



**Cannon Air Force Base,
New Mexico**

**Contents:
Statement of Basis
April 2001**

HWB- CAFB- 00-003

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STATEMENT OF BASIS

Approval of No Further Action for 72 Sites at Cannon AFB

(RCRA Permit No. NM)

The New Mexico Environment Department (NMED) intends to approve a request received from the U.S. Department of the Air Force, Cannon Air Force Base for no further action (NFA) status for 62 Solid Waste Management Units (SWMU), 9 Areas of Concern (AOC), and 1 Disposal Pit (DP) listed on the Resource Conservation and Recovery Act (RCRA) Part B Permit pursuant to 40 CFR 270.42 (c) of the Hazardous and Solid Waste Amendments of 1984.

A. Facility Description

Cannon AFB is located in Curry County, New Mexico, approximately 7 miles west of the City of Clovis. The Base is situated on approximately 4,320 acres of land. Cannon AFB is situated in a nearly flat plain sloping gently (10 to 15 feet per mile) to the east and southeast. Elevations in the vicinity of Cannon AFB range from 4,250 feet to 4,350 feet above mean sea level (msl).

Cannon AFB dates to 1929, when Portair Field was established on the site as a civilian passenger terminal for early commercial transcontinental flights. In 1942 the Army Air Corps took control of the civilian airfield and it became known as the Clovis Army Air Base. In early 1945, the Base was renamed Clovis Army Air Field, where flying, bombing, and gunnery classes continued until the Base was de-activated in May, 1947.

The Base was reassigned to the Tactical Air Command and formally reactivated as Clovis Air Force Base in 1951 and renamed as Cannon Air Force Base in 1957. Several Fighter-Bomber Groups and Tactical Fighter Wings have occupied the Base since 1951.

B. History of Investigation

The U.S. Environmental Protection Agency (EPA) issued the Hazardous and Solid Waste Amendments (HSWA) Module IV to the RCRA Operating Permit effective December 17, 1989. The HSWA module required investigation of approximately 130 environmental restoration sites, referred to as SWMUs and AOCs in the permit. NMED received authorization for corrective action under the HSWA and became the administrative authority for this action.

Cannon AFB submitted a NFA documented to the NMED for approval. This Statement of Basis describes 61 of the NFAs that were identified as "potentially appropriate for NFA." Table 1 lists the regulatory correspondence related to the submittal, review, responses, and approval of each of the SWMUs.

Upon approval, this modification would be in the form of changes to Table 2 of the HSWA Module (Module IV of the RCRA Permit) that lists SWMUs that require corrective action for all releases of hazardous waste or constituents, regardless of the time at which waste was placed in or released to such a unit. Upon approval, Table 2a will be added the HSWA Module that will consist of the original list of

SWMUs, showing SWMUs approved for NFA under this modification as strike-outs. In addition, Table 2b will be added to the HSWA Module that will list the 61 SWMUs approved for NFA status.

Table 1
NFA SWMUs, Submittal Dates and Batches, and Comment Dates for
SWMUs, AOCs and One DP that Could be Appropriate for NFA

SWMU/AOC	Number	Date Submitted/Batch	NMED Criterion for NFA Proposal	Discussed in Section
SWMU	74	July 2000	1	1
AOC	D	July 2000	1	2
SWMU	113	July 2000	5	3
DP	33	July 2000	5	4
SWMU	7	July 2000	5	5
SWMU	9	July 2000	5	6
SWMU	32A	July 2000	1	7
SWMU	33B	July 2000	1	8
SWMU	11	July 2000	5	9
SWMU	38	July 2000	1	10
SWMU	39	July 2000	2	11
SWMU	46	July 2000	5	12
SWMU	47	July 2000	5	13
SWMU	51	July 2000	5	14
SWMU	57	July 2000	1	15
SWMUs	61, 62, 63	July 2000	1	16
SWMU	92	July 2000	5	17
SWMU	94	July 2000	5	18
SWMU	8	July 2000	5	19
SWMU	1	July 2000	5	20
SWMU	2	July 2000	2	21
SWMU	3	July 2000	5	22
SWMU	4	July 2000	5	23
SWMU	5	July 2000	5	24
SWMU	6	July 2000	5	25
SWMU	10	July 2000	5	26
SWMU	16	July 2000	5	27
SWMU	34	July 2000	5	28
SWMU	48A	July 2000	5	29
SWMU	48B	July 2000	1	30
SWMU	49	July 2000	1	31
SWMU	50	July 2000	2	32
SWMU	55	July 2000	5	33
SWMU	72	July 2000	1	34
SWMU	75	July 2000	2	35
SWMU	76	July 2000	2	36

Table 1, cont.

SWMU/AOC	Number	Date Submitted/Batch	NMED Criterion for NFA Proposal	Discussed in Section
SWMU	77	July 2000	2	37
SWMU	78	July 2000	5	38
SWMU	79	July 2000	5	39
SWMU	81	July 2000	5	40
SWMU	82	July 2000	5	41
SWMU	83	July 2000	2	42
SWMU	85	July 2000	5	43
SWMU	86, 87, 88, 89, 90	July 2000	5	44
SWMU	91	July 2000	2	45
SWMU	93	July 2000	5	46
SWMU	95	July 2000	5	47
SWMU	96	July 2000	5	48
SWMU	98	July 2000	5	49
SWMU	104	July 2000	5	50
SWMU	105	July 2000	5	51
SWMU	106	July 2000	5	52
SWMU	107	July 2000	5	53
SWMU	124	July 2000	1	54
SWMU	125	July 2000	1	55
SWMU	126	July 2000	2	56
SWMU	127	July 2000	5	57
SWMU	128	July 2000	1	58
AOC	A	July 2000	2	59
AOC	B	July 2000	2	60
AOC	C	July 2000	2	61
AOC	E	July 2000	5	62
AOC	F	July 2000	5	63
AOC	G	July 2000	5	64
AOC	H	July 2000	5	65
AOC	36	July 2000	2	66

NMED = New Mexico Environment Department
 SWMU = Solid Waste Management Unit
 AOC = Area of Concern
 DP = Disposal Pit

C. Investigation Results

The NMED has developed NFA criteria that are used during the investigation and remediation (if necessary) of SWMUs and that are used to determine the appropriateness of proposing NFA for any particular SWMU. During investigation of SWMUs at Cannon AFB, it was determined that RCRA solid or hazardous wastes and/or constituents or other Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) hazardous substances were never managed (generated, treated, stored, or disposed of) at some sites identified as SWMUs. Other SWMUs could not be located, did not exist, were duplicates of other SWMUs, or were included in investigations of other SWMUs. Additionally, some SWMUs never had a release to the environment and future releases were also determined to be unlikely. Finally, some SWMUs were characterized and remediated in accordance with current applicable state and/or federal regulations, and confirmatory sampling data indicate that remaining contaminant concentrations do not pose unacceptable levels of risk to human health and the environment under current and projected future land uses.

Section 1 below briefly describes the location, history, evaluation of relevant information, and the basis for determination for each of the 62 SWMUs, 9 AOCs and 1 DP proposed for NFA. More detailed descriptions for each SWMU and AOC can be found in the NFA proposal document.

D. Permit Modification

A copy of the public notice, fact sheet, modified permit, and NMED's Statement of Basis can be reviewed at either of the following:

Government Information Department
Zimmerman Library
University of New Mexico
Albuquerque, NM 87131

New Mexico Environment Department
Hazardous and Radioactive Material Bureau
2044A Galisteo Street
Santa Fe, NM 87505
(505) 827-1558

E. Selected Remedy

The NMED's determination that NFA is required at these SWMUs and AOCs is based upon one or more of the following: field surveys, historical records, aerial photographs, employee interviews, and/or confirmatory sampling activities that yielded either no or insignificant releases of hazardous wastes to the environment. The determination to propose a SWMU for NFA is based upon the following NMED criteria:

1. The SWMU cannot be located, does not exist, is a duplicate SWMU, or is located within and, therefore investigated as part of another SWMU.
2. The SWMU has never been used for the management (that is, generation, treatment, storage, or disposal) of RCRA solid or hazardous wastes and/or constituents or other CERCLA hazardous substances.

3. No release to the environment has occurred nor is likely to occur in the future. The term "release" by definition means any spilling, leaking, pouring, emitting, emptying, discharging, injecting, pumping, escaping, leaching, dumping, or disposing of hazardous wastes (including hazardous constituents) into the environment.
4. There was a release but the site was characterized and/or remediated under another authority that adequately addressed corrective action, and documentation such as a closure letter is available.
5. The SWMU has been characterized or remediated in accordance with current applicable state and/or federal regulations, and the available data indicate that contaminants pose an unacceptable level of risk under current and projected future land use.

F. Public Participation

_____ people (including representatives from Cannon AFB, and NMED) attended a public meeting arranged by Cannon AFB on _____ at _____. Subsequent to the meeting, _____ written comments were submitted to the NMED.

The NMED issued a Public Notice during the meeting that announced the beginning of a 45-day comment period.

G. Next Steps

The NMED will notify Cannon AFB and each person on the public comment 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 New Mexico Administrative Code (NMAC) 4.1. Subpart IX.

H. Contact Person for Additional Information

For additional information, contact the following individual:

Stephanie Kruse
New Mexico Environment Department
Hazardous and Radioactive Materials Bureau
2044A Galisteo Street
Santa Fe, NM 87505
(505) 827-1561

I. Description of SWMUs Proposed for NFA

SWMUs proposed and approved for NFA in May 2001.

1. SWMU 74, Landfill No. 1

Location

SWMU 74, Landfill No. 1, was an inactive landfill located in the northwest area of Cannon AFB, beneath a portion of the 14th fairway at the Whispering Winds Golf Course. The landfill was reportedly unlined,

and it occupied approximately 8 acres of land. Overall, the landfill site is relatively flat and is covered by the grass of the 14th fairway. The general surface water runoff is toward the east eventually discharging into a pond located east of the golf course's 15th fairway.

History

SWMU 74 was the original landfill at Cannon AFB. It accepted wastes from 1943 to 1946. The landfill's operation apparently consisted of placing waste in trenches and burning it before prior to burial. Waste materials received at the site reportedly included domestic solid wastes and shop wastes, which included waste oils and solvents, paint strippers and thinners, outdated paint, pesticide containers, and various empty cans and drums.

Evaluation of Relevant Information

A Phase I RFI of SWMU 74 was conducted to determine whether a release of landfill-related chemicals had occurred. Two electromagnetic geophysical surveys were completed, one using a Geonics EM-31 and the other using a Geonics EM-61. The results of both surveys were interpreted, and the anomalies encountered were determined to be indicative of the presence of landfill materials. Based on these results, a subsurface soil investigation was designed and a total of 23 borings were drilled to depths ranging from 10 to 50 feet to delineate the extent of contamination at SWMU 74.

One VOC, toluene two SVOCs, pyrene and pentachlorophenol, one herbicide, 2-[2-methyl-4-chlorophenoxy] propionic acid [MCPP], one pesticide, 4,4'-DDT and one metal, barium were detected at concentrations of potential concern during the Phase I RFI at SWMU 74. All other compounds detected were excluded from being concentrations of potential concern (COPCs) because they were detected below the associated background levels, because they were considered to be a laboratory contaminant, or because they did not have risk screening criteria.

A human health risk screen was performed for SWMU 74 to determine whether chemicals detected in soils at the site may pose an unacceptable risk to human health. Maximum concentrations of the chemicals were compared to USEPA Region III RBCs for residential soil ingestion to estimate if there was a potential noncarcinogenic hazard or carcinogenic risk. None of the chemicals detected above background levels exceeded the established RBCs, indicating that this SWMU did not pose an unacceptable level of risk to human health.

The potential for groundwater contamination was considered minimal since the depth to groundwater is greater than 250 feet and the soil sampling results demonstrate that contaminants were not transported significantly in a vertical direction beneath the SWMU.

Basis of Determination

SWMU 74 has been determined to be appropriate for NFA based on New Mexico Environment Department (NMED) NFA Criterion 5: The SWMU has been characterized in accordance with the current applicable state and federal regulations, and the available has data indicated that the contaminants present pose an acceptable level of risk under current and projected future land use.

2. AOC D, Asbestos Burial Pit

Location

Area of Concern (AOC) D, Asbestos Burial Pit, underlies portions of the tee box and fairway at the 7th hole of the Whispering Winds Golf Course. The site has been described as a demolition debris disposal pit, approximately 10 feet below ground surface.

History

AOC D was reportedly used as a disposal site for debris derived from the demolition of numerous buildings at Cannon AFB in the 1950s. The site was discovered during a golf course expansion project when a bulldozer removed a layer of topsoil approximately 1 foot thick from the surface and exposed the chips of non-friable asbestos containing material (ACM). The potential ACM appeared to be pieces of siding from a building, each piece measuring approximately 2 inches square. The lateral extent of the debris was unknown, but the maximum depth was estimated to be 10 feet.

Other accounts from base personnel suggested that any debris present at AOC D may have simply fallen off barracks buildings that were temporarily stored in this area, not intentionally disposed of at this location.

Evaluation of Relevant Information

An EM-61 electromagnetic geophysical survey was conducted in the area of AOC D. This investigation found no significant metal (i.e., drums) or other debris buried at the site.

A Site Inspection (SI) of AOC D was done in an area that measured approximately 150 feet by 590 feet. During the SI, eight borings were drilled to maximum depths of 10 feet and one boring was drilled to a maximum depth of 25 feet based on the visible presence of chips of potential transite debris near the surface of this boring.

The chips of debris sent for asbestos identification using polarized light microscopy (PLM) were found to contain greater than 1 percent chrysotile asbestos. The SI recommended that the exposed chips of debris, an ACM, be removed.

