
FACT SHEET / STATEMENT OF BASIS

Request for Corrective Action Complete Status for
One Area of Concern and Four Solid Waste Management Units

EPA ID Number NM7572124454

**CANNON AIR FORCE BASE
NEW MEXICO**

February 2016

FACT SHEET / STATEMENT OF BASIS

Proposals for Corrective Action Complete For Five Sites at Cannon Air Force Base

EPA ID No. NM7572124454

Under authority of the New Mexico Hazardous Waste Act (Section 74-4-1 et seq., New Mexico Statutes Annotated (NMSA) 1978, as amended, 1992) and the New Mexico Hazardous Waste Management Regulations (20.4.1 [New Mexico Administrative Code] NMAC), the New Mexico Environment Department (NMED) intends to approve, pending public input into this decision, Class 3 permit modification requests (PMRs) received from the United States Air Force/Cannon Air Force Base (CAFB or Permittee) for the Resource Conservation and Recovery Act (RCRA) Hazardous Waste Corrective Action-only Permit (Permit) pursuant to 20.4.1.900 NMAC (incorporating 40 CFR § 270.42(c)).

If approved, the proposed modifications would grant Corrective Action Complete (CAC) status for five sites; one Area of Concern (AOC A) and four Solid Waste Management Units (SWMUs 71, 91, 101 and 126) at the CAFB facility. Currently, Table 1 in Permit Attachment 1 of CAFB's RCRA Permit lists SWMUs and AOCs at the CAFB facility where corrective action is required to characterize and remediate past releases of hazardous wastes or hazardous waste constituents. If this modification is approved by NMED, SWMU 101 would be transferred from Table 1 in Permit Attachment 1 to Table 2 that lists SWMUs and AOCs with the status of Corrective Action Complete with Controls. AOC A and SWMUs 71, 91, and 126 would be transferred from Table 1 in Permit Attachment 1 to Table 3 of Attachment 1 that lists SWMUs and AOCs with the status of Corrective Action Complete without Controls. The five sites are listed in Attachment 1 Table 1 and Table 2 or 3.

SWMU 103 was also proposed for corrective action complete status. However, NMED has determined that it is not eligible for corrective action complete at this time and will remain on Table 1.

The Permittee is located at the following address: Cannon Air Force Base, 110 East Alison Avenue, Suite 1098, Cannon Air Force Base, New Mexico, 88103. The Permittee's primary contact for the action is: Colonel Douglas W. Gilpin, Commander, 27th Special Operations Mission Support Group at the address listed above.

A. Facility Description

CAFB is located in Curry County, New Mexico, approximately seven miles west of the City of Clovis and 15 miles north of the City of Portales. CAFB occupies approximately 4,320 acres in the Southern High Plains Physiographic Province. No streams exist on or near CAFB. Running Water Draw and Frio Draw, located approximately 10 and 20 miles north of CAFB, respectively, are the nearest streams. The majority of land surrounding CAFB is irrigated farmland and grazing land for beef and dairy cattle. CAFB dates to 1929, when Portair Field, a civilian

passenger terminal, was established. In 1942, the Army Air Corps took control of the airfield and it became known as Clovis Army Air Base. In 1957, the Base became a permanent installation and was renamed Cannon Air Force Base. In June 2006, it was announced that CAFB would transfer from the Air Combat Command to Air Force Special Operations Command.

B. History of Investigation

NMED issued Attachment 1 as part of the CAFB RCRA Permit in November 2003. The CAFB Permit requires corrective action to be conducted at the RCRA SWMUs and AOCs listed in Table 1 of Attachment 1 of the Permit. Sections H and I below briefly describe the locations, histories, evaluations, and the bases for the determinations made for the AOCs and SWMUs proposed for corrective action complete with and without controls. More detailed descriptions of the AOCs and SWMUs can be found in the permit modification requests submitted by the Permittee and the references listed at the end of this fact sheet which constitute the administrative record for this action.

