range was used as a rocket testing area between 1941 and the end of World War II. Among the variety of rockets tested along Goldstone Lake were anti-submarine rockets 4.5-inch barrage rockets high-velocity aircraft rockets spin-stabilized rockets and British rockets. It was not unusual for approximately 100 rockets to be launched on a daily basis. The site contains three rocket engine test stands and observation facilities. Each rocket test stand has an area of about 1000 square feet. Generally, the rockets were propelled from three firing points by a smokeless double-base powder called ballistite which was composed of nitroglycerine and nitrocellulose. In addition to the stationary tests, rockets were fired over the lakebed from aircraft positioned on the ground and in the air. Preloaded rockets were transported to Goldstone Lake no manufacturing took place on site. Explosives were not allowed on the range during the rocket testing years; instead, the rocket heads were filled with plaster. The Goldstone Lake Mortar/Small Arms Range fan begins east of Goldstone Lake and extends across the lake to the west crossing Goldstone Lake Rocket Testing Range. According to an interview with the installation range

officer the site was used originally as a rifle and machine gun range between 1945 and the end of 1958. During an IRP site visit to the Goldstone Lake Mortar/Small Arms Range many 0.50-caliber and 20mm slugs and casings and several mortar rounds were reportedly collected at this sub-site. One MEC item (an incendiary rocket warhead) was found at the site during the visual survey. 879.5 acres was removed from this site and returned to operational use for an unmanned aerial vehicle (UAV) runway and UAV hangar facility. Surface clearance was conducted by US Army Corps of Engineers Huntsville. During construction of the UAV hangar subsurface munitions debris was encountered and removed by Fort Irwin Explosive Ordnance Disposal. The start date is based on the fact that the range did not appear in aerial photographs taken in 1947. Based on the 2009 SI further investigations for MEC and MC are planned at the site. The RI is underway. Cleanup/Exit Strategy- Anticipate LUCs based on industrial use until potential land use changes require further remedial actions. Because hazardous substances pollutants or contaminants will remain at the site at concentrations exceeding levels that allow for UU/UE five-year remedy reviews will continue until UU/UE is achieved.

## 06225.1047\_FTIR-013-R-01\_COMBAT RANGE 1

**Env Site ID:** FTIR-013-R-01

**Cleanup Site:** COMBAT RANGE 1

**Alias:** #

**Regulatory Driver:** CERCLA

**RIP Date:** 5/31/2026

**RC Date:** 5/31/2026

**RC Reason:** Not assigned

**SC Date:** 9/30/2057

**Program:** ENV Restoration, Army

**Subprogram:** MR

**NPL Status:** No

**Hazardous Ranking Score:** 0

**RRSE:** N/A

**MRSPP:** 5

Phase	Start	End
PA:	6/10/2002	5/1/2003
SI:	6/30/2006	8/31/2009
RI/FS:	10/31/2009	8/24/2024
RD:	8/25/2024	9/30/2025
IRA:	11/15/2011	9/30/2020
RA(C):	10/1/2025	5/31/2026
RA(O):	--	--
LTM:	6/1/2026	9/30/2057

**Site Narrative:** The Combat Range 1 munitions response site (MRS) encompasses approximately 779 acres in mountainous terrain and is located about four kilometers south of the cantonment area. With the exception of any portion of the site that overlaps an ammo supply point area the land is undeveloped. Historical information indicates Combat Range 1 was used from 1945 through 1969. The beginning date was estimated based on the first time troops were stationed at Fort Irwin in 1942 and the end date was estimated as 1944 when Fort Irwin was deactivated. Due to the overlap of several ranges various munitions use is reported for this MRS and may have included 90mm and 76mm tanks; .30-caliber, 7.62mm, .45-caliber, and .50-caliber small arms; 4.2-inch, 81mm, and 60mm mortars; and 106mm recoilless rifles. There have been no known response actions at this site. The 2009 SI recommended further investigations for MEC and MC at this site. MEC items (tear gas riot grenades artillery simulators and unexpended small arms rounds) and munitions debris (smoke grenades and fuses) were observed during the visual survey. The RI was completed November 2016. Anticipate proposed plan (PP) and DD completion in 2023. Cleanup/Exit Strategy- LUCs are anticipated until potential land use changes require further remedial actions. Because hazardous substances pollutants or contaminants will remain at the site at concentrations exceeding levels that allow for UU/UE five-year remedy reviews will continue until UU/UE is achieved.