No organic compounds were detected above laboratory detection limits. All metals were detected at concentrations within established background ranges or below the USEPA Region VI Human Health Media-Specific Screening Levels (MSSLs). The vertical extent of contamination was adequately characterized by the soil borings.

The potential for groundwater contamination was considered minimal since the depth to groundwater is greater than 250 feet, and the soil sampling results demonstrate that contaminants were not transported significantly in a vertical direction beneath the SWMU.

With the exception of the non-friable ACM found near the ground surface, no other contamination of any significance was detected in the area of this AOC. In a letter to Col. Clary, Commander Cannon AFB, on November 6, 1997, NMED stated the SI was technically adequate and approved the report.

The conclusions reached in the SI and the NMED letter are consistent in recommending that the only action required at AOC D is the removal and proper disposal of the exposed ACM. This action has been completed, and the action will be repeated in the future if additional ACM is exposed.

Basis of Determination

AOC D has been determined to be appropriate for NFA status based on NMED NFA Criterion 4: A release from the AOC to the environment has occurred, but the AOC was characterized under another authority (NMED's Hazardous and Radioactive Materials Bureau) and a closure letter is available.

3. SWMU 113, Landfill 5

Location

SWMU 113, Landfill No. 5 is a 70-acre inactive landfill located in the southeast area of Cannon AFB. Past trenching and waste disposal activities occurred across approximately 30 acres in the eastern portion of the site. A 4-foot-high, barbed-wire fence with two locked entrances surrounds this area. The western 40 acres appear to have received only construction debris for purposes of backfilling natural depressions in the area. Overall, the landfill site has relatively flat topography and is sparsely vegetated with only a few trees. The general surface water runoff is toward the southeast, or into local surface depressions.

History

SWMU 113 was active between 1968 and 1984. Waste materials received at this site reportedly included domestic solvent waste, waste oils, and solvents; paints, paint removers, and thinners; pesticide containers; and various empty drums and cans. From 1968 to 1972, the mode of this landfill's operation included burning and burying waste in trenches. After 1981, the only waste received at SWMU 113 was tree limbs and construction rubble, and the standard operation of the site included direct burial of waste in trenches.

Cell #3, located within the landfill premises, is a capped, RCRA-regulated unit that reportedly received hazardous waste through 1981. Wastes received at Cell #3 reportedly included waste oil and solvents in quantities estimated at 5 to 10 gallons per month. No waste was received at Cell #3 from the end of 1981 until the cell's closure in 1983. Closure activities included the installation of an impermeable clay cap and the construction of an additional security fence within the area of SWMU 113.

Evaluation of Relevant Information

A Phase I Installation Restoration Program (IRP) Records Search evaluated the potential existence of contamination at SWMU 113 and stated that this site warranted further investigation; however, this records search did not include any investigative activities.

A Phase II (Stage 1) IRP investigation included the installation of four groundwater monitoring wells and the collection and analysis of groundwater samples from these wells. One well was installed hydraulically upgradient from Landfill No. 5, and the other three wells were installed downgradient from the site in order to determine the nature, extent, and migration rate of any potential contaminants originating from this SWMU. The Phase II (Stage 1) IRP investigation indicated that no groundwater contamination attributable to past or ongoing activities existed at SWMU 113.

A Preliminary Review/Visual Site Inspection RCRA Facility Assessment (RFA) recommended additional groundwater and vadose zone monitoring to determine if contaminants from Cell #3 have migrated beneath SWMU 113; however, this RFA did not include any additional investigative activities.

A subsequent Remedial Investigation (RI) for 18 IRP/SWMUs at Cannon AFB included the sampling of six monitoring wells in the area of SWMU 113 for Appendix IX constituents, as listed in 40 CFR 264. Slightly elevated concentrations of three metals were detected during this investigation. This RI also included a Baseline Risk Assessment (BRA) that concluded potential impacts to human health and the environment from SWMU 113 were insignificant.

A Phase I RFI, completed at SWMU 113 in 1995, included site topographic surveying and mapping, surface geophysical surveying, a soil gas investigation, and a surface and subsurface soil investigation. The RFI included a human health risk screen, which indicated that no unacceptable risk to human health from the chemicals detected during this investigation was present at SWMU 113. The RFI recommended the continued monitoring of groundwater quality to assess potential impacts from Cell #3 as the only action required at SWMU 113.

Based on the results of the Phase I RFI, NMED issued a letter addressed to Col. Clary, Commander Cannon AFB, dated February 17, 1998, that stated that the RFI was technically adequate and approved the report. However, the letter stipulated that post-closure care, including groundwater monitoring, must continue at Cell #3.

Basis of Determination

SWMU 113 has been determined to be appropriate for NFA status based on NMED NFA Criterion 4: A release from the AOC to the environment has occurred, but the AOC was characterized under another authority (NMED's Hazardous and Radioactive Materials Bureau) and a closure letter is available.

4. DP-33, Drum Disposal Pit

Location

DP-33 was a drum disposal pit discovered in 1991 during earthwork operations, and was located in the northeast portion of Cannon AFB near Engineers Way Road. The corrective action resulted in an excavation measuring approximately 70 feet by 90 feet and 8 feet deep.

History

DP-33 reportedly was the historical location of an aircraft hangar. The hangar was demolished in the mid-1960s. Buried drums were first discovered at DP-33 during earthwork operations in 1991. DP-33 was the site of a Rapid Response Corrective Action, which removed buried drums containing what appeared to be petroleum waste liquids. The area of DP-33 is currently used as an electrical equipment storage yard.

Evaluation of Relevant Information

During earthwork operations in 1991, a buried drum was excavated and its content spilled onto surrounding soils. IT Corporation performed a Rapid Response Corrective Action at the site, and approximately 25 drums and approximately 610 cubic yards of soils were excavated from the area of DP-33.

Ten confirmation samples were collected from the excavation (two samples each from the floor and the four walls). Two composite samples were collected from each of the two stockpiles of excavated soil (one composed of soils removed from the immediate vicinity of the drums and the other composed of visually impacted soils from the excavation).

One organic compound, xylene, was detected in the confirmation samples at a concentration above laboratory detection limits. Low concentrations of three pesticides, endosulfan, DDE and DDT, were also detected in the confirmation samples. All metals were determined to be at concentrations below the Region VI MSSSLs for industrial sites and within established background ranges.

A slightly elevated concentration of TRPH (1,380 mg/kg) was also detected in one of the confirmation samples collected from the floor of the excavation. However, an additional sample was collected from a location proximate to this sample at a depth 3 feet below the floor of the excavation and analyzed for total TRPH. Total TRPH was not detected above the laboratory detection limit in this sample, demonstrating that concentrations of TRPH diminish within a few feet below the limits of the excavation. No other COPCs were detected in any of the confirmation samples. Thus the horizontal and vertical extent of contamination was adequately characterized by the soil samples.

Samples were then collected from the proposed backfill source areas, and NMED granted approval to backfill.

Two disposal profile samples were collected from the contaminated soil stockpiles. Although 11 metals and TRPH were detected in the two disposal profile samples using TCLP methods, none of these analytes were detected at hazardous concentrations. Two additional disposal profile samples were later collected from the contaminated soil stockpiles and also analyzed for total TRPH, and again TRPH was not detected at hazardous concentrations in these samples.

Nine samples were also collected from the residual liquids found in the excavated drums. A field hazard categorization was performed on each sample. None of the nine residual liquid samples collected from the excavated drums exhibited hazardous characteristics when they were field hazard categorized.

The Rapid Response Corrective Action included a risk evaluation. Two exploratory trenches (one extending approximately 60 feet west of the main excavation and the other extending approximately 90 feet east of the main excavation) were also dug to further assess the potential presence of buried drums. No drums were encountered outside the main excavation.

The potential for groundwater contamination was considered minimal since the depth to groundwater is greater than 250 feet, and the soil sampling results demonstrate that contaminants were not transported significantly in a vertical direction beneath DP-33.

In a letter to Col. W.P. Ard, Commander 27th Support Group, dated December 12, 1996, NMED stated the corrective action was consistent with applicable regulations and protective of both human health and the environment. Therefore, NMED approved the Final Project Report and required NFA at the site.

Basis of Determination

DP-33 has been determined to be appropriate for NFA status based on NMED NFA Criterion 4: A release from the site to the environment has occurred, but the site was characterized under another authority (NMED's Ground Water Protection and Remediation Bureau) and a closure letter is available.

5. SWMU 7, Oil/Water Separator No. 129

Location

SWMU 7, OWS No. 129 and a grease or sand trap, that had been misidentified as an OWS, was located adjacent to the northwest side of Building 129, south of Building 116. For the purposes of this report, this unit will be referenced herein as SWMU 7, an OWS. The OWS was an underground concrete unit that consisted of one compartment measuring approximately 5 feet by 7 feet in plan and extended approximately 5.5 feet below the paved surface. The immediate area above the unit was paved with a layer of asphalt approximately 0.5 feet thick.

History

SWMU 7 was active from approximately 1943 until the unit was removed in 1996. The unit reportedly received waste wash water generated from aircraft maintenance operations in Building 119, an aircraft maintenance hangar. Wastewaters from the unit were discharged to a storm sewer line.

Evaluation of Relevant Information

During the RFI of the Appendix II sites, three soil borings were drilled to depths of 10 feet in the area of SWMU 7. Soil samples were collected at the surface and from depths of 2.5, 5, and 10 feet to characterize the distribution of potential contaminants. Field screening with a photo ionization detector (PID) revealed no evidence of contamination during this investigation.

Three organic compounds, acetone, toluene, and xylenes and two metals, arsenic and chromium were detected at low concentrations in the surface soil samples collected from at least one of the three borings. One organic, acetone and two metals, mercury and nickel were detected in at least one of the subsurface samples at low concentrations.

The Risk Assessment portion of the RFI report concluded that detected concentrations of these chemicals were all within or below the acceptable excess carcinogenic and noncarcinogenic risk ranges. Based on the conclusions reached in the Risk Assessment for SWMU 7, the RFI recommended that an integrity test be performed on the OWS at this SWMU. As long as the unit passed the integrity test, NFA was recommended.

A Corrective Measure Completion Report documented the removal of the OWS at SWMU 7. The OWS was pumped dry and cleaned. Then the unit was excavated by hand, due to the proximity of Building 116, a high-voltage electrical facility. No stained soil or fuel odors were observed during the excavation

activities. The removal of the OWS effectively rendered the RFI's recommendation for an integrity test moot.

One soil sample was then collected from each of the excavation's four walls, and two soil samples were collected from the bottom of the excavation, each at an approximate depth of 8 feet. A seventh, confirmatory sample was collected from the center of the excavation's bottom, at approximately 8 feet of depth. Soil samples analyzed by the laboratory were compared to the USEPA Region VI Human Health MSSLS for residential soil to determine if a significant release had occurred in the area of SWMU 7. Arsenic was the only compound that potentially exceeded the corresponding MSSL. However, the maximum possible concentration of arsenic fell below the established background levels for metals at Cannon AFB, so the elevated concentration of arsenic was dismissed as naturally occurring. The report concluded that no unacceptable human health risks due to chemical releases were expected at this SWMU. Based on this, the Corrective Measure Completion Report recommended NFA for SWMU 7.

The potential for groundwater contamination was considered minimal since the depth to groundwater is greater than 250 feet, and the soil sampling results demonstrate that contaminants were not transported significantly in a vertical direction beneath the SWMU.

Basis of Determination

SWMU 7 was determined to be appropriate for NFA based on NMED NFA Criterion 5: The SWMU has been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected land use.

6. SWMU 9, Aircraft Washrack Drain System

Location

SWMU 9, an Aircraft Washrack Drain System is located north of the flightline and southwest of Building 170 at Cannon AFB. SWMU 9 measured approximately 5 feet by 4 feet in plan and extended approximately 5 feet below the paved surface.

History

SWMU 9 was active from approximately 1966 until the unit was removed in 1996. SWMU 9 was a drain/sandtrap located in the center of a concrete washrack pad used to clean aircraft. The washrack pad sloped to SWMU 9, which discharged to OWS No. 165. The unit reportedly received waste wash water generated from aircraft cleaning operations at the washrack. Wastewaters from the unit were discharged to a sanitary sewer line.

Evaluation of Relevant Information

During the RFI of Appendix II sites, four borings were drilled to depths of 20 feet in the area of SWMU 9. Soil samples were collected at the surface and from depths of, 5, 10, 15 and 20 feet to characterize the distribution of potential contaminants. Field screening with a PID detected readings as high as 480 ppm during this investigation, indicating the potential presence of contamination in all four borings.

Four organic compounds, acetone, tetrachloroethene, toluene and xylenes and three metals, barium, chromium, and nickel were detected at concentrations of potential concern in the area of SWMU 9. The Risk Assessment portion of the RFI report concluded that the detected concentrations of these chemicals were all within or below the acceptable excess carcinogenic and noncarcinogenic risk ranges. An Ecological Risk Assessment was also included in the RFI for SWMU 9. The assessment determined that the COC (VOCs or metals) did not pose an unacceptable level of risk. Based on the conclusions reached in the Risk Assessment and the Ecological Risk Assessment, the RFI recommended NFA for SWMU 9.

A Corrective Measure Completion Report documented the removal of the Drain System at SWMU 9. The unit was pumped dry and cleaned in 1996. Two feet of soil surrounding the unit was excavated, and the drain system was removed from the excavation in pieces. Stained soil and fuel odors were observed during the excavation activities in the area of the 8-inch pipe that connected SWMU 9 to SWMU 8.