C. Administrative Record

The Administrative Record for this proposed action consists of the CAFB Fact Sheet/Statement of Basis, the Public Notice, the November 2003 Permit that contains Tables 1, 2, and 3, the Class 3 Permit Modification Requests (PMRs) dated September 2013 and October 2014 with revised Permit Tables 1 through 3, and the referenced supporting documentation. The Administrative Record may be reviewed at the following location during the public comment period:

NMED – Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
(505) 476-6000
Monday - Friday from 8:00 a.m. to 5:00 p.m.

A copy of the Fact Sheet/Statement of Basis, the Public Notice, and the November 2003 Permit that contains Tables 1, 2, and 3 in Attachment 1 and the Class 3 Permit Modification Requests dated September 2013 and October 2014 and revised Permit Tables 1 through 3 are also available electronically on the NMED website at:

<https://www.env.nm.gov/HWB/cafbperm.html>

To obtain a copy of the Administrative Record or a portion thereof, in addition to further information please contact Ms. Pamela Allen at (505) 476-6064, or at the address given above. NMED will provide copies, or portions thereof, of the administrative record at a cost to the requestor.

D. Public Participation

Public meetings were arranged by the Permittee and held on November 4, 2013 (September 2013 proposals) and February 3, 2015 (October 2014 proposals) at the Clovis-Carver Public Library, 701 N. Main Street, Clovis NM 88101, in accordance with 20.4.1.901 NMAC as part of the 60-day public comment period on the PMRs required by the regulations at 40 CFR §270.42(c)(5). NMED did not receive any comments from the public during these comment periods on the PMRs.

NMED issued a public notice on **February 29, 2016**, to announce the beginning of a 60-day comment period that will end at **5:00 p.m. MDT, April 29, 2016**. Any person who wishes to comment on this action or request a public hearing should submit written or electronic mail (e-mail) comment(s) with the commenter's name and address to the physical or e-mail address below. Only comments and/or requests received on or before **5:00 p.m. MDT, April 29, 2016** will be considered.

Dave Cobrain, Program Manager
Hazardous Waste Bureau - New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6303
Or via e-mail: dave.cobrain@state.nm.us
Ref: Proposals for CAC for 5 Sites at CAFB

Written comments must be based on the administrative record. Documents in the administrative record need not be re-submitted if expressly referenced by the commenter. Requests for a public hearing shall provide: (1) a clear and concise factual statement of the nature and scope of the interest of the person requesting the hearing; (2) the name and address of all persons whom the requestor represents; (3) a statement of any objections to the proposed action, including specific references; and (4) a statement of the issues which such persons propose to raise for consideration at the hearing. Written comments and requests for Public Hearing must be filed with Mr. Dave Cobrain on or before **5:00 p.m. MDT, April 29, 2016**. NMED will provide a thirty (30) day notice of a public hearing, if scheduled.

E. Next Steps

NMED will notify the Permittee and each person on the facility mailing list of the final decision. The final decision will become effective 30 days after service of the decision unless a later date is specified or unless review is required under New Mexico Hazardous Waste Regulations, 20.4.1.901.A NMAC.

F. Contact Person for Additional Information

For additional information, contact the following individual:

Dave Cobrain, Program Manager
Hazardous Waste Bureau - New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6303
Telephone: (505) 476-6055
Fax: (505) 476-6030
e-mail: dave.cobrain@state.nm.us

G. Arrangements for Persons with Disabilities

Any person with a disability and requiring assistance or auxiliary aid to participate in this process should contact J.C. Borrego, NMED, Room S-4303, P.O. Box 5469, 1190 St. Francis Drive, Santa Fe, New Mexico, 87502-6110, TDD or TDY users please access Mr. Borrego's number via the New Mexico Relay Network at 1-800-659-8331.