## 06225.1049\_FTIR-007-R-01\_PISTOL RANGE

**Env Site ID:** FTIR-007-R-01

**Cleanup Site:** PISTOL RANGE

**Alias:** #

**Regulatory Driver:** CERCLA

**RIP Date:** 5/31/2027

**RC Date:** 5/31/2027

**RC Reason:** Not assigned

**SC Date:** 9/30/2056

**Program:** ENV Restoration, Army

**Subprogram:** MR

**NPL Status:** No

**Hazardous Ranking Score:** 0

**RRSE:** N/A

**MRSPP:** 3

Phase	Start	End
PA:	6/10/2002	5/1/2003
SI:	6/30/2006	8/31/2009
RI/FS:	10/31/2009	5/30/2024
RD:	8/25/2025	9/30/2026
IRA:	11/15/2011	9/30/2020
RA(C):	10/1/2026	5/31/2027
RA(O):	--	--
LTM:	6/1/2027	9/30/2056

**Site Narrative:** Located within the industrial portion of the cantonment the Pistol Range was used for small arms training between the 1950s and 1983. The site consisted of approximately 20 firing points located 10, 15, and 25 meters from the target. Training at this range included the use of .22, .38, and .45 caliber munitions. Due to the proximity to a 40mm range, 40mm projectiles might also be found at the site. The range is located on the northeastern side of the present-day cantonment area. Buildings have been constructed over parts of the former range. The size of this site has been estimated at 458 acres. There are no known response actions at this site. The 2009 SI recommended further investigations for MEC and MC at this site. A MEC item (90mm booster) was observed during the visual survey. A time-critical removal action occurred on 50 acres from August 2012 to September 2013 and closure was approved by the Department of Toxic Substances Control. The RI was completed November 2016. Anticipate PP and DD completion in 2023. Cleanup/Exit Strategy- LUCs are anticipated until potential land use changes require further remedial actions. Because hazardous substances pollutants or contaminants will remain at the site at concentrations exceeding levels that allow for UU/UE five-year remedy reviews will continue until UU/UE is achieved.

**06225.1050\_FTIR-008-R-01\_HAND GRENADE RANGE**

**Env Site ID:** FTIR-008-R-01

**Cleanup Site:** HAND GRENADE RANGE

**Alias:** #

**Regulatory Driver:** CERCLA

**RIP Date:** 5/31/2025

**RC Date:** 5/31/2025

**RC Reason:** Not assigned

**SC Date:** 3/31/2054

**Program:** ENV Restoration, Army

**Subprogram:** MR

**NPL Status:** No

**Hazardous Ranking Score:** 0

**RRSE:** N/A

**MRSPP:** 4

Phase	Start	End
PA:	6/10/2002	5/1/2003
SI:	6/30/2006	8/31/2009
RI/FS:	10/31/2009	5/31/2025
RD:	--	--
IRA:	8/15/2012	9/15/2013
RA(C):	--	--
RA(O):	--	--
LTM:	6/1/2025	3/31/2054

**Site Narrative:** This former range estimated to cover 25.4 acres is located in the northeastern portion of the present-day cantonment area and is now part of the cantonment area. Buildings have been constructed on and around the property and it is currently the location of the 2nd Squadron Headquarters. Although the former range is open to anyone on base buildings now cover most of the site. Construction at the site has been completed. Although hand grenades have been found in the area they were found before the buildings were constructed at the site. Any remaining hand grenades are most likely located below the surface. The only historical document located regarding the Hand Grenade Range was a map of the range. The range officer stated that the range was used from the 1950s or 1960s and was closed in 1984. The officer also noted that practice and live grenades were used at the former range and that one live grenade, and several practice grenades had been found at the site. There have been no known UXO responses at this site. The 2009 SI recommended further investigations for MEC and MC at this site. No MEC was observed during the visual survey and no sample results were recorded above screening criteria. Cleanup/Exit Strategy- LUCs are anticipated until potential land use changes require further remedial actions. Because hazardous substances pollutants or contaminants will remain at the site at concentrations exceeding levels that allow for UU/UE five-year remedy reviews will continue until UU/UE is achieved.