One soil sample was then collected from each of the excavation's four walls, and two soil samples were collected from the bottom of the excavation, each at an approximate depth of 8 feet. Two additional samples were collected from the sand trap outlet areas, each at an approximate depth of 4 feet. A ninth, confirmatory sample was collected from the center of the excavation's bottom. Soil samples analyzed by the laboratory were compared to the USEPA Region VI Human Health MSSLs for residential soil to determine if a significant release had occurred in the area of SWMU 9. Arsenic was the only compound that potentially exceeded the corresponding MSSL. However, the maximum possible concentration of arsenic fell below the established background levels for metals at Cannon AFB. The report concluded that no unacceptable human health risks due to chemical releases were expected at this SWMU and recommended NFA for SWMU 9.

The potential for groundwater contamination was considered minimal since the depth to groundwater is greater than 250 feet, and the soil sampling results demonstrate that contaminants were not transported significantly in a vertical direction beneath the SWMU.

Basis of Determination

SWMU 9 has been determined to be appropriate for NFA based on NMED NFA Criterion 5: The SWMU has been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected land use.

7. SWMU 32A, Oil/Water Separator No. 186 (#1 - East)

Location

SWMU 32A, OWS No. 186 (#1 - East), was located on the east side of Building 186 on the flightline side and adjacent to a washrack. The OWS measured approximately 6 feet by 6 feet in plan and extended approximately 7.5 feet below the paved surface. The immediate area above the unit was paved with a layer of asphalt approximately 0.5 feet thick.

History

SWMU 32A was active from approximately 1971 until the unit was removed in 1997. The OWS was an underground concrete unit consisting of two compartments, each of which had a 300-gallon capacity.

The unit reportedly received waste wash water generated from the aircraft washrack. Wastewaters from the unit were discharged to a sanitary sewer line.

Evaluation of Relevant Information

During an RFI of the Appendix II sites, three borings were drilled to depths of 10 feet in the area of SWMU 32A. Soil samples were collected at the surface and from depths of 2.5, 5 and 10 feet to characterize the distribution of potential contaminants. Field screening with a PID revealed a maximum reading of 1.8 ppm, indicating a low potential for contamination during this investigation.

One organic, xylene, was detected at low concentrations in the surface soil samples collected from at least one of the three borings. No organics and three metals, barium, mercury and nickel were detected in at least one of the subsurface samples at low concentrations.

The Risk Assessment portion of the RFI report concluded that the detected concentrations of these chemicals were all within or below the acceptable excess carcinogenic and noncarcinogenic risk ranges. Based on the conclusions reached in the Risk Assessment for SWMU 32A, the RFI recommended that an integrity test be performed on the OWS at this SWMU. As long as the unit passed the integrity test, NFA was recommended.

A Corrective Measure Completion Report documented the removal of the OWS at SWMU 32A. The OWS was pumped dry and cleaned. The unit was then excavated routinely and without incident. No stained soil or fuel odors were observed during the excavation activities. A new OWS was installed to replace the old unit. The removal of the OWS effectively rendered the RFI's recommendation for an integrity test moot.

One soil sample was then collected from each of the excavation's four walls, and two soil samples were collected from the bottom of the excavation, each at an approximate depth of 9 to 9.5 feet. A seventh, confirmatory sample was collected from the center of the excavation's bottom at approximately 8 feet of depth. Soil samples analyzed by the laboratory were compared to the USEPA Region VI Human Health MSSSLs for residential soil to determine if a significant release had occurred in the area of SWMU 32A. Arsenic was the only compound that potentially exceeded the corresponding MSSSL. However, the maximum possible concentration of arsenic fell below the established background levels for metals at Cannon AFB. The report concluded that no unacceptable human health risks due to chemical releases were expected at this SWMU. Based on this, the Corrective Measure Completion Report recommended NFA for SWMU 32A.

The potential for groundwater contamination was considered minimal since the depth to groundwater is greater than 250 feet, and the soil sampling results demonstrate that contaminants were not transported significantly in a vertical direction beneath the SWMU.

Basis of Determination

SWMU 32A has been determined to be appropriate for NFA based on NMED NFA Criterion 5: The SWMU has been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected future land use.

8. SWMU 33B, Oil/Water Separator No. 186 (#2 - West)

Location

SWMU 33B, OWS No. 186 (#2 - West), was located adjacent to the west side of Building 186, near the northwest corner. The OWS was an underground concrete unit consisting of two compartments, including an oil storage tank with a capacity of 140 gallons. The OWS measured approximately 6 feet by 6 feet in plan and extended approximately 7.5 feet below the paved surface. The immediate area above the unit was paved with a layer of asphalt approximately 0.5 feet thick.

History

SWMU 33B was active from approximately 1971 until the unit was removed in 1996. The unit reportedly received waste wash water from the drains in Building 186, an aircraft hangar. Wastewaters from the unit were discharged to a sanitary sewer line.

Evaluation of Relevant Information

During the RFI of Appendix II sites, three borings were drilled to depths of 10 feet in the area of the OWS unit. Soil samples were collected at the surface and from depths of 2.5, 5 and 10 feet to characterize the distribution of potential contaminants. Field screening with a PID revealed a maximum reading of 7.2 ppm, indicating a low potential for contamination during this investigation.

One organic, acetone, and two metals, chromium and nickel, were detected at low concentrations in the surface soil samples collected from at least one of the three borings. One organic, toluene, and two metals, arsenic and barium, were detected in at least one of the subsurface samples at low concentrations.

The Risk Assessment portion of the RFI report concluded that the detected concentrations of these chemicals were all within or below the acceptable excess carcinogenic and noncarcinogenic risk ranges. Based on the conclusions reached in the Risk Assessment for SWMU 33B, the RFI recommended that an integrity test be performed on the OWS at this SWMU. As long as the unit passed the integrity test, NFA was recommended.

The Corrective Measure Completion Report documented the removal of this SWMU. The OWS at SWMU 33B was pumped dry and cleaned. The unit was then excavated routinely and without incident. Some stained soil was observed during the excavation activities, indicating that the unit had leaked. The removal of the OWS effectively rendered the RFI's recommendation for an integrity test moot.

One soil sample was then collected from each of the excavation's four walls, and two soil samples were collected from the bottom of the excavation, each at an approximate depth of 8 to 9 feet. A seventh, confirmatory sample was collected from the center of the excavation's bottom at approximately 9 feet of depth and sent for laboratory analysis. Soil samples analyzed by the laboratory were compared to the USEPA Region VI Human Health MSSLS. Arsenic was the only compound that potentially exceeded the corresponding MSSSL. However, the maximum possible concentration of arsenic fell below the established background levels for metals at Cannon AFB. The report concluded that no unacceptable human health risks due to chemical releases were expected at this SWMU. Based on this, the Corrective Measure Completion Report recommended NFA for SWMU 33B.

The potential for groundwater contamination was considered minimal since the depth to groundwater is greater than 250 feet, and the soil sampling results demonstrate that contaminants were not transported significantly in a vertical direction beneath the SWMU.

Basis of Determination

SWMU 33B has been determined to be appropriate for NFA based on NMED NFA Criterion 5: The SWMU has been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected future land use.

9. SWMU 11, Oil/Water Separator No. 170

Location

SWMU 11, OWS No. 170, was located to the west of Building 170. The OWS measured approximately 5 feet by 7 feet in plan and extended approximately 5.5 feet below the paved surface. The immediate area above the unit was paved with a layer of asphalt approximately 0.5 feet thick.

History

SWMU 11 was active from approximately 1963 until approximately 1989. The unit was removed in 1996. The OWS was an underground concrete unit consisting of three compartments. The unit reportedly received effluent from the drains in Building 170, an aircraft maintenance hangar. Wastewaters from the unit discharged to a sanitary sewer line.

Evaluation of Relevant Information

During an RFI of Appendix II sites, three borings were drilled to depths of 10 feet in the area of the OWS unit. Soil samples were collected at the surface and from depths of 2.5, 5 and 10 feet to characterize the distribution of potential contaminants. Field screening with a PID detected low-level readings up to 6.0 mg/kg during this investigation, indicating the potential presence of contamination in all three borings.

Low levels of VOCs were detected at insignificant concentrations in the surface soil samples collected at this SWMU. One organic, methylene chloride, and two metals, mercury and nickel were detected in at least one of the subsurface samples at low concentrations.

The Risk Assessment portion of the RFI report concluded that the detected concentrations of these chemicals were all within or below the acceptable excess carcinogenic and noncarcinogenic risk ranges. Based on the conclusions reached in the Risk Assessment for SWMU 11, the RFI recommended that an integrity test be performed on the OWS at this SWMU. As long as the unit passed the integrity test, NFA was recommended.

The Corrective Measure Completion Report documented the removal of the OWS at SWMU 11. The OWS was pumped dry and cleaned. The unit was then excavated routinely and without incident. No staining was observed on the exterior walls of the unit during the excavation activities. The removal of the OWS effectively rendered the RFI's recommendation for an integrity test moot.

One soil sample was then collected from each of the excavation's four walls, and two soil samples were collected from the bottom of the excavation, each at an approximate depth of 8 to 9 feet. A seventh, confirmatory sample was collected from the center of the excavation's bottom at approximately 9 feet of depth and sent for laboratory analysis. Soil samples analyzed by the laboratory were compared to the USEPA Region VI Human Health MSSLs for background soil concentrations to determine if a significant release had occurred in the area of SWMU 11. Barium was the only compound detected at a concentration that exceeded the corresponding MSSL. However, the maximum concentration of barium detected (456 mg/kg) fell below both the established background level for barium at Cannon AFB (805 mg/kg) and the MSSL for residential soil (5,300 mg/kg). The Corrective Measure Completion Report concluded that no chemical releases, posing an unacceptable human health risk for any potential exposure pathway, had occurred at this SWMU. Therefore, NFA was recommended for SWMU 11.

The potential for groundwater contamination was considered minimal since the depth to groundwater is greater than 250 feet, and the soil sampling results demonstrated that contaminants were not transported significantly in a vertical direction beneath the SWMU.

Basis of Determination

SWMU 11 has been determined to be appropriate for NFA based on NMED NFA Criterion 5: The SWMU has been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected future land use.

10. SWMU 38, Oil/Water Separator No. 194

Location

SWMU 38, OWS No. 194, was located adjacent to the southeast corner of Building 194. The OWS measured approximately 9 feet by 7 feet in plan and approximately 12 feet in depth. The top of the unit sat approximately 1 foot above ground surface.

History

SWMU 38 was active from approximately 1971 until the unit was removed in 1996. The OWS was an underground concrete unit consisting of three compartments, including an oil storage tank with a capacity of 140 gallons. The unit reportedly received waste wash water from the drains in Building 194, an aircraft hangar. Wastewaters from the unit were discharged to a sanitary sewer line.

Evaluation of Relevant Information

During an RFI of the Appendix II sites, three borings were drilled to depths of 10 feet in the area of the OWS unit. Soil samples were collected at the surface and from depths of 2.5, 5 and 10 feet to characterize the distribution of potential contaminants. Field screening with a PID revealed a maximum reading of 1.0 ppm, indicating a low potential for contamination during this investigation.

Three organics, acetone, 1,1,1-trichloroethane and toluene were detected at low concentrations in the surface soil samples collected from at least one of the three borings. Three organics, acetone,

1,1,1-trichloroethane and toluene and two metals, chromium and nickel were detected in at least one of the subsurface samples at low concentrations.

The Risk Assessment portion of the RFI report concluded that the detected concentrations of these chemicals were all within or below the acceptable excess carcinogenic and noncarcinogenic risk ranges. Based on the conclusions reached in the Risk Assessment for SWMU 38, the RFI recommended that an integrity test be performed on the OWS at this SWMU. As long as the unit passed the integrity test, NFA was recommended.

The Corrective Measure Completion Report documented the removal of the OWS at SWMU 38. The OWS was pumped dry and cleaned. The unit was then excavated without incident. No stained soil or odors were observed during the excavation activities. The removal of the OWS effectively rendered the RFI's recommendation for an integrity test moot.

One soil sample was then collected from each of the excavation's four walls, and two soil samples were collected from the bottom of the excavation, each at an approximate depth of 12 to 14 feet. A seventh, confirmatory sample was collected from the center of the excavation's bottom at approximately 14 feet of depth and sent for laboratory analysis. Soil samples analyzed by the laboratory were compared to the USEPA Region VI Human Health MSSLs for residential soil to determine if a significant release had occurred in the area of SWMU 38. Arsenic was the only compound that potentially exceeded the corresponding MSSL. However, the maximum possible concentration of arsenic fell below the established background levels for metals at Cannon AFB. The Corrective Measure Completion Report concluded that no chemical releases posing an unacceptable human health risk for any potential exposure pathway had occurred at this SWMU. Therefore, NFA was recommended for SWMU 38.

The potential for groundwater contamination was considered minimal since the depth to groundwater is greater than 250 feet, and the soil sampling results demonstrate that contaminants were not transported significantly in a vertical direction beneath the SWMU.

Basis of Determination

SWMU 38 has been determined to be appropriate for NFA based on NMED NFA Criterion 5: The SWMU has been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected future land use.

11. SWMU 39, Oil/Water Separator No. 195

Location

SWMU 39, OWS No. 195, was located adjacent to the northeast corner of Building 195. The OWS measured approximately 9 feet by 7 feet in plan and approximately 8.5 feet in depth. The immediate area above the unit was paved with a layer of asphalt approximately 0.5 feet thick.

History

SWMU 39 was active from approximately 1971 until the unit was removed in 1996. The OWS was an underground concrete unit consisting of two compartments, including an oil storage tank with a capacity

of 140 gallons. The unit reportedly received waste wash water from the drains in Building 194, an aircraft hangar. Wastewaters from the unit were discharged to a sanitary sewer line.