H. Description of AOCs and SWMUs Proposed for Corrective Action Complete with Controls

1. SWMU 101, Wastewater Lagoons 1&2 (SI101)

Location

SWMU 101 is comprised of two former sewage lagoons which have historically been referred to as the northern lagoon (Lagoon 1) and southern lagoon (Lagoon 2) located in the east central portion of CAFB.

History/Current and Anticipated Future Land Use

The former sewage lagoons were constructed in 1966. The lagoons consisted of two unlined surface impoundments that received combined sanitary and industrial waste water from CAFB facilities. Construction details for the lagoons indicate the banks of the lagoons were concrete-lined with earthen bottoms and operated in series. Untreated sewage discharge to the lagoons stopped in 1988 when a new waste water treatment plant was put into operation at CAFB. However, CAFB continued to discharge treated waste water to facilitate gradual drying after their discontinued use as primary sewage ponds. Following closure, various studies were conducted to assess potential environmental impacts associated with the SWMU.

The current and anticipated land use of SWMU 101 is classified as industrial.

Evaluation of Relevant Information

From 1984 to 1985 a hydrogeologic study of the sewage lagoons was conducted. As part of the study, four monitoring wells (E, F, G and H) were installed, which included one up-gradient well and three down gradient wells. The wells were initially sampled on a quarterly basis and groundwater samples were analyzed for pH, temperature, and conductivity only.

In 1992 a RCRA Facility Investigation (RFI) was initiated at SWMU 101. The investigation included the collection of sludge, surface water, and groundwater samples at the SWMU. A total of 4 sludge samples from each lagoon, four groundwater samples from each of the site wells, and three surface water samples were collected during the investigation. Results of the analysis for the collected samples indicated metals concentrations in sludge were greater than background, and low levels of various pesticides and polychlorinated biphenyls (PCB) 1254 were detected. Results of the groundwater analyses indicated that only metals were present in the collected samples. The reported concentrations did not exceed Environmental Protection Agency (EPA) maximum contaminant levels (MCLs). The results of the surface water sample chemical analyses indicated that lead, copper, mercury, silver, and zinc were present at concentrations above EPA Ambient Water Quality Criteria for Surface Water. Continued annual groundwater monitoring was the only recommendation presented in the RFI.

In 1998, a supplemental sampling event by Ecology and Environment Inc. in support of the preliminary evaluation of the lagoons, was conducted. The event entailed the collection of three additional sludge samples which were tested for nitrogen, total solids, volatile solids, metals, and pathogens. The results of the analysis did not exceed RCRA limits for hazardous constituents. The calculated volume of sludge material was estimated at 165,000 cubic yards (cy). Estimations of waste volume were to be used to propose an appropriate method for excavation, and disposal of the sludge.

In response to previous characterization studies at the lagoons and in preparation for corrective action at the site, a Corrective Measures Study (CMS) was completed in 2000. The CMS included a human health risk assessment (HHRA) and an ecological risk assessment to determine the requirements for contaminant containment and source control. The HHRA concluded that there is no potential risk to receptors from groundwater at SWMU 101. Groundwater beneath SWMU 101 is not used by industrial workers, nor does it discharge naturally through seeps or springs in the area, which could potentially affect ecological receptors. Groundwater monitoring at SWMU 101 indicated metals were the only analytes detected, and the detected concentrations were below the respective MCLs. Fate and transport modeling was also performed as part of the CMS to support the risk assessment. Corrective action alternatives were evaluated by simulating contaminant migration through the vadose zone. The fate and transport of COCs that exceeded risk-based screening criteria were modeled based on the current, normal site conditions. The results of the 50-year simulations predicted that vertical contaminant migration would not reach groundwater.

Sludge removal from the north lagoon, in-place consolidation in the south lagoon, and closure using an engineered cover with a biotic barrier was proposed as the remedy.

