# Camp Zama

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:** Camp Zama

**Installation City:** ZAMA

**Installation County:** Not assigned

**Installation State:** Not assigned

# ACRONYMS

| Acronym | Definition |
|---|---|
| AAFES | Army and Air Force Exchange Service |
| ARAR | Applicable or Relevant and Appropriate Requirement |
| CC | Compliance-related Cleanup |
| CERCLA | Comprehensive Environmental Response, Compensation and Liability Act of 1980 |
| CRL | Cleanup Restoration & Liabilities |
| DOD | Department of Defense |
| FS | Feasibility Study |
| FY | Fiscal Year |
| HIA | Health Impact Assessment |
| IAP | Installation Action Plan |
| IC | Institutional Control |
| IR | Installation Restoration |
| IRA | Interim Remedial Action |
| LTM | Long-Term Management |
| MR | Munitions Response |
| MRSPP | Munitions Response Site Prioritization Protocol |
| NPL | National Priorities List |
| PA | Preliminary Assessment |
| RA(C) | Remedial Action (Construction) |
| RA(O) | Remedial Action (Operations) |
| RC | Response Complete |
| RCRA | Resource Conservation and Recovery Act |
| RD | Remedial Design |
| RI | Remedial Investigation |
| RIP | Remedy-in-Place |
| RRSE | Relative Risk Site Evaluation |
| SC | Site Closeout |
| SI | Site Inspection |
| TPH | total petroleum hydrocarbons |
| µg/dL | micrograms per deciliter |
| USACOE | U.S. Army Corps of Engineers |
| USAG | U.S. Army Garrison |
| USAPHC-PAC | U.S. Army Public Health Command-Pacific |
| USEPA | U.S. Environmental Protection Agency |
| USFJ | U.S. Forces, Japan |

| Acronym | Definition |
| --- | --- |
| UST | Underground Storage Tank |

**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:** 0/0

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

**Number of Open Sites with Response Complete/Total Open CC Sites:** 2/2

# SITE-LEVEL INFORMATION

## JA210.1002_CC-CZ-002_CZ-Old Landfill

**Env Site ID:** CC-CZ-002

**Cleanup Site:** CZ-Old Landfill

**Alias:** #

**Regulatory Driver:** DODI

**RIP Date:** 2/28/2014

**RC Date:** 2/28/2014

**RC Reason:** Study Completed, No Cleanup Required

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

**Program:** Compliance-related Cleanup

**Subprogram:** CC

**NPL Status:** No

**Hazardous Ranking Score:** 0

**RRSE:** N/A

**MRSPP:** N/A

| Phase | Start | End |
|---|---|---|
| **PA:** | 11/30/1994 | 5/31/1995 |
| **SI:** | 11/30/2009 | 11/30/2013 |
| **RI/FS:** | 12/31/2013 | 2/28/2014 |
| **RD:** | - - | - - |
| **IRA:** | - - | - - |
| **RA(C):** | - - | - - |
| **RA(O):** | - - | - - |
| **LTM:** | 3/31/2014 | 9/15/2054 |