Evaluation of Relevant Information

During the RFI of Appendix II sites, three borings were drilled to depths of 10 feet in the area of SWMU 39. Soil samples were collected at the surface and from depths of 2.5, 5 and 10 feet to characterize the distribution of potential contaminants. Field screening with a PID revealed a maximum reading of 21.0 ppm, indicating a potential for contamination during this investigation.

Two organics, acetone and toluene, and no metals were detected at low concentrations in the surface soil samples collected from at least one of the three borings. Two organics, acetone and toluene, and four metals, barium, chromium, lead, and nickel, were detected in at least one of the subsurface samples at low concentrations.

The Risk Assessment portion of the RFI report concluded that the detected concentrations of these chemicals were all within or below the acceptable excess carcinogenic and noncarcinogenic risk ranges. Based on the conclusions reached in the Risk Assessment for SWMU 39, the RFI recommended that an integrity test be performed on the OWS at this SWMU. As long as the unit passed the integrity test, NFA was recommended.

The Corrective Measure Completion Report documented the removal of the OWS at SWMU 39. The OWS was pumped dry and cleaned. The unit was then excavated without incident. No stained soil or odors were observed during the excavation activities. The removal of the OWS effectively rendered the RFI's recommendation for an integrity test moot.

One soil sample was then collected from each of the excavation's four walls, and two soil samples were collected from the bottom of the excavation, each at an approximate depth of 8.5 to 9 feet. A seventh, confirmatory sample was collected from the center of the excavation's bottom at approximately 9 feet of depth and sent for laboratory analysis. Results for soil samples analyzed by the laboratory were compared to the USEPA Region VI Human Health MSSSLs for residential soil to determine if a significant release had occurred in the area of SWMU 39. The Corrective Measure Completion Report concluded that no chemical releases posing an unacceptable human health risk for any potential exposure pathway had occurred at this SWMU. Therefore, NFA was recommended at SWMU 39.

The potential for groundwater contamination was considered minimal since the depth to groundwater is greater than 250 feet, and the soil sampling results demonstrate that contaminants were not transported significantly in a vertical direction beneath the SWMU.

Basis of Determination

SWMU 39 has been determined to be appropriate for NFA based on NMED NFA Criterion 5: The SWMU has been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected future land use.

12. SWMU 46, Oil/Water Separator No. 196

Location

SWMU 46, OWS No. 196, was located at the southwest corner of Building 196. The OWS measured approximately 7 feet by 9 feet in plan and extended 8.5 feet below the paved surface. The immediate area above the unit was paved with a layer of asphalt approximately 0.5 feet thick.

History

SWMU 46 was active from approximately 1969 until the unit was partially removed in 1996. The OWS was an underground concrete unit consisting of two compartments, a 560-gallon main compartment and a 135-gallon oil storage compartment. The unit reportedly received waste wash water generated from aircraft maintenance operations in Building 196, an aircraft maintenance hangar. Recovered oils were stored in the 135-gallon oil storage compartment and wastewaters were discharged to a sanitary sewer line.

Evaluation of Relevant Information

During a Phase I RFI of the Appendix III sites, three borings were drilled to depths of 10 feet in the area of SWMU 46. Soil samples were collected from the 0.5- to 2-foot, 2- to 4-foot, 4- to 6-foot, and 8- to 10-foot depth intervals to characterize the distribution of potential contaminants. No visual evidence of contamination was observed during this investigation.

Two metals, barium and antimony, were found at levels exceeding the corresponding RBCs. However, the detection of these metals was not attributable to contamination and reported concentrations were dismissed as naturally occurring. Based on this, the Phase I RFI recommended NFA for SWMU 46.

A Corrective Measure Completion Report documented the partial removal of the OWS at SWMU 46. The OWS at SWMU 46 was pumped dry and cleaned. Then the determination was made that the unit would only be partially removed, due to the presence of a 12-foot-diameter light pole foundation located adjacent to and within 15 inches of the unit. Two feet of soil were excavated from outside the walls of the unit, and the top 3 feet of the OWS were removed.

One soil sample was then collected from each of the four walls of the excavation at an approximate depth of 4 feet, and two soil samples were collected from holes drilled through the bottom of the unit at an approximate depth of 10 feet. A seventh, confirmatory sample was collected from the bottom of the excavation at approximately 10 feet and sent for laboratory analysis. Soil samples analyzed by the laboratory were compared to the USEPA Region VI Human Health MSSLS for residential soil to determine if a significant release had occurred in the area of SWMU 46. The Corrective Measure Completion Report concluded that no chemical releases posing an unacceptable human health risk for any potential exposure pathway had occurred at this SWMU. Therefore, no further response action was recommended at SWMU 46.

The potential for groundwater contamination was considered minimal since the depth to groundwater is greater than 250 feet, and the soil sampling results demonstrate that contaminants were not transported significantly in a vertical direction beneath the SWMU.

Basis of Determination

SWMU 46 has been determined to be appropriate for NFA based on NMED NFA Criterion 5: The SWMU has been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected future land use.

13. SWMU 47, Oil/Water Separator No. 494

Location

SWMU 47, OWS No. 494, consisted of an OWS unit located beneath an asphalt drive adjacent to the northeast wall of Building 494, the Auto Hobby Shop at Cannon AFB. A large sand trap was located at the east corner of the building. The OWS measured approximately 1 foot by 2.5 feet, and was estimated to extend less than 10 feet below the surface. The sand trap measured approximately 4 feet by 5 feet in plan, and extended approximately 4 feet below the surface.

History

SWMU 47 was active from approximately 1982 until its removal in 1996. The OWS was an underground concrete unit consisting of two compartments, a 50-gallon main compartment and a 50-gallon oil storage compartment. The units reportedly received waste wash water generated from personal vehicle maintenance operations by off-duty Air Force personnel in the Auto Hobby Shop. Recovered oils were stored in the 50-gallon oil storage compartment of the OWS and wastewaters were discharged to a sanitary sewer line.

Evaluation of Relevant Information

During a Phase I RFI of the Appendix III sites, three borings were drilled to depths of 10 feet in the area of SWMU 47. Soil samples were collected from the 0.5- to 2-foot (0- to 0.5-foot in one boring), 2- to 4-foot, 4- to 6-foot, and 8- to 10-foot depth intervals to characterize the distribution of potential contaminants. Two borings, drilled to depths of 10 feet in the area of the sand trap unit, were also sampled during the Phase I RFI. Soil samples were collected from the 0- to 0.5-foot, 1.5- to 3.5-foot, 4- to 6-foot, and 8- to 10-foot depth intervals to characterize the distribution of potential contaminants. No visual evidence of contamination was observed during this investigation.

The analyses detected insignificant concentrations of organic compounds and metals in the area of SWMU 47. None of the organics or metals were detected at concentrations exceeding the corresponding RBCs.

The Corrective Measure Completion Report documented the removal of the OWS and sand trap from SWMU 47. The OWS and the sand trap at SWMU 47 were pumped dry and cleaned. Two feet of soil were excavated from outside the walls and the units were removed without incident. No staining or odors were observed during the removal activities.

One soil sample was then collected from each of the four walls of the sand trap excavation at approximate depths of 7.5 feet, and two soil samples were collected from the bottom of the excavation at approximate

depths of 7.5 feet. A seventh, confirmatory sample was collected from the bottom of the excavation at approximately 7.5 feet and sent for laboratory analysis.

One soil sample was then collected from each of the four walls of the OWS excavation at approximate depths of 6 feet, and two soil samples were collected from the bottom of the excavation at approximate depths of 6 feet. A seventh, confirmatory sample was collected from the bottom of the excavation at approximately 6 feet and sent for laboratory analysis.

Soil samples analyzed by the laboratory were compared to the USEPA Region VI Human Health MSSLs for residential soil to determine if a significant release had occurred in the area of SWMU 47. Arsenic was the only compound that potentially exceeded the corresponding MSSL. However, the maximum possible concentration of arsenic fell below the established background levels for metals at Cannon AFB. The Corrective Measure Completion Report concluded that no chemical releases posing an unacceptable human health risk for any potential exposure pathway had occurred at this SWMU. Therefore, NFA was recommended for SWMU 47.

The potential for groundwater contamination was considered minimal since the depth to groundwater is greater than 250 feet, and the soil sampling results demonstrate that contaminants were not transported significantly in a vertical direction beneath the SWMU.

Basis of Determination

SWMU 47 has been determined to be appropriate for NFA based on NMED NFA Criterion 5: The SWMU has been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected future land use.

14. SWMU 51, Oil/Water Separator No. 375

Location

SWMU 51, OWS No. 375, consisted of an OWS unit and an oil containment vault. The OWS was located beneath 0.5 feet of asphalt pavement adjacent to the northwest side of Building 375, a vehicle maintenance facility within the motorpool compound at Cannon AFB. The OWS measured approximately 5 feet square, and extended approximately 5.5 feet below the surface. The oil containment vault was located beneath and integral to the floor and the northwest foundation wall of Building 375. The oil containment vault measured approximately 2 feet by 10 feet, and extended approximately 7 feet below the surface.

History

SWMU 51 was active from approximately 1968 until the separator unit was removed and the oil containment vault was abandoned in place in 1997. The units reportedly received waste wash water generated from vehicle maintenance operations. Recovered oils were stored in the oil containment vault and wastewaters were discharged to a sanitary sewer line

Evaluation of Relevant Information

During a Phase I RFI of the Appendix III sites, three borings were drilled to depths of 10 feet in the area SWMU 51. Soil samples were collected from the 0.5- to 2-foot, 2- to 4-foot, 4- to 6-foot, and 8- to 10-foot depth intervals to characterize the distribution of potential contaminants. The area of the oil containment vault was investigated during the Phase I RFI. No visual evidence of contamination was observed during this investigation.

Four organic compounds, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene), TPH and one metal, barium were found at levels exceeding the corresponding RBCs and/or other screening criteria. The highest concentrations of contaminants were detected in near-surface samples. The Phase I RFI recommended completing a BRA for SWMU 51.

The BRA for SWMU 51 included a human health and ecological risk assessment that considered both present and future potential receptors and all appropriate exposure pathways. Based on the results of the BRA, no unacceptable human health or ecological risks due to chemical releases were expected from SWMU 51. Therefore, NFA was recommended for SWMU 51.

A Corrective Measure Completion Report documented the removal of the OWS at SWMU 51. The OWS was pumped dry and cleaned. More than 2 feet of soil were excavated from outside the walls of the separator to accommodate the new unit, the old unit was then removed. Significant staining and odors were observed during the removal activities near the OWS's outlet pipe that led to the oil containment vault. After the old separator unit had been removed, it was replaced with a new OWS.

Holes were drilled in the bottom and side walls of the oil containment vault for sampling purposes. After the samples had been collected, the vault was filled with clean sand and capped with concrete. The vault was abandoned in place, not removed, in order to protect the integrity of Building 375.

Soil samples were collected from the base of the southeast and southwest walls of the OWS excavation at approximate depths of 9 feet. Two soil samples were collected from the bottom of the excavation, at locations northeast and northwest of the separator unit, at an approximate depth of 10 feet. One sample was collected from the base of the excavation in the area of stained soil at an approximate depth of 10 feet. A sixth sample was collected from the bottom of the excavation, beneath the footprint of the unit, at an approximate depth of 10 feet. A seventh, confirmatory sample was collected from the bottom of the excavation at approximately 10 feet.

Five soil samples were collected from three of the four walls and the base of the oil containment vault at approximate depths of 8 feet. (The fourth wall of the vault was the foundation wall of Building 375, and the sampling activities associated with the OWS unit had adequately investigated the other side of this wall.) A sixth, confirmatory sample was collected from the bottom of the excavation at approximately 8 feet. Soil samples analyzed by the laboratory were compared to the USEPA Region VI Human Health MSSSLs for residential soil to determine if a significant release had occurred in the area of SWMU 51. Although barium and selenium were both detected at maximum concentrations that exceeded the established background levels for Cannon AFB, arsenic was the only compound that potentially exceeded the corresponding MSSSL. However, the maximum possible concentration of arsenic fell below the established background levels for metals at Cannon AFB. The Corrective Measure Completion Report concluded that no chemical releases posing an unacceptable human health risk for any potential exposure pathway had occurred at this SWMU. Therefore, NFA was recommended for SWMU 51.

The potential for groundwater contamination was considered minimal since the depth to groundwater is greater than 250 feet, and the soil sampling results demonstrate that contaminants are not being transported significantly in a vertical direction beneath the SWMU.

Basis of Determination

SWMU 51 has been determined to be appropriate for NFA based on NMED NFA Criterion 5: The SWMU has been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected future land use.

15. SWMU 57, Oil/Water Separator No. 379

Location

SWMU 57, OWS No. 379, was located beneath the pavement adjacent to the southwest side of Building 379 at Cannon AFB. The OWS measured approximately 6.5 feet by 5 feet in plan and extended approximately 6 feet below the paved surface. The immediate area above the unit was paved with a layer of asphalt approximately 0.5 feet thick.

History

SWMU 57 was active from approximately 1965 until the unit was removed in 1996. The OWS was an underground concrete unit consisting of three compartments. The unit reportedly received waste wash water generated from heavy vehicle maintenance operations in Building 379. Recovered oils were stored in the oil storage compartment and wastewaters were discharged to a sanitary sewer line. After SWMU 57 had been completely removed, it was replaced with a new OWS unit.

Evaluation of Relevant Information

During a Phase I RFI of the Appendix III sites, three borings were drilled to depths of 10 feet in the area of the separator unit. Soil samples were collected from the 0.5- to 2-foot, 2- to 4-foot, 4- to 6-foot, and 8- to 10-foot depth intervals to characterize the distribution of potential contaminants. No visual evidence of contamination was observed during this investigation.