In 2003, the voluntary corrective measure was implemented at SWMU 101. Sludge and the underlying contaminated soil from the north lagoon were excavated and consolidated into the south lagoon. The south lagoon area was then graded and compacted and a 20-acre engineered earthen cover system was emplaced with a biotic barrier of recycled, crushed concrete, and a 6-inch erosion/vegetation layer was installed over the south lagoon. Currently, a shallow earthen drainage swale surrounds the capped area, which is enclosed by a five-strand barbed-wire fence to control access.

Monitoring wells MW-E, MW-F, MW-G, and MW-H were initially installed and monitored for groundwater field parameters (pH, conductivity, and temperature) on a quarterly basis. The wells were sampled for selected hazardous constituents during the 1992 RFI and the analysis were continued as part of the long term groundwater monitoring program (LTM) for Cannon AFB. Currently, these wells are sampled biennially as required by NMED.

Historical sampling data for these four wells indicate that some metals and VOCs were detected at concentrations below their respective EPA MCL's and New Mexico Water Quality Control Commission (NMWQCC) standards. It should be noted that thallium was not identified in the monitoring wells associated with SWMU 101 prior to 2012. Nitrates were identified in MW-G at concentrations exceeding the EPA MCL and NMWQCC standard prior to the decommissioning of SWMU 101. However, nitrate levels have decreased to concentrations below the EPA MCL and NMWQCC screening standard in groundwater samples collected during the most recent sampling events.

Basis of Determination

Corrective action complete with controls is granted for SWMU 101. Based on the information provided, the risk assessment conducted for SWMU 101 demonstrates that the site qualifies for status as corrective action complete with controls only. NMED has also determined that appropriate engineering controls have been implemented. All implemented engineering controls for the southern lagoon waste storage area must be maintained as outlined below in Table 1A "Inspection and Maintenance Activities at SI101" which can also be found in Table 6-3 of the 2014 *Work Plan Addendum for Landfills and Institutional Control Inspection Sites*. In addition, yearly SWMU 101 landfill engineering control inspections must continue. The inspection findings must be provided in the biennial groundwater monitoring report.

**TABLE 1A
INSPECTION AND MAINTENANCE ACTIVITIES AT SI101**

Feature	Location	Inspection	Routine Maintenance
Cover surface, especially steeper slopes	Over entire cover	<ul style="list-style-type: none"> - Surface erosion, gully formation - Buildup of excessive silt and debris - Accumulation of weeds - Exposure of crushed concrete in eroded areas 	<ul style="list-style-type: none"> - Fill in gullies to restore grade - Clean out excess debris, silt and weeds - Restore all areas of cover to original contours
Drainage ditches	Perimeter of cover	<ul style="list-style-type: none"> - Erosion - Exposure/displacement of crushed concrete in eroded areas - Excess silt buildup - Tumbleweed accumulation 	<ul style="list-style-type: none"> - Replace soil - Remove excess silt, debris, and tumbleweeds - Replace crushed concrete as needed - Repair fence as needed
Perimeter fence and gates	Fence line	<ul style="list-style-type: none"> - Structural integrity - Tumbleweed and debris accumulation - Locks on gates 	<ul style="list-style-type: none"> - Remove tumbleweed and debris - Replace damaged or missing locks
Signage on perimeter fence	Various	<ul style="list-style-type: none"> - Inspect signage for damage - Note missing signage 	<ul style="list-style-type: none"> - Replace damaged or missing signage
Vegetation	Over entire cover	<ul style="list-style-type: none"> - Extent of vegetation cover - Type of vegetation - General condition 	<ul style="list-style-type: none"> - Reestablish vegetation as needed

The Permittee must continue to conduct biennial groundwater monitoring at SWMU101 in accordance with the *Facility-Wide Long Term Groundwater Monitoring Plan* dated January 2011 and the June 2014 *Work Plan Addendum for Landfills and Institutional Control Inspection Sites*, unless otherwise directed by NMED.