**Site Narrative:** The area of concern is the Camp Zama Old Landfill which is about 33,500 square meters and is located on the north end of Camp Zama. Currently, there are several facilities which include an active golf driving range, a stormwater catchment basin, a skeet range, an ash pit, and a leachate treatment system. In 1969, this site began to be used as a sanitary landfill. Waste was reportedly deposited in 20-foot by 150-foot trenches that were 20 feet deep, or into 20-foot diameter holes of 30 feet deep. In March 2010, soil borings were advanced to investigate the areas surrounding previously identified geophysical anomalies, and sampling and analysis of various environmental media (soil, soil gas, groundwater, surface water, and sediment) took place to characterize the nature and extent of environmental contamination. Evaluation of the data obtained from these efforts suggested that the contaminants of potential concern in the soil and soil gas were primarily metals (arsenic, chromium, lead, and antimony), select volatile organic compounds, and select semi-volatile organic compounds. Subsequently, periodic environmental monitoring activities were initiated in Fiscal Year 2013 (FY13). In January 2014, a health impact assessment (HIA) was completed for this site to determine the presence/non-presence of a substantial impact to human health and safety in accordance with the Status of Forces Agreement between the United States and Japan, Department of Defense (DOD) Instruction 4715.08 (Remediation of Environmental Contamination Outside the United States), U.S. Forces, Japan (USFJ) Instruction 32-7002 (Environmental Executive Agent Remediation Policy), and other applicable requirements. The assessment revealed that potential cancer risks and non-cancer hazards were acceptable for the receptors evaluated with respect to the current site conditions. [Risks from potential exposures to surface and subsurface soil were within or below the U.S. Environmental Protection Agency (USEPA) range for managing cancer risks (individual lifetime cancer risk of 1E-6 to 1E-4). Similarly, all hazard index estimates were below USEPA's threshold of 1 for non-cancer effects.] In addition, the potential for adverse effects on the unborn from exposure to lead by female workers or recreational receptors was less than the threshold of 5 micrograms per deciliter (µg/dL). However, considering the potential risks/hazards associated with vapor intrusion, unknown subsurface conditions,

and exclusion of construction workers from evaluation, the assessment concluded that environmental concerns still remained at this site requiring remedial actions. On 7 February 2014, subject matter experts from the U.S. Army Corps of Engineers (USACOE) - Alaska District, U.S. Army Environmental Command, U.S. Army Garrison (USAG) Japan, and U.S. Army Public Health Command - Pacific (USAPHC-PAC) discussed the assessment results and reached a consensus that no further remedies were warranted for this site except for institutional controls (ICs) to prevent construction, demolition, and/or land alternation without proper control measures, and periodic sampling and analysis of groundwater and landfill gas to monitor offsite migration of pollutants. The above decisions were documented and approved by the in-theater Component Commander [Commander of U.S. Army Japan/I Corps (Forward)] on 18 July 2015 after consultation with the local DOD Medical Authority (Commander of USAPHC-PAC) and the DOD Lead Environmental Component (Commander of USFJ). As such, the installation has implemented the ICs and semiannual groundwater and landfill gas monitoring program. The first five-year review was completed in December 2018 (the results were documented and approved by the Commander of USAG Japan on 19 March 2019) and it validated effectiveness of the aforementioned remedies. Moreover, the second five-year review was conducted in October through December 2023 to ensure that those remedies are still and will continue to be protective of human health and the environment. Although elevated concentrations (and some fluctuations in concentrations) of some contaminants (biological oxygen demand, chemical oxygen demand, total organic carbon, dioxins, methane, and hydrogen sulfide) in the groundwater and landfill gas were observed during the periodic monitoring activities, this five-year review concluded that the selected/implemented remedies are functioning as originally intended; the exposure assumptions, toxicity data, risk levels, and action objectives used at the time of remedy selection are still valid; and no other information has come to light that could call into question the protectiveness of the remedies. (The decision document that addresses these results was approved by the Commander of USAG Japan on 7 February 2024.) Therefore, the current plan is to continue the existing ICs and semiannual sampling and analysis of groundwater and landfill gas in FY24 and beyond.

## JA210.1012_CC-CZ-606_LRC Gas Station

**Env Site ID:** CC-CZ-606

**Cleanup Site:** LRC Gas Station

**Alias:** #

**Regulatory Driver:** DODI

**RIP Date:** 2/28/2014

**RC Date:** 2/28/2014

**RC Reason:** Study Completed, No Cleanup Required

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

**Program:** Compliance-related Cleanup

**Subprogram:** CC

**NPL Status:** No

**Hazardous Ranking Score:** 0

**RRSE:** N/A

**MRSPP:** N/A

| Phase | Start | End |
|---|---|---|
| **PA:** | 7/31/2010 | 3/31/2011 |
| **SI:** | 3/31/2011 | 7/31/2012 |
| **RI/FS:** | 10/31/2012 | 2/28/2014 |
| **RD:** | - - | - - |
| **IRA:** | - - | - - |
| **RA(C):** | - - | - - |
| **RA(O):** | - - | - - |
| **LTM:** | 3/31/2014 | 9/15/2054 |