No metals and no organics at concentrations exceeding the corresponding RBCs were detected in the area of SWMU 57. Because there was no evidence of a significant release in the area of SWMU 57, the Phase I RFI recommended NFA at this SWMU.

A Corrective Measure Completion Report documented the removal of the OWS at SWMU 57. The OWS was pumped dry and cleaned. Two feet of soil were excavated from outside the walls of the unit, then the unit was removed without incident. One soil sample was collected from each of the four walls of the excavation at an approximate depth of 8 feet, and two soil samples were collected from the bottom of the excavation at an approximate depth of 8 feet. A seventh, confirmatory sample was collected from the bottom of the excavation at an approximate depth of 8 feet. Soil samples analyzed by the laboratory were compared to the USEPA Region VI Human Health MSSSLs for residential soil to determine if a significant release had occurred in the area of SWMU 57. The Corrective Measure Completion Report concluded

that no chemical releases posing an unacceptable human health risk for any potential exposure pathway had occurred at this SWMU. Therefore, NFA was recommended for SWMU 57.

The potential for groundwater contamination was considered minimal since the depth to groundwater is greater than 250 feet, and the soil sampling results demonstrate that contaminants were not transported significantly in a vertical direction beneath the SWMU.

Basis of Determination

SWMU 57 has been determined to be appropriate for NFA based on NMED NFA Criterion 5: The SWMU has been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected future land use.

16. SWMUs 61, 62, and 63, Sand trap 5077A and 5077B, and oil/water separator 5077 C

Location

SWMU 61, 62, and 63 are within Facility 5077 located in the Civil Engineering Squadron Compound at Cannon AFB. The exact depths of the three units are not known, but none are expected to be greater than 10 feet.

History

Facility 5077 is a vehicle wash rack that includes two 380-gallon sand traps (SWMUs 61 and 62) within the limits of the wash rack, and a 1,675-gallon OWS (SWMU 63). Both sand traps and the wash rack are constructed of concrete. The sand traps and the OWS reportedly received wash water generated by motor vehicle cleaning activities. SWMU 63 has been described as an OWS, but field observations noted that it was a single-compartment unit with no baffles. According to the Base Civil Engineering Office, the facility was seldom used and has been taken out of service.

Evaluation of Relevant Information

SWMUs 61, 62, and 63 have been listed as Appendix III sites. Because of their close proximity, the three SWMUs were investigated together during a Phase I RFI of the Appendix III sites. Low levels of organic compounds and metals were detected in the soil samples from SWMU 61 and SWMU 62. The chemicals detected were not at concentrations that exceeded the corresponding RBCs and/or other screening criteria.

Four organic compounds, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene and one metal, barium, were found at levels exceeding the corresponding RBCs at SWMU 63. However, the highest detected concentration of barium fell within the range of background concentrations for the site. The Phase I RFI recommended completing a BRA for SWMU 63, and NFA for SWMUs 61 and 62.

The BRA for SWMU 63 included a human health and ecological risk assessment that considered both present and future potential receptors and all appropriate exposure pathways. Based on the results of the BRA, no unacceptable human health or ecological risks due to chemical releases were expected from SWMU 63. Therefore, NFA was recommended for SWMU 63.

The potential for groundwater contamination was considered minimal since the depth to groundwater is greater than 250 feet, and the soil sampling results demonstrate that contaminants were not transported significantly in a vertical direction beneath the SWMUs.

Basis of Determination

SWMUs 61, 62, and 63 have been determined to be appropriate for NFA status based on NMED NFA Criterion 5: The SWMUs have been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants did not pose an unacceptable level of risk under current and projected land use.

17. SWMU 92, Oil/Water Separator No. 5120

Location

SWMU 92, OWS No. 5120 was formerly located east of Power Check Pad No. 5120 at Cannon AFB. The OWS consisted of a two-compartment underground unit with a detached 100-gallon oil storage tank. A leach well was located approximately 40 feet east of the OWS.

History

SWMU 92 was active from approximately 1957 to 1988. SWMU 92 reportedly received waste wash water generated from aircraft maintenance operations in Building 5120. Recovered oils were stored in the 100-gallon tank and the wastewaters were discharged to a leach well. SWMU 92 was no longer in service after the demolition of Building 5120 in 1988. The OWS and the associated leach well were removed in 1996.

Evaluation of Relevant Information

During a Phase I RFI of the Appendix III sites, five borings, two at depths of 10 feet in the area of the separator unit and three at depths of 60 feet in the area of the leach well, were drilled and sampled. Soil samples were collected from the 1.5- to 3.5-foot, 4- to 6-foot, and 8- to 10-foot depth intervals in all five borings. Additional samples were collected from the 18- to 20-foot, 28- to 30-foot, 38- to 40-foot, 48- to 50-foot, and 58- to 60-foot depth intervals in the three 60-foot borings to characterize the vertical distribution of potential contaminants.

Four organic compounds, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene and one metal, lead, were found at levels exceeding the corresponding RBCs. The highest concentrations of contaminants were detected in near-surface samples. The Phase I RFI recommended completing a BRA for SWMU 92.

The BRA for SWMU 92 included a human health and ecological risk assessment that considered both present and future potential receptors and all appropriate exposure pathways. Based on the results of the BRA, no unacceptable human health or ecological risks due to chemical releases were expected from SWMU 63. Therefore, NFA was recommended for SWMU 92.

A Corrective Measure Completion Report documented the removal of SWMU 92. The OWS at SWMU 92 was pumped dry and cleaned, then the leach well box and the top 2 feet of cobblestone were removed

from the associated leach well. No significant staining or odors were observed during the removal. The separator unit and the leach well were both removed routinely and without incident.

Soil samples were collected from the walls of the OWS excavation at approximate depths of 9 feet. Two soil samples were collected from the bottom of the excavation at an approximate depth of 10 feet. Soil samples were also collected from the walls of the leach well excavation at an approximate depth of 11 feet. An additional soil sample was collected from the bottom of the excavation at an approximate depth of 12 feet. Soil samples analyzed by the laboratory were compared to the USEPA Region VI Human Health MSSLs for residential soil to determine if a significant release had occurred in the area of SWMU 92. Arsenic was the only compound that potentially exceeded the corresponding MSSL. However, the maximum possible concentration of arsenic fell below the established background levels. The Corrective Measure Completion Report concluded that no chemical releases posing an unacceptable human health risk for any potential exposure pathway had occurred at this SWMU. Therefore, NFA was recommended for SWMU 92.

The potential for groundwater contamination was considered minimal since the depth to groundwater is greater than 250 feet, and the soil sampling results demonstrate that contaminants were not transported significantly in a vertical direction beneath the SWMU.

Basis of Determination

SWMU 92 has been determined to be appropriate for NFA based on NMED NFA Criterion 5: The SWMU has been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected future land use.

18. SWMU 94, Oil/Water Separator No. 5144

Location

SWMU 94, OWS No. 5144, was comprised of an OWS and two sand traps that served a two-bay vehicle washrack adjacent to the Army, Air Force Exchange Service (AAFES) service station, located east of the intersection of D.L. Ingram Street and Argentia Avenue at Cannon AFB. The OWS, which was located approximately 30 feet northeast of the two sand traps, was an underground concrete unit that reportedly received effluent from the neighboring sand traps. The OWS measured approximately 5 feet by 10 feet in plan, and extended approximately 9 feet below the surface. The two sand traps were each located in the approximate center of each of the two vehicle washracks. The sand traps measured approximately 3.5 feet by 8 feet in plan, and extended approximately 6.5 feet below the surface.

History

SWMU 94 was active from approximately 1960 until approximately 1988. The three units were removed in 1996. Recovered oils were stored in the unit and wastewaters were discharged to a sanitary sewer line. The OWS unit was a single-compartment unit with no baffles, and as such appeared to be a sand trap. However, because the unit was referred to as an OWS in earlier reports (including the Corrective Measure Completion Report, which documented the unit's removal), it is also referred to as an OWS herein. The sand traps reportedly received wash-down water from personal vehicle maintenance operations, and discharged effluent to the OWS.

Evaluation of Relevant Information

During a Phase I RFI of the Appendix III sites, six borings were drilled to depths of 10 feet and sampled. Soil samples were collected from the 0- to 0.5-foot, 1.5- to 3.5-foot, 4- to 6-foot, and 8- to 10-foot depth intervals from the borings drilled near the OWS. Samples were also collected from the 0.5- to 2-foot, 2- to 4-foot, 4- to 6-foot, and 8- to 10-foot depth intervals from the borings drilled near the sand traps. Minor soil staining was observed in two of the borings drilled near the sand traps during this investigation.

Four organic compounds, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene plus TPH, and three metals, antimony, barium, and beryllium were found at levels exceeding the corresponding RBCs and/or other screening criteria. The highest concentrations of organics were detected in near-surface samples. The highest concentration of barium was detected at approximately 4 feet in depth. However, the concentration of barium decreased to concentrations within the established background levels with depth. The Phase I RFI recommended completing a BRA for SWMU 94.

The BRA for SWMU 94 included a human health and ecological risk assessment that considered both present and future potential receptors and all appropriate exposure pathways. Based on the results of the BRA, no unacceptable human health or ecological risks due to chemical releases were expected from SWMU 94. Therefore, NFA was recommended for SWMU 94.

A Corrective Measure Completion Report documented the removal of the OWS at SWMU 94. The OWS and the two sand traps at SWMU 94 were pumped dry and cleaned. Stained soils were excavated from outside the walls of the westernmost sand trap during its removal. The other two units were removed routinely and without incident.

Soil samples were collected from the walls of the OWS excavation at an approximate depth of 8.5 feet. Two soil samples were collected from the bottom of the excavation at an approximate depth of 9 feet. A confirmatory sample was also collected from the bottom of the excavation. Soil samples were collected from the walls of the east sand trap excavation at an approximate depth of 6 feet. Two soil samples were collected from the bottom of the sand trap excavation at an approximate depth of 6.5 feet. Soil samples analyzed by the laboratory were compared to the USEPA Region VI Human Health MSSSLs for residential soil to determine if a significant release had occurred in the area of SWMU 94. Arsenic was the only compound that was detected at a concentration that exceeded the corresponding MSSSL. However, the maximum concentration of arsenic detected fell within the established background levels for metals at Cannon AFB. The report concluded that no unacceptable human health risks due to chemical releases were expected at this SWMU. Based on this, the Corrective Measure Completion Report recommended NFA for SWMU 94.

The potential for groundwater contamination was considered minimal since the depth to groundwater is greater than 250 feet, and the soil sampling results demonstrate that contaminants were not transported significantly in a vertical direction beneath the SWMU.

Basis of Determination

SWMU 94 has been determined to be appropriate for NFA based on NMED NFA Criterion 5: The SWMU has been characterized in accordance with the current applicable state and federal regulations,

and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected future land use.

19. SWMU 8, Oil/Water Separator No. 165

Location

SWMU 8, OWS No. 165, was located to the east of Facility 165 at Cannon AFB. The OWS measured approximately 21 feet by 12 feet in plan and extended approximately 10 feet below the surface. The top of the unit was approximately 1 foot above the surrounding ground surface.

History

SWMU 8 was active from approximately 1963 until the unit was partially removed in 1996. The OWS was an underground concrete unit that consisted of three compartments with a 4,500-gallon main compartment and a 710-gallon oil storage compartment. The unit reportedly received waste wash water generated from the aircraft washrack. Recovered oils were stored in the 710-gallon oil storage compartment and wastewaters were discharged to a sanitary sewer line.

Evaluation of Relevant Information

During an RFI of the Appendix II sites, three borings were drilled to a depth of 10 feet in the area of SWMU 8. Soil samples were collected at the surface and from depths of 2.5, 5 and 10 feet to characterize the distribution of potential contaminants. Field screening with a PID revealed evidence of slight contamination in one of the borings during this investigation.

No organics or metals were detected in the surface soil samples collected from the three borings. One organic compound, xylene and three metals, barium, chromium, and nickel were detected in at least one of the subsurface samples at low concentrations.

The Risk Assessment portion of the RFI report concluded that the detected concentrations of these chemicals were all within or below the acceptable excess carcinogenic and noncarcinogenic risk ranges. Based on the conclusions reached in the Risk Assessment for SWMU 8, the RFI recommended that an integrity test be performed on the OWS at this SWMU. As long as the unit passed the integrity test, NFA was recommended.

A Corrective Measure Completion Report documented the partial removal of SWMU 8. The OWS at SWMU 8 was pumped dry and cleaned. It was determined that the unit would only be partially removed, due to its proximity to the concrete washrack slab. All of the OWS, except the bottom, was removed, and the inlet and discharge pipes leading to and from the unit were disconnected and capped. The partial removal of the OWS effectively rendered the RFI's recommendation for an integrity test moot.

A soil sample was collected from beneath both the inlet and discharge pipes, one soil sample was also collected from both the east and the west walls of the excavation. Two soil samples were collected from holes drilled through the bottom of the unit each at an approximate depth of 12 feet. A seventh, confirmatory sample was also collected from the bottom of the excavation at approximately 12 feet. Soil samples analyzed by the laboratory were compared to the USEPA Region VI Human Health MSSSLs for residential soil to determine if a significant release had occurred in the area of SWMU 8. Arsenic was the

only compound detected in a concentration that exceeded the corresponding MSSL. However, the maximum concentration of arsenic detected fell within the established background levels for metals at Cannon AFB. The report concluded that no unacceptable human health risks due to chemical releases were expected at this SWMU. Based on this, the Corrective Measure Completion Report recommended NFA for SWMU 8.

The potential for groundwater contamination was considered minimal since the depth to groundwater is greater than 250 feet, and the soil sampling results demonstrate that contaminants were not transported significantly in a vertical direction beneath the SWMU.