## 06225.1053\_FTIR-012-R-01\_CARBINE TRANSITION RANGE

**Env Site ID:** FTIR-012-R-01

**Cleanup Site:** CARBINE TRANSITION RANGE

**Alias:** #

**Regulatory Driver:** CERCLA

**RIP Date:** 5/31/2026

**RC Date:** 5/31/2026

**RC Reason:** Not assigned

**SC Date:** 5/31/2056

**Program:** ENV Restoration, Army

**Subprogram:** MR

**NPL Status:** No

**Hazardous Ranking Score:** 0

**RRSE:** N/A

**MRSPP:** 5

Phase	Start	End
PA:	6/10/2002	5/1/2003
SI:	6/30/2006	8/31/2009
RI/FS:	10/31/2009	12/30/2024
RD:	12/31/2024	9/30/2025
IRA:	11/15/2011	9/30/2020
RA(C):	10/1/2025	5/31/2026
RA(O):	--	--
LTM:	6/1/2026	5/31/2056

**Site Narrative:** This closed range estimated at 324.1 acres was depicted on a 1945 map titled Demobilization Study Vicinity and Range Map and is located about two kilometers south of the cantonment area. The range fan extends from the north to the south into the operational area. There have been no known response actions at this site and it is undeveloped. Historical information indicates the Carbine Transition Range was used from 1945 through 1984 for small arms training including 5.56mm, 7.62mm, and .30 caliber. No MEC was observed during the SI; however, a variety of munitions debris including small arms casings (expended blanks), artillery fragments (105mm and 155mm), 250-pound bomb fragments, a 20mm cartridge casing a slap flare, and other unidentifiable fragments were observed during the visual survey and indicates that the MRS was not used exclusively for small arms training. Because munitions debris (artillery and bomb fragments) is concentrated on the hilltop in the MRS the adjacent highland area is recommended for potential consideration under subsequent RI work. The expectation is that similar evidence of military munitions use may also exist on the adjacent hilltop. The 2009 SI recommended further investigations for MEC and MC at this site. The RI was completed in 2016 and recommended no further action for MC. Anticipate PP and DD completion in 2023. Cleanup/Exit Strategy- LUCs are anticipated until potential land use changes require further remedial actions. Because hazardous substances pollutants or contaminants will remain at the site at concentrations exceeding levels that allow for UU/UE five-year remedy reviews will continue until UU/UE is achieved.

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## 06225.1055\_FTIR-005-R-01\_CLOSE COMBAT COURSE

**Env Site ID:** FTIR-005-R-01

**Cleanup Site:** CLOSE COMBAT COURSE

**Alias:** #

**Regulatory Driver:** CERCLA

**RIP Date:** 2/28/2026

**RC Date:** 2/28/2026

**RC Reason:** Not assigned

**SC Date:** 9/30/2055

**Program:** ENV Restoration, Army

**Subprogram:** MR

**NPL Status:** No

**Hazardous Ranking Score:** 0

**RRSE:** N/A

**MRSPP:** 9

Phase	Start	End
PA:	6/10/2002	5/1/2003
SI:	6/30/2006	8/31/2009
RI/FS:	10/31/2009	1/31/2025
RD:	2/1/2025	6/30/2025
IRA:	11/15/2011	9/30/2020
RA(C):	7/1/2025	2/28/2026
RA(O):	--	--
LTM:	3/1/2026	9/30/2055

**Site Narrative:** The Close Combat Course is located on the western boundary of the Fort Irwin Cantonment Area overlaps the southern portion of the Combat Engineers Range OB/OD Area (FTIR-001-R-01 and extends south into the operational area). The property has been leased by NASA since December 1958 is estimated at 1412 acres in size and is undeveloped. This site is near a recreation area and Boy Scout camp used by Fort Irwin personnel. The nearest inhabited buildings are located on Fort Irwin's cantonment area approximately 4.5 miles from the former range. This closed range was depicted on a 1945 demobilization study vicinity and range map. The map was the only source of historical information regarding the range. In an interview the installation ammunition manager stated that remnants of pop-up targets and bunkers are located at the site. There is a possibility that both surface and subsurface ordnance and explosives hazards remain. It is assumed that practice hand grenades and .22, .30, and .45 caliber small arms ammunition were the items most likely used onsite. The beginning date was estimated based on the first time troops were stationed at Fort Irwin in 1942 and the end date was estimated as 1944 when Fort Irwin was deactivated. There are no known UXO responses at this site. The 2009 SI recommended further investigations for MEC and MC at this site. A MEC item (75mm high explosive shell) was observed during the visual survey. The RI/feasibility study (FS) is underway. Cleanup/Exit Strategy- Anticipate LUCs based on industrial use until potential land use changes require further remedial actions. Because hazardous substances pollutants or contaminants will remain at the site at concentrations exceeding levels that allow for UU/UE five-year remedy reviews will continue until UU/UE is achieved.