I. Description of AOCs and SWMUs Proposed for Corrective Action Complete Without Controls

1. SWMU 71, Recovered JP-4 Jet Fuel Tank No. 390 (TU071)

Location

SWMU 71/Tank 390 was formerly located within the petroleum, lubricant and oil (POL) yard in the north central portion of CAFB at the southeastern portion of the yard.

History/Current and Anticipated Future Land Use

SWMU 71 was a 2,000-gallon steel underground storage tank (UST) which was put into operation in 1976. The tank was used to store jet propellant grade 4 (JP-4) fuel that was discharged through pressure relief valves in the piping attached to the bulk fuel storage tanks. The fuel was periodically removed from the tank and returned to the bulk JP-4 tanks.

SWMU 71 was decommissioned on January 14, 1991 under the authority of the New Mexico Environmental Improvement Division (NMEID). During the removal, the tank and piping were observed to be in very good condition with no visual evidence of leaks. Two soil samples were also collected; one at a depth of 2 feet below ground surface (bgs) and one at the bottom of the tank excavation at a depth of approximately 10 feet (bgs). The collected soil samples were analyzed for volatile organic compounds (VOCs). All results were below laboratory detection limits.

Current and future land use at SWMU 71 is expected to remain industrial.

Evaluation of Relevant Information

SWMU 71 was removed per NMED guidance and State of New Mexico regulation on January 14, 1991. Based on the NMED (formerly NMEID) PST tank closure report information, the tank was in good condition with no evidence of leakage. VOCs were not detected in the collected soil samples submitted for laboratory analysis.

Basis of Determination

SWMU 71 is proposed for Corrective Action Complete without Controls. The SWMU was characterized in accordance with applicable state regulations at the time the tank was removed and concurrence by the NMED Underground Storage Tank Bureau at the time of tank decommissioning conducted in January 1991 has been provided. Additionally, confirmation soil sample analysis did not detect evidence of a release from the tank.

2. SWMU 91, Recovered Fuel Tank No. 5114

Location

SWMU 91 is a former aboveground storage tank (AST) located in the southeast portion of CAFB. SWMU 91 covers a small area around the footprint of a former 5,000-gallon AST located immediately north of Building 2332 that was associated with adjacent Test Stand No. 5114. The AST was used to store new JP-4 fuel.

History/Current and Anticipated Future Land Use

The AST was installed in 1967 and was used until 1988 when the tank was removed following the demolition of Test Stand No. 5114. Following removal of the tank, only the support saddles and the associated concrete diked containment area remained in place. These features were subsequently removed. The site surface currently consists of dirt and gravel.

SWMU 91 is a portion of the Engine Test Area (SD-11) which has been the subject of numerous investigations dating back to an Installation Restoration Program Phase II report in 1986; two Remedial Investigations in 1990 and 1992; a Phase III RCRA Facilities Investigation (RFI) in 1997; a Corrective Measures Study in 1999; additional sampling activities by the US Geological Survey (USGS) in 2000 and 2001; and a Corrective Measures Implementation in 2007. However, based on the lack of site specific sampling information, additional sampling was requested by NMED.

In 2009, an RFI Addendum was performed. Three soil borings were completed to 15 feet bgs at the approximate location of the former AST. One boring was advanced immediately north and two borings were located approximately 15 feet to the east and west of the former tank. The samples were tested for total petroleum hydrocarbons (TPH). TPH was not detected in any of the samples submitted for analysis.

There are no records of spills or releases associated with the AST at SWMU 91.

CAFB will remain active for the foreseeable future. Currently, land use at SWMU 91 is classified as industrial. It is anticipated that the land use classification will remain industrial at SWMU 91.

Evaluation of Relevant Information – SWMU 91

In 1987, a preliminary review/visual site inspection (PR/VSI) and RCRA Facility Assessment (RFA) were conducted to identify and evaluate SWMUs and AOCs at CAFB and to assess the potential for releases to the environment from those SWMUs and AOCs. The PR/VSI and RFA mistakenly identified SWMU 91 as a tank in which recovered JP-4 fuel was stored after being processed by Oil/Water Separator (OWS) No. 5114. However, the AST was actually a storage tank for JP-4 fuel product, which was used for experiments at Test Stand 5114. The

PR/VSI and RFA stated that there were no reported releases from this unit. No sampling was completed or recommended for SWMU 91 during the RFA.