Basis of Determination

SWMU 8 has been determined to be appropriate for NFA based on NMED NFA Criterion 5: The SWMU has been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected future land use.

20. SWMU 1, Oil/Water Separator No. 119

Location

SWMU 1, OWS No. 119, was located at the southwest corner of Building 119 at Cannon AFB. The OWS measured approximately 12 feet by 6 feet in plan and extended approximately 10 feet below the paved surface. The immediate area above the unit was paved with a layer of asphalt approximately 0.5 feet thick.

History

SWMU 1 was active from approximately 1963 until the unit was partially removed in 1996. The OWS was an underground concrete unit, which consisted of two compartments, a 700-gallon main compartment and a 260-gallon oil storage compartment. The unit reportedly received waste wash water generated from aircraft maintenance operations in Building 119, an aircraft maintenance hangar. Recovered oils were stored in the 260-gallon oil storage compartment and wastewaters were discharged to storm water drainage. All wash water now enters the sanitary sewer system and is treated at the Cannon AFB wastewater treatment plant (WWTP).

Evaluation of Relevant Information

During an RFI of the Appendix II sites, three borings were drilled to a depth of 10 feet in the area of SWMU 1. Soil samples were collected at the surface and from depths of 2.5, 5 and 10 feet to characterize the distribution of potential contaminants. Field screening with a PID revealed evidence of slight contamination during this investigation.

One organic, toluene and one metal, chromium were detected at low concentrations in the surface soil samples collected from all three borings. However, these compounds were not detected in any of the subsurface samples. One organic, acetone and two metals, mercury and nickel were detected in at least one of the subsurface samples at low concentrations.

The Risk Assessment portion of the RFI report concluded that the detected concentrations of these chemicals were all within or below the acceptable excess carcinogenic and noncarcinogenic risk ranges. Based on the conclusions reached in the Risk Assessment for SWMU 1, the RFI recommended that an integrity test be performed on the OWS at this SWMU. As long as the unit passed the integrity test, NFA was recommended.

A Corrective Measure Completion Report documented the partial removal of SWMU 1. The OWS at SWMU 1 was pumped dry and cleaned. It was determined that the unit would only be partially removed, due to the presence of an old high-pressure water line adjacent to the unit. The top 2 feet of the OWS were removed, and the unit's inlet and discharge pipes were disconnected and capped. The partial removal of the OWS effectively rendered the RFI's recommendation for an integrity test moot.

After partial removal of the OWS, one soil sample was collected approximately 2 feet beneath both the inlet and discharge pipes, one soil sample was collected from both the east and the west walls of the excavation, and two soil samples were collected from holes drilled through the bottom of the unit each at an approximate depth of 11 feet. A seventh, confirmatory sample was also collected from the bottom of the excavation, at approximately 11 feet. Soil samples analyzed by the laboratory were compared to the USEPA Region VI Human Health MSSLs for residential soil to determine if a significant release had occurred in the area of SWMU 1. Arsenic was the only compound that potentially exceeded the corresponding MSSL. However, the maximum possible concentration of arsenic fell below the established background levels for metals at Cannon AFB. The report concluded that no unacceptable human health risks due to chemical releases were expected at this SWMU. Based on this, the Corrective Measure Completion Report recommended NFA for SWMU 1.

The potential for groundwater contamination was considered minimal since the depth to groundwater is greater than 250 feet, and the soil sampling results demonstrate that contaminants were not transported significantly in a vertical direction beneath the SWMU.

Basis of Determination

SWMU 1 has been determined to be appropriate for NFA based on NMED NFA Criterion 5: The SWMU has been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected future land use.

21. SWMU 2, Recovered Diesel Tank No. 108

Location

An RFA described the suspected SWMU 2 location, Hangar 108 at Cannon AFB, as having a Recovered Diesel Tank connected to an OWS. Hangar 108 was demolished and replaced with Hangar 125 at Cannon AFB.

History

During the 1989 demolition of Hangar 108, a 2,000-gallon heating oil UST, not a Recovered Diesel Tank, was removed from the suspected SWMU 2 location, and the former UST location was covered with the concrete floor of the new hangar.

Evaluation of Relevant Information

A 2,000-gallon heating oil UST, located at Hangar 108, was removed from the suspected location of SWMU 2. Hangar 108, which was constructed during World War II, was demolished in 1989 and replaced with Hangar 125. The tank was removed and the former UST location was covered with the concrete floor of the new hangar. This UST was originally listed as an Appendix II site due to its misidentification as a Recovered Diesel Tank. Therefore, SWMU 2 never existed, and the 2,000-gallon heating oil UST has been removed from the suspected location of SWMU 2.

Groundwater at Cannon AFB has been located at a depth greater than 250 feet; as such, the area misidentified as SWMU 2 contained no means for groundwater discharges to occur.

Basis of Determination

SWMU 2 has been determined to be appropriate for NFA based on NMED NFA Criterion 1: SWMU 2 does not exist.

22. SWMU 3, Oil/Water Separator No. 108

Location

SWMU 3, OWS No. 108, was located to the west of former Hangar 125 at Cannon AFB. The precise location of the unit is unknown, but it is believed to have been located approximately 8 feet west and 96 feet south of the northwest corner of what is now Building 108.

History

SWMU 3 was active until approximately 1990 when the unit was removed during the demolition of Hangar 125. The size and construction of the OWS is unknown. In fact, it is unknown whether this unit was an OWS or a grease trap. However, because the unit was referred to as an OWS in previous reports, it will also be referred to as an OWS herein. The unit reportedly received wastewater from Building 102 and waste wash water generated from aircraft maintenance operations in Hangar 121. Wastewaters from the unit were discharged to a sanitary sewer line.

Evaluation of Relevant Information

During the Phase I RFI of the Appendix II sites, three borings were drilled to a depth of 10 feet in the area of SWMU 3. Soil samples were collected at the surface and from depths of 2.5, 5, and 10 feet. Field screening with a PID revealed potential evidence of slight contamination during this investigation.

One organic, toluene and two metals, chromium and nickel were detected at low concentrations in the surface soil samples collected from one or more borings. One organic, acetone and three metals, barium, mercury and nickel were detected in at least one of the subsurface samples at low concentrations.

The Risk Assessment portion of the Phase I RFI report concluded that the detected concentrations of these chemicals were all within or below the acceptable excess carcinogenic and noncarcinogenic risk ranges. Based on the conclusions reached in the Risk Assessment for SWMU 3, the Phase I RFI recommended NFA for SWMU 3.

A Phase II RFI of the Appendix II sites was also completed to evaluate whether a release of SWMU-related chemicals had occurred from SWMU 3 that could pose a significant risk to human health or the environment. In addition, the Phase II included a risk screening to verify whether the recommendation for NFA based on the Phase I RFI was appropriate for SWMU 3.

Three soil borings were drilled to a depth of approximately 20 feet in the area of SWMU 3 and 15 soil samples were collected and analyzed from these borings. The borings were drilled in a triangular pattern with each boring located approximately 15 feet from the presumed location of the SWMU. Surface soil samples were collected from the 0- to 2.0-foot depth interval in all three borings. Subsurface soil samples were also collected from each boring at the 3- to 5-foot, the 8- to 10-foot, the 13- to 15-foot, and the 18- to 20-foot depth intervals.

The maximum detected concentration of one organic compound, benzo(a)pyrene, exceeded the corresponding USEPA Region III RBC for residential soil. However, the risk evaluation portion of the Phase II RFI report concluded that the maximum detected concentration of this chemical was within the acceptable excess carcinogenic risk range. In addition, the maximum detected concentration did not exceed the RBC for industrial soil. Based on this, the Phase II RFI recommended NFA for SWMU 3.

The potential for groundwater contamination was considered minimal since the depth to groundwater is greater than 250 feet, and the soil sampling results demonstrate that contaminants were not transported significantly in a vertical direction beneath the SWMU.

Basis of Determination

SWMU 3 has been determined to be appropriate for NFA based on NMED NFA Criterion 5: The SWMU has been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected future land use.

23. SWMU 4, Recovered Diesel Tank No. 121

Location

An RFA described the suspected SWMU 4 location, Hangar 121 at Cannon AFB, as having a Recovered Diesel Tank connected to an OWS. Hangar 121 was demolished and replaced with Hangar 126 at Cannon AFB. The former UST location was covered with the concrete floor of Hangar 126.

History

During the 1989 demolition of Hangar 121, a 2,000-gallon heating oil UST, not a Recovered Diesel Tank, was removed from the suspected SWMU 4 location.

Evaluation of Relevant Information

A 2,000-gallon heating oil UST, located at Hangar 121, was removed from the suspected location of SWMU 4. This UST was originally listed as an Appendix II site due to its misidentification as a Recovered Diesel Tank. SWMU 4 never existed, and the 2,000-gallon heating oil UST has been removed from the suspected location of SWMU 4.

Groundwater at Cannon AFB has been located at a depth greater than 250 feet; as such, the area misidentified as SWMU 4 contained no means for groundwater discharges to occur.

Basis of Determination

SWMU 4 has been determined to be appropriate for NFA based on NMED NFA Criterion 1: SWMU 4 does not exist.

24. SWMU 5, Oil/Water Separator No. 121

Location

SWMU 5, OWS No. 121, was located to the west of former Hangar 121 at Cannon AFB. It is believed to have been located approximately 140 feet southwest of Building 123 and approximately 135 feet southeast of Building 112.

History

SWMU 5 was active until approximately 1990 when the unit was removed during the demolition of Hangar 121. The size and construction of the OWS is unknown. In fact, it is unknown whether this unit was an OWS or a grease trap. However, because the unit was referred to as an OWS in previous reports, it will also be referred to as an OWS herein. The unit reportedly received wastewater from Buildings 102 and 125 and waste wash water generated from aircraft maintenance operations in Hangar 121. Wastewaters from the unit were discharged to a sanitary sewer line.

Evaluation of Relevant Information

During the Phase I RFI of the Appendix II sites, three borings were drilled to a depth of 10 feet in the area of SWMU 5. Soil samples were collected at the surface and from depths of 2.5, 5, and 10 feet. Field screening with a PID revealed potential evidence of low levels of organic vapors during this investigation.

No organics or metals were detected in the surface soil samples collected from the three borings. One organic, acetone and three metals, barium, mercury and nickel were detected in at least one of the subsurface samples at low concentrations.

The Risk Assessment portion of the Phase I RFI report concluded that the detected concentrations of these chemicals were all within or below the acceptable excess carcinogenic and noncarcinogenic risk ranges. Based on the conclusions reached in the Risk Assessment for SWMU 5, the Phase I RFI recommended NFA for this SWMU.

During a Phase II RFI of the Appendix II sites three soil borings were drilled to a depth of approximately 20 feet and a fourth boring was drilled to a depth of approximately 34.5 feet in the area of SWMU 5. Surface soil samples were collected from the 0- to 2.0-foot depth interval in the three 20-foot borings. Subsurface soil samples were also collected from each of the three 20-foot borings at the 3- to 5-foot, the 8- to 10-foot, the 13- to 15-foot, and the 18- to 20-foot depth intervals. Subsurface soil samples were collected from the 34.5-foot boring at the 28- to 29-foot and the 33- to 34.5-foot depth intervals. The Phase II RFI of the Appendix II sites did not detect any chemicals at concentrations of potential concern at SWMU 5. Based on this, the Phase II RFI recommended NFA for SWMU 5.

The potential for groundwater contamination was considered minimal since the depth to groundwater is greater than 250 feet, and the soil sampling results demonstrate that contaminants were not transported significantly in a vertical direction beneath the SWMU.

Basis of Determination

SWMU 5 has been determined to be appropriate for NFA based on NMED NFA Criterion 5: The SWMU has been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected future land use.

25. SWMU 6, POL Tank No. 129

Location

An RFA described the suspected SWMU 6 location as Hangar 129 at Cannon AFB.

History

SWMU 6 was inaccurately described as having an inactive Petroleum, Oil, and Lubricants (POL) Tank connected to an OWS. This led to the UST being listed as an Appendix II site. A 2,000-gallon heating oil UST, not a POL Tank, was removed following NMED UST regulations.

Evaluation of Relevant Information

SWMU 6 was originally listed as an Appendix II site due to its misidentification as an Inactive POL Storage Tank. Because SWMU 6 never existed, NFA is recommended for SWMU 6.

Groundwater at Cannon AFB has been located at a depth greater than 250 feet; as such, the area misidentified as SWMU 6 contained no means for groundwater discharges to occur.

Basis of Determination

SWMU 6 has been determined to be appropriate for NFA based on NMED NFA Criterion 1: SWMU 6 does not exist.

26. SWMU 10, POL Tank No. 170

Location

An RFA described the suspected SWMU 10 location as Hangar 170 at Cannon AFB.

History

This SWMU was originally listed as an Appendix II site due to its misidentification as an Inactive POL Storage Tank. This led to the UST being listed as an Appendix II site.

Evaluation of Relevant Information

A 2,000-gallon heating oil UST, not a POL Tank, was removed following NMED UST regulations.

Groundwater at Cannon AFB has been located at a depth greater than 250 feet; as such, the area misidentified as SWMU 10 contained no means for groundwater discharges to occur.

Basis of Determination

SWMU 10 is proposed for NFA based on NMED NFA Criterion 1: SWMU 10 does not exist.

27. SWMU 16, Oil Water Separator No. 680

Location

SWMU 16, OWS No. 680, was formerly located near the southwest of Building 680 at Cannon AFB. The separator unit was replaced with a new OWS located approximately 15 feet east of SWMU 16.

History

SWMU 16 was active from approximately 1965 until approximately 1991 when the unit was removed during building renovations. The concrete OWS was a three-compartment unit with a 584-gallon main compartment and a 140-gallon oil storage compartment. The unit reportedly received wastewater generated from aircraft washing and maintenance operations.