## 06225.1056\_FTIR-002-R-01\_BOMBING RANGE 1

**Env Site ID:** FTIR-002-R-01

**Cleanup Site:** BOMBING RANGE 1

**Alias:** #

**Regulatory Driver:** CERCLA

**RIP Date:** 2/28/2026

**RC Date:** 2/28/2026

**RC Reason:** Not assigned

**SC Date:** 9/30/2055

**Program:** ENV Restoration, Army

**Subprogram:** MR

**NPL Status:** No

**Hazardous Ranking Score:** 0

**RRSE:** N/A

**MRSPP:** 3

Phase	Start	End
PA:	6/10/2002	5/1/2003
SI:	6/30/2006	8/31/2009
RI/FS:	3/15/2015	1/31/2025
RD:	2/1/2025	6/30/2025
IRA:	3/15/2015	9/30/2020
RA(C):	7/1/2025	2/28/2026
RA(O):	--	--
LTM:	3/1/2026	9/30/2055

**Site Narrative:** This closed range located within the cantonment area and consisting of approximately 338 acres was depicted on a 1945 map titled Demobilization Study Vicinity and Range Map. The 1945 map indicates that 100-pound practice bombs were used and a 1948 map notes that this range was cleared by a bomb and shell disposal team (the only known UXO response at this site). However, in 2015 excavation in the area uncovered 1940s to 1960s-era UXO items including a bazooka training round, an 81mm live white phosphorous round, and a live 90mm mortar. The site's beginning date was estimated based on the first time troops were stationed at Fort Irwin in 1942 and the end date was estimated as 1944 when Fort Irwin was deactivated; however, the range may also have been used in the 1950s and 1960s when Fort Irwin was reactivated to support troop training for the Korean and Vietnam Wars. The range is located within the operational area- most of FTIR-01 (Active/Inactive Landfill) and the future landfill expansion area part of FTIR-04 (Abandoned Sanitary Landfill 4) and CCFTIR-02 (Wastewater Treatment Facility) lie within the boundary of Bombing Range 1. The 2009 Military Munitions Response Program SI recommended no further action at this site because it was erroneously annotated in the document as Military Munitions Response Program ineligible due to its partial location in what the contractor misinterpreted as active training area. Despite this the maps in the 2009 SI correctly show the site being located solely in a nonoperational area and stated site should be administratively closed. During construction activities from another project in 2015 active UXO was found at the site. A geologic study recommended RI under the MMRP. The RI/FS was started in 2015. Cleanup/Exit Strategy- Anticipate LUCs based on industrial use until potential land use changes that may require further remedial actions. Because hazardous substances pollutants or contaminants will remain at the site at concentrations exceeding levels that allow for UU/UE five-year remedy reviews will continue until UU/UE is achieved.

## 06225.1059\_FTIR-016-R-01\_Range D

**Env Site ID:** FTIR-016-R-01

**Cleanup Site:** Range D

**Alias:** #

**Regulatory Driver:** CERCLA

**RIP Date:** 2/28/2026

**RC Date:** 2/28/2026

**RC Reason:** Not assigned

**SC Date:** 9/30/2055

**Program:** ENV Restoration, Army

**Subprogram:** MR

**NPL Status:** No

**Hazardous Ranking Score:** 0

**RRSE:** N/A

**MRSPP:** 5

Phase	Start	End
PA:	6/30/2002	5/31/2003
SI:	6/30/2006	8/31/2009
RI/FS:	10/31/2009	1/31/2025
RD:	2/1/2025	6/30/2025
IRA:	11/15/2011	9/30/2020
RA(C):	7/1/2025	2/28/2026
RA(O):	--	--
LTM:	3/1/2026	9/30/2055