The AST at SWMU 91 was removed in 1988 when Test Stand No. 5114 was demolished.

In 2007, a RFI was conducted that included a visual inspection of SWMU 91. No visible signs of staining or cracking were evident in the diked concrete containment area where the former AST was located. No soil samples were collected at SWMU 91 during the RFI, but samples were collected at adjacent SWMUs 86 through 90. The RFI recommended further investigation and collection of surface and near-surface soil samples from the site to characterize the site for TPH contamination.

A 2009 RFI Addendum documented three soil borings completed at SWMU 91. Three samples were collected from each of the three soil borings. No visible staining or odors were evident in any of the soil samples. All soil samples were submitted to an analytical laboratory for analysis of TPH-diesel range organics (DRO) and TPH-gasoline range organics (GRO). TPH-DRO and TPH-GRO were not detected in any of the samples.

Basis of Determination

SWMU 91 has been adequately characterized and jet fuel compounds were not detected; therefore, SWMU 91 does not pose an unacceptable human health risk under current and projected industrial land use.

3. SWMU 126 Inactive Underground Storage Tank No. 3 (TU126)

Location

SWMU 126 was a former heating oil UST located at the southeast portion of Building 163.

History/Current and Anticipated Future Land Use

The heating oil tank for Building 163 originally held diesel fuel. Building 163 was demolished in 1987. The heating oil tank for Building 163 was removed successfully on November 4, 1991 under the supervision of the NMEID, Underground Storage Tank Bureau Prevention/Inspection Section. Following UST removal, soil samples were collected from 2 feet below the bottom of the tank at the north and south ends. The samples were analyzed for total recoverable petroleum hydrocarbons (TRPH) and the concentrations were determined to be less than applicable NMEID cleanup levels.

Current land use is industrial and is expected to remain industrial as the footprint of a new building (Building 160) currently covers the former UST location.

Evaluation of Relevant Information – SWMU 126

SWMU 126 was a heating oil tank installed in 1958 and associated with former Building 163. This building was demolished in 1987. The UST was removed in accordance with NMED UST regulations on November 4, 1991. Confirmation soil samples collected following the UST removal activities indicated that TPH was present at concentrations below the applicable NMEID cleanup levels.

Basis of Determination

SWMU 126 (TU126) is proposed for CAC without Controls. The SWMU was characterized in accordance with current applicable state and/or federal regulations, and the available data indicated that residual contaminants do not pose an unacceptable level of risk under the current and projected land use.

4. AOC A, MOGAS Spill Site

Location

AOC A is located in the northwest portion of CAFB and is also known as SS-19. AOC A measures approximately 400 feet by 200 feet. The site is relatively flat and much of it is asphalt-paved with a small drainage swale running to the southeast through a grassy area in the southern portion of the site along East Argentia Avenue (also known as Kermit Evans Avenue).

History/Current and Anticipated Future Land Use

AOC A was the site of two separate spills of motor gasoline (MOGAS) from two overturned fuel trucks. Both spills occurred in the early 1960s. The fuel trucks spilled their contents at the present location of Argentia Avenue, across from Facility No. 379, and southeast of Building 444 (gymnasium). AOC A was located in an area where fuel trucks leaving the vehicle refueling area adjacent to the vehicle maintenance shop (Facility No. 379) turned over into a ditch on the opposite side of Argentia Avenue on two occasions spilling between 2,000 and 3,000 gallons of MOGAS each time. No attempts were made to recover the fuel or to excavate and replace contaminated soil at the time of the spills.