Evaluation of Relevant Information

During a Phase I RFI of the Appendix II sites, three borings were drilled to a depth of 10 feet in the area of the former OWS unit. Soil samples were collected at the surface and from depths of 2.5, 5, and 10 feet to characterize the distribution of potential contaminants. Field screening with a PID revealed potential evidence of low levels of organic vapor during this investigation.

No organics or metals were detected in the surface soil samples collected from the three borings. One organic, acetone and three metals, barium, mercury, and nickel were detected in at least one of the subsurface samples at low concentrations.

The Risk Assessment portion of the Phase I RFI report concluded that the detected concentrations of these chemicals were all within or below the acceptable risk ranges. Based on the conclusions reached in the Risk Assessment for SWMU 16, the Phase I RFI recommended NFA for this SWMU.

A Phase II RFI of the Appendix II sites was planned for SWMU 16, but was not conducted because of the presence of a garage and numerous subsurface utilities in the area of the former location of this SWMU.

The potential for groundwater contamination was considered minimal since the depth to groundwater is greater than 250 feet, and the soil sampling results demonstrate that contaminants were not transported significantly in a vertical direction beneath the SWMU.

Basis of Determination

SWMU 16 has been determined to be appropriate for NFA based on NMED NFA Criterion 5: The SWMU has been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected future land use.

28. SWMU 34, AGE Drainage Ditch

Location

SWMU 34, the AGE Drainage Ditch at Cannon AFB, originates on the flightline side of AGE Building No. 186, runs parallel to Building Nos. 191 and 193 in a northeastern direction, and terminates at a culvert inlet near Argentina Avenue. SWMU 34 is approximately 1,200 feet long, 12 feet wide and 1 foot deep. The sloped sides are grass-covered above the active channel along the majority of the ditch's length.

History

SWMU 34 was reportedly formed by a railroad spur's compression of soil into a ditch formation. The railroad tracks were removed in the late 1960s, and storm water runoff has flowed through the ditch since then. Storm water runoff from the AGE Drainage Ditch flows under Argentina Avenue, via the culvert, to a second drainage ditch that routes the water to the NE Stormwater Drainage Area (SWMU 95). The AGE Drainage Ditch was identified as a potential SWMU during the RFA conducted for USEPA at Cannon AFB.

Evaluation of Relevant Information

During the Soil Removal Investigation, fifteen shallow soil borings were drilled using a hand auger and samples were collected for chemical analyses. The soil borings were drilled in the most discolored areas of the ditch, and samples were collected from 0- to 1-foot and 1-to 2-foot depth intervals. A total of 22 soil samples were collected.

None of the TCL VOCs were detected in any of the samples collected during the RI. None of the TCL SVOCs were detected at concentrations exceeding the Contract Required Quantitation Limits (CRQLs) in any of the samples collected during the RI. However, eleven PAH compounds were detected at estimated concentrations below the CRQLs in the near-surface samples. Based on this, these PAHs were considered COPCs. TPH was detected in near surface soil samples to a depth of 3 feet at a maximum concentration of 1,180 mg/kg.

Lead and zinc were detected above background levels in near surface samples. Based on this, lead and zinc were considered COPCs. All other metals detected were found at concentrations comparable to regional background levels, and were attributed to natural soil conditions in this area.

A BRA was conducted based on the results of the RI for SWMU 34. The BRA used validated soil data collected as part of the RI to identify and select COPCs for the quantitative characterization of risk at SWMU 34. Based on the results of the BRA, no unacceptable human health or ecological risks due to chemical releases were expected from this SWMU. Therefore, NFA was recommended for SWMU 34.

The potential for groundwater contamination was considered minimal since the depth to groundwater is greater than 250 feet, and the soil sampling results demonstrate that contaminants were not transported significantly in a vertical direction beneath the SWMU.

Basis of Determination

SWMU 34 has been determined to be appropriate for NFA based on NMED NFA Criterion 5: The SWMU has been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected future land use.

29. SWMU 48A, Underground Waste Oil Tank

Location

SWMU 48A, Underground Waste Oil Tank, was a 20,000-gallon UST located approximately 125 feet east of the intersection of Argentina Avenue and Torch Boulevard at Cannon AFB. The UST was used to store waste products prior to its removal in 1988. The area currently is paved and used as a parking lot. The depth to the former tank is unknown.

History

SWMU 48A was active from 1941 to 1985. Historically, the site was used as a gas station from 1941 to 1965. From 1965 to 1985, the tank was used to store waste products, including: waste oils, spent solvents, paint thinners, and recovered fuels. These products were removed from the tank periodically. The UST and its associated piping were removed in 1988.

Evaluation of Relevant Information

During a Phase I RFI of the Appendix II sites, three soil borings were drilled to depths of approximately 40 feet in the area of the former UST. Two of the borings were drilled at each end of the presumed location of the former tank. The third boring was approximately 20 feet northeast of the presumed location of the former UST.

Surface soil samples were collected from the 0- to 0.5-foot depth interval in one boring, from the 0.5- to 2.5-foot depth interval in another boring, and from the 0- to 2.0-foot depth interval in the third boring. Subsurface soil samples were also collected from each boring at the 3- to 5-foot, the 8- to 10-foot, the 13- to 15-foot, the 18- to 20-foot, the 23- to 25-foot, the 28- to 30-foot, the 33- to 35-foot, and the 38- to 40-foot depth intervals.

Ethylbenzene, toluene, and xylenes were detected in one Phase I boring at 10- and 20-foot depth intervals. The concentration of xylene was 100 ppm at 20 feet. Metals were detected above background levels in surface and subsurface samples to a maximum depth of 20 feet in all three borings.

Although metals were detected above background concentrations during this investigation, the recommendations section of the Phase I RFI report stated that, "The risk assessment associated with this SWMU indicates minimal or no risk to human health or the environment." Therefore, the Phase I RFI report recommended NFA for SWMU 48A.

A Phase II RFI of the Appendix II sites also found elevated levels of six metals and TRPH in the area of this SWMU. However, the report documenting this investigation noted that none of the concentrations of the chemicals detected at SWMU 48A pose an unacceptable human health risk. The Phase II RFI report recommended no further investigation at this site.

A Corrective Measures Study (CMS) was also completed for SWMU 48A. The mathematical models used for the CMS included the Hydrologic Evaluation of Landfill Performance (HELP) Model, Version 3.01 and the Multimedia Exposure Assessment Model (MULTIMED) Version 2.00.

The results of the human health and ecological risk evaluations conducted during the CMS at SWMU 48A indicated that there was minimal risk to human health and the environment. Based on the maximum concentrations of COCs detected, and the results of vadose zone fate and transport modeling at SWMU 48A, an NFA alternative was recommended.

Basis of Determination

SWMU 48A has been determined to be appropriate for NFA based on NMED NFA Criterion 5: The SWMU has been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected future land use.

30. SWMU 48B, Aboveground Overflow Capacity Tank

Location

SWMU 48B, Aboveground Overflow Capacity Tank, was a 2,000-gallon aboveground storage tank (AST) located approximately 125 feet east of the intersection of Argentina Avenue and Torch Boulevard at Cannon AFB. This SWMU and SWMU 48A were located adjacent to each other within a fenced area measuring approximately 20 feet by 40 feet in plan.

History

The former AST at SWMU 48B was active from 1941 to 1985. Historically, the site was used as a gas station from 1941 to 1965. From 1965 to 1985 the AST served as an overflow tank for the UST (SWMU 48A), which had been used to store waste products including: waste oils, spent solvents, paint thinners, and recovered fuels. These products were removed from the tanks periodically. The AST and its associated piping were removed in 1992. The area currently is paved and used as a parking lot.

Evaluation of Relevant Information

During a Phase I RFI of the Appendix II sites at SWMU 48B, two borings were advanced to a depth of 30 feet and soil samples were collected. Acetone, xylenes and methylene chloride were detected at low concentrations in one Phase I boring at the surface and at the 5-foot interval. Metals were detected above background levels in surface and subsurface samples to a maximum depth of 20 feet in both borings. The results of a limited risk assessment, performed as part of this investigation, indicated minimal or no risk to human health or the environment from SWMU 48B.

During a Phase II RFI of the Appendix II sites. Two soil borings were drilled to a depth of approximately 40 feet in the area of the former AST. Surface soil samples were collected from the 0- to 0.5-foot depth interval in one boring and from the 0.5- to 2.5-foot depth interval in the other boring. Subsurface soil samples were also collected from each boring at the 3- to 5-foot, the 8- to 10-foot, the 13- to 15-foot, the 18- to 20-foot, the 23- to 25-foot, the 28- to 30-foot, the 33- to 35-foot, and the 38- to 40-foot depth intervals.

Six organic compounds and five metals were detected during the Phase II RFI. However, none of the concentrations of organics exceeded the associated RBCs, and none of the concentrations of metals exceeded the associated background levels or the RBCs. Compounds detected were either detected at very low levels, or the concentrations decreased with depth. Because there were no unacceptable health risks associated with SWMU 48B, the Phase II RFI recommended that no further investigation was necessary for this SWMU.

The area of SWMU 48B has been covered with asphalt pavement and is being used as a parking lot. Based on this, SWMU 48B did not contain any significant ecological component such that a formal ecological risk assessment was warranted. However, the results of a limited risk assessment, performed as part of Phase I RFI, indicated minimal or no risk to the environment from SWMU 48B.

The potential for groundwater contamination was considered minimal since the depth to groundwater is greater than 250 feet, and the soil sampling results demonstrate that contaminants were not transported significantly in a vertical direction beneath the SWMU.

Basis of Determination

SWMU 48B has been determined to be appropriate for NFA based on NMED NFA Criterion 5: The SWMU has been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected future land use.

31. SWMU 49, Inactive POL Storage Tank No. 4028a

Location

This SWMU never existed at Cannon AFB. The RFA description of this site was identical to the description given for SWMU 48A, an underground waste oil tank. This apparently was an accidental duplication.

History

SWMU 49 was originally listed as an Appendix II site due to its misidentification as an Inactive POL Storage Tank.

Evaluation of Relevant Information

No storage tanks, underground or aboveground, were ever located in the area of Cannon AFB misidentified as SWMU 49. This SWMU was originally listed as an Appendix II site due to its misidentification as an Inactive POL Storage Tank.

Basis of Determination

SWMU 49 has been determined to be appropriate for NFA based on NMED NFA Criterion 1: SWMU 49 is a duplicate of SWMU 48A.

32. SWMU 50, Inactive POL Storage Tank No. 4028b

Location

This SWMU never existed at Cannon AFB. The RFA description of this site was identical to the description given for SWMU 48A, an underground waste oil tank. This apparently was an accidental duplication.

History

SWMU 50 was originally listed as an Appendix II site due to its misidentification as an Inactive POL Storage Tank.

Evaluation of Relevant Information

No storage tanks, underground or aboveground, were ever located in the area of Cannon AFB misidentified as SWMU 50. This SWMU was originally listed as an Appendix II site due to its misidentification as an Inactive POL Storage Tank.

Basis of Determination

SWMU 50 has been determined to be appropriate for NFA based on NMED NFA Criterion 1: SWMU 50 does not exist.

33. SWMU 55, Lead Acid Battery Accumulation Point

Location

SWMU 55, the Lead Acid Battery Accumulation Point, consisted of a square of asphalt pavement measuring approximately 8 feet by 8 feet. The SWMU was located approximately 100 feet north of the Vehicle Maintenance Shop, Building 379 at Cannon AFB. The pavement was contiguous with an asphalt parking lot and sloped slightly toward the northwest.

History

SWMU 55 was active from approximately 1965 until sometime between the field investigation associated with the Phase I RFI (1993) and the field investigation associated with the Phase II RFI (1997). Used lead acid batteries were stored "wet" on pallets at the SWMU until enough had been accumulated to sell to a battery recycling company.

Evaluation of Relevant Information

During a Phase I RFI of the Appendix III sites, three borings were drilled to maximum depths of 20 feet in the area of the asphalt pad. Soil samples were collected from the 0.5- to 2-foot, 3- to 5-foot, 8- to 10-

foot, 13- to 15-foot, and 18- to 20-foot depth intervals to characterize the distribution of potential contaminants. No visual evidence of contamination was observed during this investigation.

Lead was detected at concentrations exceeding the established background levels at SWMU 55. However, the detected concentrations of lead did not exceed the corresponding RBCs or other risk screening criteria.

During a Phase II RFI, three borings were drilled to depths of 20 feet in the area of SWMU 55. Soil samples were collected from the 0- to 2-foot, 3- to 5-foot, 8- to 10-foot, 13- to 15-foot, and 18- to 20-foot depth intervals. No visual evidence of contamination was observed during this investigation.

Three metals, aluminum, barium and zinc were detected at concentrations slightly exceeding the established background levels for Cannon AFB. However, none of these metals exceeded the corresponding RBCs. Five organic compounds, all PAHs, were detected at concentrations exceeding the corresponding RBCs or other risk screening criteria. Because there was no evidence of a significant release in the area of SWMU 55, the Phase II RFI recommended NFA at this SWMU.

An ecological risk screening was not included as part of the Phase I RFI or the Phase II RFI, but a human health risk screening was included in these investigations. In each investigation, the screening criteria were not exceeded by detected chemical concentrations attributable to SWMU contamination. The Region III RBCs, used as screening criteria, are highly conservative, and as such are protective of human health and the environment.

The potential for groundwater contamination was considered minimal since the depth to groundwater is greater than 250 feet, and the soil sampling results demonstrate that contaminants were not transported significantly in a vertical direction beneath the SWMU.