**Site Narrative:** Range D consists of 15.5 acres located approximately 10 kilometers northwest of the cantonment area. The range is within the NASA antenna station echo but is otherwise undeveloped. The Historical Records Review revealed that the northwest corner of the Range D surface danger zone shown on the 1945 range map extends approximately 250 meters into the other-than-operational boundary of Fort Irwin. Training at the site is estimated to have occurred between 1942 and 1950 (range not shown on 1950 map). Observations made during the SI field survey indicated training occurred at the site and findings of munitions debris (105mm round scrap from an armor piercing round and an expended 90mm projectile tracer element) at the site confirmed range usage. One soil sample exceeded the screening criteria for cadmium. The site is assumed to have been used for 40mm anti-mechanized training. MEC associated with the range is mainly 40mm projectiles and munitions debris observed at the site included a 105-mm round scrap from an armor piercing round and an expended 90mm projectile tracer element. The 2009 SI recommended further investigation at the site for both MEC and MC. The RI/FS is underway. Cleanup/Exit Strategy- Anticipate LUCs based on industrial use until potential land use changes require further remedial actions. Because hazardous substances pollutants or contaminants will remain at the site at concentrations exceeding levels that allow for UU/UE five-year remedy reviews will continue until UU/UE is achieved.



## SITE SUMMARY

## SITE CLOSEOUT SUMMARY

CRL ID	Site Name	Site Closeout Date
06225.1001	FTIR-01_INACTIVE/ ACTIVE LANDFILL	2/28/2007
06225.1003	FTIR-03_ABANDONED SURFACE DISPOSAL AREA	3/31/1998
06225.1005	FTIR-05_SUSPECTED ABANDONED LANDFILL	1/31/1992
06225.1007	FTIR-07_LUCKY FUSE IMPACT DISPOSAL AREA	9/30/2005
06225.1008	FTIR-08_AVAWATZ VALLEY DISPOSAL SITE	4/30/1999
06225.1009	FTIR-09_DDT/LEAD-BASED PAINT DISPOSAL	1/31/1993
06225.1010	FTIR-10_PESTICIDE MIXING AREA	10/31/1996
06225.1011	FTIR-11_DRAINAGE PIT(BUILDING 830)	10/31/2010
06225.1012	FTIR-12_WASTE ELECTROLYTE DISPOSAL PITS	9/30/1998
06225.1013	FTIR-13_HW STORAGE FACILITY (BUILDING 70	1/31/1993
06225.1014	FTIR-14_HW TEMPORARY STORAGE FACILITY (B	1/31/1993
06225.1015	FTIR-15_HW TEMP STORAGE FACILITY (BLDG 6	6/30/1997
06225.1016	FTIR-16_PCB TRANSFORMER STORAGE AREA	6/30/1998
06225.1017	FTIR-17_SEWAGE TREATMENT PLANT	1/31/1993
06225.1018	FTIR-18_ABANDONED SEWAGE OXIDATION PONDS	9/30/1998
06225.1019	FTIR-19_PATHOLOGICAL WASTE INCINERATOR	6/30/1998
06225.1020	FTIR-20_ABANDONED FIRE FIGHTER TRAINING	4/30/1997
06225.1021	FTIR-22_TRINITY RANGE	6/30/1998
06225.1022	FTIR-23_LUCKY FUSE IMPACT AREA OD SITE	1/31/1992
06225.1023	FTIR-24_CAS 6 OD SITE (NK345305)	1/31/1992
06225.1024	FTIR-25B_ABANDONED OD SITE(LEACH LAKE RA	1/31/1993
06225.1025	FTIR-25C_ABANDONED OD SITE(GARY OWEN IMP	1/31/1993
06225.1026	FTIR-25D_ABANDONED OD SITE (LANGFORD IMP	1/31/1993
06225.1027	FTIR-25E_ABANDONED OD SITE(AVAWATZ DRY L	6/30/1998
06225.1028	FTIR-25F_ABANDONED OD SITE(NELSON IMPACT	1/31/1993
06225.1029	FTIR-26_GASOLINE UST(BUILDING 909)	5/31/1993
06225.1030	FTIR-27_BUNKER FUEL UST (NORTHWEST OF A	2/28/2006
06225.1031	FTIR-28_WASTE OIL UST (SOUTH LOOP, LANGF	8/31/2001
06225.1032	FTIR-29_GASOLINE UST (BUILDING 384)	12/31/1995
06225.1033	FTIR-30_WASHRACK HOLDING POND, 2/11TH MO	1/31/1993
06225.1034	FTIR-31_STORAGE TANKS, WASTE OIL	1/31/1993
06225.1035	FTIR-32_GOAT MOUNTAIN LANDFILLS	6/30/1998
06225.1036	FTIR-33_FIELD SUPPORT SITE	6/30/1998
06225.1037	FTIR-34_GOLDSTONE FORMER ECHO STATION LA	9/30/1998
06225.1038	FTIR-35_MOTORPOOL LUBRICATION PITS (BLDG	6/30/1998
06225.1039	FTIR-36_MATES COMPOUND DISPOSAL SITE	6/30/1998
06225.1040	FTIR-38_GOLDSTONE LAKE MORTAR/SMALL ARMS	9/30/2006
06225.1041	FTIR-39_GOLDSTONE LAKE ROCKET TESTING RA	6/30/1998
06225.1042	FTIR-40_MOJAVE ANTI-AIRCRAFT RANGE HQ	9/30/2006
06225.1043	FTIR-41_COMBAT ENGINEERS RANGE OB/OD SIT	6/30/1998
06225.1058	Irwin_PBC_PBC site	9/30/2005
06225.1060	CCDW-05_Thurnderdome FSS DW-5	10/15/2019