The construction of a gymnasium in 1977 and associated paving along Argentia Avenue changed the physical features of the spill area. Part of the ditch where the spills occurred is now located beneath pavement, and a portion of the area exists as a small depression along the roadside.

Currently, land use at AOC A is classified as industrial. It is anticipated that land use will remain industrial in nature at AOC A.

Evaluation of Relevant Information

In 1982, a Phase I Installation Restoration Program (IRP) records search was performed by CAFB. The IRP included a records search and tour of the installation to identify and fully evaluate suspected problems associated with past hazardous material disposal sites on CAFB. No evidence of significant ecological stress related to hazardous wastes or materials was noted during the site visit. Vegetative and animal species observed on CAFB and, in particular, around the spill site, appeared healthy. It was determined that AOC A did not pose a significant concern for adverse effects on health or the environment; however, land use restrictions were recommended.

In 1985, Radian conducted a Phase II IRP investigation to determine whether environmental contamination had resulted from waste disposal practices, fuel spills and/or leaks, and fire training activities conducted on CAFB. Soil sampling was conducted at AOC A, despite the lack of reported evidence of contaminated soil during the construction of the gymnasium in 1977. Two boreholes were installed at AOC A to a depth of 60 feet bgs to evaluate the environmental impact of the two MOGAS spills. Soil samples were collected from each boring. The collected samples were analyzed for purgeable aromatic compounds, purgeable halogenated volatile organic compounds, oil and grease, and lead.

The chemical analytical results from the Phase II IRP were compared to the 2012 NMED residential and industrial SSLs and applicable CAFB background values. Oil and grease were not detected above reporting limits in any of the collected samples. Lead was detected in all seven soil samples collected at AOC A; however, all concentrations were below the 2012 NMED residential SSL. One purgeable organic compound, 1,2-dichloroethene (1,2-DCE), was detected in one sample which was well below the 2012 NMED residential SSL. The results of the investigation concluded that the horizontal and vertical extent of contamination is limited at AOC A, and likely restricted to the uppermost topsoil bounded by the drainage ditch.

In 1987, a PR/VSI and RFA were completed. The PR/VSI and RFA concluded that the potential for release to soil was high due to the fact that the spill occurred on bare soil, and that the potential for release to groundwater is low, due to the presence of caliche layers that inhibited downward migration of hazardous constituents to the water table, which is at a depth greater than 200 feet bgs.

NMED requested an assessment of AOC A in a January 12, 2004 letter to CAFB because an adequate assessment had not been conducted at the site. The supplemental assessment performed in 2005 by URS was designed to obtain additional data and determine the presence or absence of contaminants at AOC A.

During the 2005 supplemental investigation of AOC A, four soil borings were advanced in the vicinity of the former spill site. A total of eight soil samples were collected and analyzed for VOCs, SVOCs, and lead.

Lead was detected in all eight samples at concentrations less than the NMED residential SSL of 400 mg/kg. All SVOCs detections were below the laboratory reporting limits. Eleven VOCs were detected in eight samples which included, benzene, chloroform, ethylbenzene, toluene, m,p-xylene, and o-xylene. All eleven VOCs were detected at concentrations below or slightly above laboratory reporting limits in one or more samples but all detected concentrations were less than the applicable NMED residential SSLs.

Although the SSL was not exceeded for chloroform, the generic NMED risk-based SSL for the protection of groundwater was exceeded. As a result, a site-specific dilution attenuation factor (DAF) for chloroform was calculated. The derivation of the site specific DAF resulted in a groundwater protective concentration that was greater than the maximum detected chloroform concentration suggesting that migration to groundwater was unlikely.