**Site Narrative:** The area of concern is the Logistics Readiness Center Gas Station (Facility No. 606) at Camp Zama. It occupies 583 square meters within the premises of the Camp Zama Motor Pool. A site investigation conducted in October 2011 revealed diesel-fuel contamination of subsurface soil with total petroleum hydrocarbon (TPH) concentrations up to 5,900 milligrams per kilograms (mg/kg) in the area immediately downgradient of the gas station and concluded that the observed contamination was most likely attributable to the diesel tank (Facility No. 606-3N) previously located at this site. The contamination plume extends westward following the terrain contours and there is a possibility of the observed contamination to migrate crossing the base boundary through the area aquifer. As such, four groundwater monitoring wells were installed both on the upgradient and downgradient sides of the gas station in February and March 2013, and groundwater samples were collected on a quarterly basis for a TPH analysis during the period between March and December 2013 so as to ensure that the observed contamination was not migrating offsite. In 2014, based on the non-detect results of the first year-round TPH analysis, the U.S. Army Environmental Command advised the U.S. Army Garrison (USAG) Japan to reduce the monitoring frequency from four times a year to twice a year, and to implement institutional controls (ICs) to prevent construction, demolition, and/or land alternation without proper control measures. Moreover, during the 2014 Army Environmental Database - Compliance-related Cleanup Spring data call, this site was reported as “Response Complete” while the Long-Term Management phase would continue to be open for an indefinite period. Subsequently, the semiannual groundwater monitoring contract which began in Fiscal Year 2014 (FY14) through the U.S. Army Corps of Engineers (USACOE) - Alaska District expired at the end of FY17 and underwent renewal by USACOE-Japan District in FY18. The first five-year review of the remedies implemented at this site was completed in December 2018, and it concluded in accordance with applicable or relevant and appropriate requirements (ARARs) that the USAG Japan needed to continue the ICs as well as the groundwater monitoring program, but at a reduced frequency (from twice a year to once a year). The conclusions reached from the five-year review were documented and approved by the Commander of USAG Japan on 19 March 2019.

Accordingly, annual groundwater monitoring contract was awarded in June 2018 and had remained in effect until FY22. In FY23, the groundwater monitoring contract was renewed for the work required in FY23-28. Perusal of the data collected from the past five-year (FY18-22) monitoring activities revealed no evidence of TPH contamination in the area groundwater. TPH constituents had also not been detected during the former five-year (FY13-17) monitoring period. The Government of Japan's Guidelines for Surveys and Countermeasures Based on Soil Contamination Countermeasures Act dated August 2012 allow landowners of contaminated sites to reduce the frequency of groundwater monitoring from annual to biennial basis if groundwater contamination has not been observed during the past ten years of monitoring efforts. In light of the above analytical results and ARARs, further reduction of monitoring frequency (from annual to biennial) was warranted by the second five-year review completed in December 2023, and the FY23 contract for biennial monitoring (groundwater sampling occurred in FY23 and will occur in FY25, and 27 during the contract period of performance) was awarded by USACOE-Japan District. (The decision document that addresses the second five-year review results was approved by the Commander of USAG Japan on 7 February 2024.) Therefore, the current plan is to continue the existing ICs and biennial sampling and analysis of groundwater and landfill gas in FY24 and beyond. (Field sampling activities will not be performed in FY24.)

# SITE SUMMARY

## SITE CLOSEOUT SUMMARY

| CRL ID | Site Name | Site Closeout Date |
|---|---|---|
| JA210.1001 | CC-CZ-001_Fuel Spill Site (Bldg No. 1024 | 8/31/2008 |
| JA210.1011 | CC-CZ-380_AAFES Gas Station | 7/31/2012 |