CRL ID	Site Name	Site Closeout Date
06225.1063	CCFTIR-044_Transportation Motor Pool	9/30/2019
06225.1046	FTIR-004-R-01_SMALL ARMS RANGE	8/31/2009
06225.1048	FTIR-006-R-01_MOJAVE ANTI-AIRCRAFT RANGE	3/31/2008
06225.1051	FTIR-009-R-01_MINIATURE ANTI-AIRCRAFT RA	8/31/2009
06225.1052	FTIR-010-R-01_MINIATURE ANTI-AIRCRAFT RA	8/31/2009
06225.1054	FTIR-011-R-01_GOLDSTONE SUB CALIBER RANG	3/31/2009
06225.1057	FTIR-015-R-01_COMBAT RANGE 2	8/31/2009
06225.1062	PBA@MR Irwin_PBA@MR Irwin	10/15/2012
06225.1064	CCDW-01_Drink Water	9/30/2023
06225.1066	CCHS-02_Hoffman site Alpha Pass	6/12/2019
06225.1067	CCFTIR-01_INACTIVE/ ACTIVE LANDFILL	5/3/2017
06225.1068	CC-HWMUs_Hazardous Waste Management Unit	10/15/2017
06225.1069	CCFTIR002_Waste Water Treatment Facility	2/15/2012
06225.1071	CCFTIR-04_BLDG. 680 INTERIOR POL LINES	12/31/2017
06225.1072	CCFTIR-03_Bldg. 840 Collection Troughs	8/10/2017

## COMMUNITY INVOLVEMENT

<b>Community Involvement Plan (Date Last Reviewed):</b>	9/15/2020
<b>Technical Review Committee Establishment Date:</b>	N/A
<b>Restoration Advisory Board (RAB) Establishment Date:</b>	N/A
<b>RAB Adjournment Date:</b>	N/A
<b>RAB Adjournment Reason:</b>	N/A
<b>Reasons for Not Establishing RAB:</b>	No sufficient, sustained community interest in a RAB has been expressed by the community
<b>RAB Date of Solicitation from Community:</b>	1/7/2022
<b>RAB Results of Solicitation:</b>	The installation has determined that there is currently no community interest in forming a RAB.
<b>Current Technical Assistance for Public Participation (TAPP):</b>	N/A
<b>TAPP Title:</b>	N/A
<b>Potential TAPP:</b>	N/A
<b>Administrative Record Location:</b>	NTC Fort Irwin Department of Public Works Admin Record/Repository Building
<b>Information Repository Location:</b>	NTC Fort Irwin Department of Public Works Admin Record/Repository Building

**FIVE-YEAR / PERIODIC REVIEW SUMMARY**

Status	Review Type	Start Date	End Date	Plans Narrative	Actions Narrative	Results Narrative
Planned	FYR	12/11/2024	12/11/2025	N/A	N/A	N/A
Completed	FYR	12/11/2019	12/11/2020	Landfill inspections and repairs will continue pursuant to the 1997 Remedial Action Plan (DD) for FTIR-02 and FTIR-04	1. Repair storm damage and animal burrows at FTIR-04.	The remedy at FTIR-04 currently protects human health and the environment because the partial soil cover prevents direct contact with the landfill contents and exposure to potential ecological receptors and minimizes infiltration.