In July 2008, CAFB submitted a CAC Petition to NMED with the intent of changing the status of AOC A from Corrective Action Required to CAC without Controls. After approval of the 2005 investigation, NMED reviewed the 2008 CAC Petition, and determined that AOC A was not eligible for a change in status to CAC without Controls. NMED indicated further soil sampling was necessary based on a comparison of detected concentrations of lead and VOCs in past assessment to the Los Alamos National Laboratory (LANL) Ecorisk Database. The comparison indicated that lead detected in surface soil as reported in the 1985 Phase I IRP investigation exceeded the risk-based ecological screening range. The soil sample with the elevated lead concentration was collected from the drainage swale that parallels Argentia Avenue and is not covered by asphalt. It was determined by NMED that the previous investigation had not adequately defined the lateral extent of lead contamination in surface soils and noted that surface soil samples were not collected during the 2005 investigation. NMED concluded that AOC A would not be considered for CAC status until the Permittee demonstrated that lead concentrations in surface soils did not exceed applicable ecological risk screening levels.

In 2012, a Phase II Supplemental Assessment was conducted by the URS Group, Inc. (URS) to define the lateral extent of potential lead contamination in surface soils within the drainage swale along Argentia Avenue. During the assessment, surface samples were collected from the drainage swale to determine if lead was present in surface soils. The collected surface soil samples were analyzed for lead only.

Analytical results from the Phase II investigation were then compared to the 2012 NMED residential and industrial SSLs and the CAFB background value for lead. Lead was detected in all of the surface soil samples at concentrations above the CAFB background value but below the NMED residential SSL.

Additionally, calculated cumulative site risk and a site hazard index values for all detected compounds were below the NMED target risk level of 1×10^{-5} for cancer risk and a hazard index of 1, indicating there is no unacceptable risk to human health at AOC A.

The results of the ERA indicated that five out of six reported lead concentrations were slightly above the available hazard quotients (HQ) for the American Robin and Montane Shrew and were slightly above the Los Alamos National Labs (LANL) Ecological Screening Values (ESVs). As a result, a refined ERA was conducted by NMED which indicated HQs were well below target levels for both species identified as receptor populations. Additionally, no sensitive areas or areas that could be considered viable ecological habitat were identified since the majority of the site is paved; the unpaved areas are maintained as lawns. No water bodies were identified at the site.

Basis of Determination

Based on the investigations, a petition for CAC without Controls was requested for AOC A. CAFB submitted a ecological risk assessment as requested by the NMED in its requirement for further assessment. Additionally, the maximum detected concentration of chloroform was determined not to have a potential to migrate to groundwater.

Surface soil lead concentrations reported in the 2012 Phase II Supplemental Assessment did not exceed the NMED residential SSL. Additionally, results of the refined NMED ERA determined that lead present in soil at AOC A would not pose ecological risk. The site was not identified as a viable ecological habitat. The human health risk assessment indicated adverse impacts to human health were below NMED target risk levels for lead. Therefore, CAC without Controls is granted for AOC A.

J. Description of SWMUs Which Were Not Granted Corrective Action Complete Status Change

SWMU 103 (Playa Lake) was submitted for consideration for corrective action complete status and proposed to be moved from Table 1 which lists SWMUs and AOCs which require corrective action to Table 3, which lists sites where a corrective action complete without controls status has been granted by NMED. Although a Phase I, II, and III RFI have been conducted for the SWMU, historic arsenic concentrations remain above current CAFB background and NMED SSLs. At this time, sufficient evidence has not been presented indicating that reported arsenic concentrations are a result of background concentrations. Additionally, SWMU 103 currently receives treated waste water from the CAFB waste water treatment plant; therefore, the evaluation for corrective action complete status is deferred until SWMU 103 is no longer in use as a waste water ponding area and the outstanding arsenic concentration exceedances are carried through the assessment process and are proven to not be a threat to human health or the environment.

References:

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- Cannon Air Force Base (AFB), 2001, Letter from Colonel N. L. Desport, Commander, 27th Civil Engineer Squadron, Cannon Air Force Base, New Mexico to Enforcement and Compliance Assurance Division, U.S. Environmental Protection Agency, Region 6, RE: Notice of a Reportable Discharge under NPDES Permit NMR05A984, May 5.
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