Basis of Determination

SWMU 55 has been determined to be appropriate for NFA based on NMED NFA Criterion 5: The SWMU has been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected future land use.

34. SWMU 72, Oil/Water Separator No. 390

Location

An RFA mistakenly identified a 2,000-gallon recovered JP-4 UST as OWS No. 390. This led to the site being identified as SWMU 72.

History

The UST, which is actually SWMU 71, was removed in April 1991 and replaced with a 2,000-gallon steel OWS enclosed in a concrete vault.

Evaluation of Relevant Information

SWMU 72 was a duplicate of SWMU 71, and the 2,000-gallon UST at SWMU 71 has been removed. This OWS is not SWMU 72.

Basis of Determination

SWMU 72 has been determined to be appropriate for NFA based on NMED NFA Criterion 1: This SWMU 72 is a duplicate of SWMU 71.

35. SWMU 75, Sanitary Sewage Lift Station Overflow Pit

Location

SWMU 75, the Sanitary Sewage Lift Station Overflow Pit, served as an emergency overflow containment area for a lift station in the northwest area of Cannon AFB Base. The pit measured approximately 100 by 600 by 3 feet, or approximately 6,700 cubic yards.

History

The pit was used once in February 1983 when 100,000 to 150,000 gallons of raw domestic sewage were bypassed to the pit when the lift pumps failed. The only hazardous wastes present in this overflow would have been from the domestic sewage. The lift pumps were repaired approximately one week later, and the sewage was cycled through the lift station. Since the original IRP investigation, this area has been rebuilt twice to improve drainage around the old golf course and to create new water hazards for the new section of the golf course. Therefore, no remnants of this pit exist.

Evaluation of Relevant Information

In October 1990, USEPA Region VI concluded that the Sanitary Sewage Lift Station Overflow Pit warranted NFA because the release at this site was an accidental spill and therefore, did not qualify as an SWMU. Accidental spills are not included in the definition of a SWMU as defined in the following excerpt from the USEPA RFA Guidance: "The definition does not include accidental spills from production areas and units in which wastes have not been managed (e.g., product storage areas)."

Basis of Determination

SWMU 75 has been determined to be appropriate for NFA based on NMED's NFA Criterion 2: This SWMU has never been used for the management (i.e., generation, treatment, storage and/or disposal) of RCRA solid waste or hazardous wastes and/or other constituents or other Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) hazardous substances.

36. SWMU 76, Sludge Weathering Pit (WP-14)

Location

SWMU 76, the Sludge Weathering Pit, covered approximately 200 square feet. This relatively flat SWMU was located near Building 326 and adjacent to the northern boundary of Cannon AFB.

History

SWMU 76, last used in 1980, was used to weather sludge from leaded gasoline storage tanks during the 1960s and 1970s. The sludge was landfilled after it was sufficiently weathered.

Evaluation of Relevant Information

During the RI at SWMU 76, four soil borings were drilled. Two surface samples were collected from three of the borings at depth intervals of 0 to 0.5 feet. Additionally, nine subsurface soil samples were collected from the four borings at depth intervals ranging from 4 to 31 feet.

A BRA, performed using the results of the RI, was included in the RI report. The BRA assessed potential adverse human health and ecological effects by comparing soil data to risk-based RFI criteria listed in the RFI Guidance, Volume I, or if these levels were exceeded, by calculating site-specific health risks. The COCs for SWMU 76 were identified as lead (despite being detected at concentrations below regional background levels), ethylbenzene, and xylenes. However, since a USEPA-verified toxicity value for lead had not been established, the quantitative evaluation of human health impacts at this site were limited to ethylbenzene and xylenes. None of these COCs are classified as carcinogenic chemicals. All hazard indices and hazard quotients for subchronic and chronic exposures to site COCs fell well below the USEPA's level of concern (<1.0) for noncarcinogenic effects. This indicated that no unacceptable risk was expected. The BRA concluded that potential impacts to human health and the environment were insignificant at SWMU 76.

Ethylbenzene and xylenes were detected in a single boring at a depth interval of 8 to 10 feet at estimated concentrations of 4,000 µg/kg and 7,900 µg/kg, respectively. These compounds may have also been present in a second boring at the same depth, and also in a third boring at a depth of 4 to 6 feet, but their presence was potentially masked by the elevated detection limits discussed above. Lower levels of organics were also detected in the samples analyzed at intervals up to 18 feet in depth.

Mercury was the only metal detected at levels of potential concern. The maximum detected concentration of mercury was 0.85 mg/kg from a 25-foot depth interval. Organic lead was detected at very low levels. Inorganic lead was found at concentrations exceeding the background levels established for Cannon AFB. However, both the maximum concentration of lead detected at SWMU 76 (12.6 mg/kg) and the background levels for lead were below the applicable USEPA Generic Soil Screening Level of 400 mg/kg. Based on the analytical results from this investigation, the RI report recommended that NFA was required at SWMU 76.

Basis of Determination

SWMU 76 has been determined to be appropriate for NFA based on NMED NFA Criterion 5: The SWMU has been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected future land use.

37. SWMU 77, Civil Engineering Container Storage Area

Location

SWMU 77, Civil Engineering Container Storage Area (Facility No. 4038), is located east of Building 252 and south of the northern boundary fence of Cannon AFB. The Container Storage Area consists of a concrete pad measuring approximately 150 feet by 250 feet, surrounded by an 8-foot-high fence with a locked gate. The fenced pad area is surrounded by gravel on the east and south sides. The site is relatively flat.

History

The concrete pad at SWMU 77 is the remaining floor of the former Portair Airfield Hangar, which dates back to the 1930s. This facility served as passenger terminal for the former Portair Airfield until the building was removed by the U.S. Army in 1942. Based on historical photographs, the concrete pad was vacant until the 1970s, when it began to be used for storage. Approximately one hundred 55-gallon drums were stored at this SWMU at the time of the RFA Visual Site Inspection. A preliminary site inspection referenced in the RFA Visual Site Inspection report stated that the drums contained varying amounts of water, oil, solvents, and asphaltic material.

Evaluation of Relevant Information

A Phase I RFI was performed at SWMU 77 to determine if a release of SWMU-related chemicals had occurred due to leakage of stored materials and equipment. A total of six borings were advanced to a depth of 20 feet below the surface to determine the vertical extent of potential contamination. Two of the borings were drilled through the paved surface of the pad, and the other four were drilled just off the edges of the pad at visible drainage locations. Samples were collected from the 0.2- to 0.5-foot depth interval in areas of exposed soil to provide surface soil data for risk assessment purposes. Other near-surface samples were collected immediately beneath the concrete pad from the 0.5- to 2-foot depth interval. Subsurface soil samples were collected from the 3- to 5-foot, 8- to 10-foot, 13- to 15-foot, and 18- to 20-foot depth intervals to characterize the vertical distribution of potential contaminants. No visual evidence of contamination was noted during the sampling process.

One metal, five organic compounds, and TRPH were found at levels exceeding the corresponding RBCs or background levels. The highest concentrations of organics and metals were detected in surface and near-surface samples. The Phase I RFI recommended completing a BRA for SWMU 77.

No additional sampling data was collected as part of the BRA. However, a human health and ecological risk assessment that considered both present and future potential receptors, and all appropriate exposure pathways, was performed using the data collected during the Phase I RFI. Based on the results of the BRA, no unacceptable human health or ecological risks due to chemical releases were expected from this SWMU. Therefore, NFA was recommended at this SWMU.

During a Phase II RFI, five soil borings were drilled to 20-foot depth intervals in the area surrounding SWMU 77. The boring locations were chosen to further assess the lateral presence and extent of site-related soil contaminants. Surface soil samples were collected from each boring at the 0- to 2-foot depth interval. Subsurface soil samples were also collected from each boring at the 3- to 5-foot, the 8- to 10-foot, the 13- to 15-foot, and the 18- to 20-foot depth intervals.

The Phase II RFI sampling results confirmed that contamination in the area of SWMU 77 was confined mainly to the top 5 feet of soil. Eight metals detected during the Phase II RFI exceeded the background levels, and six of these metals exceeded the levels detected during the Phase I RFI. Nine organic compounds also exceeded Phase I concentrations. Of the analytes that exceeded the Phase I concentrations, only one metal, manganese, and one organic compound, Arochlor-1260 exceeded residential RBCs. Based on the results of the Phase II RFI, the vertical extent of contamination appeared to be defined, and potential impacts to groundwater were considered low. Because there were no unacceptable health risks associated with SWMU 77, the Phase II RFI recommended that no further investigation was necessary for this SWMU.

During a CMS, nine soil borings were drilled at SWMU 77 to 5-foot depth intervals. These borings were all located near three borings that had been drilled during the Phase II RFI to further assess the lateral presence and extent of site-related soil contaminants.

Surface soil samples were collected from each boring at the 0- to 0.5-foot depth interval. Surface soil samples for VOC analysis were collected from each boring at 0.5-to 1.0-foot depth intervals. Subsurface soil samples were also collected from each boring from a 1-foot interval, generally between 2 and 5 feet in depth.

Low concentrations of organic compounds were detected in several samples collected at SWMU 77 during the field investigation portion of the CMS. However, none of these compounds were detected at concentrations exceeding the residential RBCs.

Results of the human health and ecological risk evaluations indicated that there was no unacceptable risk to human health and the environment based on the maximum detected concentrations of COCs in the soil at SWMU 77. In addition, results of the vadose zone fate and transport modeling showed, assuming sorption, dispersion and biodegradation occurred, that the COCs would not reach groundwater above the maximum allowable concentrations for drinking water. The risk evaluations, combined with the modeling, were used to determine that the NFA alternative would be protective of human health and the environment at the lowest cost.

Basis of Determination

SWMU 77 has been determined to be appropriate for NFA based on NMED NFA Criterion 5: The SWMU has been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected future land use.

38. SWMU 78, Fire Department Training Area No. 1

Location

SWMU 78, Fire Department Training Area No. 1, covers approximately 0.2 acres in the northeast corner of Cannon AFB, south of the railroad tracks and northeast of Perimeter Road.

History

SWMU 78 was used twice monthly from 1959 to 1968, when approximately 300 gallons of waste oils, solvents, and fuels were poured on the ground surface to create fires. According to a Phase I IRP Records Search, the potential existence of hazardous contaminants at Fire Department Training Area No. 1 was evaluated by reviewing existing information, including installation records.

Evaluation of Relevant Information

During the RI, two soil borings were drilled and samples were originally collected for chemical and geotechnical analyses. Soil samples were collected at depths of 4, 10, 20, 30, 40, 50, 60, 70, 75, and 100. Samples were also collected at depths of 35 and 75 feet in one boring and samples were collected at depths of 14, 55, and 90 feet in the second boring for geotechnical gradation analysis.

One additional boring was drilled and sampled because the laboratory missed the holding times for the TCL VOCs and/or TPH. The samples, collected from this boring to depths of 100 feet, were analyzed for TCL VOCs and/or TPH, depending on which holding times had been missed for each boring.

Six surface samples were also collected from locations near each of the borings, from three additional locations within the SWMU boundary, and from one location outside the SWMU boundary, at depth intervals of 0 to 0.5 feet. Surface sample locations were selected based on the presence of sparse vegetation, noticeable debris, or visible staining.

Six additional surface samples were also collected because the laboratory missed the holding times for the TCL VOCs and/or TPH. These surface samples were analyzed for TCL VOCs and/or TPH, depending on which holding times had been missed for each sample.

The pesticide 4,4-DDD was detected in surface samples at a maximum concentration of 2,000 $\mu\text{g}/\text{kg}$, and was detected in subsurface samples from one boring at a maximum depth of 12 feet. The pesticide 4,4-DDE was also detected in surface samples at a maximum concentration of 110 $\mu\text{g}/\text{kg}$. The detection of these pesticides was attributed to the possible presence of pesticides in the fuel mixtures used in past fire training exercises, or the possibility that pesticides were applied to the SWMU to ward off pests during training activities. The high soil/water partition coefficient for pesticides indicates that these compounds have been retained on soil particles, thus retarding their migration to deeper soils.

TPH was detected in surface samples at a maximum concentration of 4,080 mg/kg , and was detected in one subsurface sample at a depth of 4 feet.

Lead and zinc were detected in surface samples at maximum concentrations of 529 mg/kg and 829 mg/kg , respectively. Lead was also detected in subsurface samples at a concentration of 25.0 mg/kg at a depth of 20 feet in one boring. These results correlate with the results of the Phase II investigation that detected lead at concentrations as high as 28 mg/kg at depths of 47.5 to 48.6 feet. All other metals detected were found at concentrations comparable to regional background levels and were attributed to natural soil conditions in this area.

A BRA, performed using the results of the RI, was included in the RI report. The BRA assessed potential adverse human health and ecological effects by comparing soil data to risk-based RFI criteria and to

proposed RCRA action levels, or by calculating site-specific health risks. The BRA concluded that potential impacts to human health and the environment were insignificant at SWMU 78.

The maximum concentration of lead detected at SWMU 78 was 529 mg/kg in surficial soil. The surface soil lead 95 percent upper confidence limit for the SWMU 78 risk assessment area was calculated as 411 mg/kg, a number that fell below the USEPA interim guidance for residential soil lead cleanup levels (500 to 1,000 mg/kg). Therefore no unacceptable risk was expected due to the presence of lead at this SWMU.

The potential for groundwater contamination was considered minimal since the depth to groundwater is greater than 250 feet, and the soil sampling results demonstrate that contaminants are not being transported significantly in a vertical direction beneath the SWMU.

Basis of Determination

SWMU 78 has been determined to be appropriate for NFA based on NMED NFA Criterion 5: The SWMU has been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected future land use.

39. SWMU 79, Underground Storage Tank

Location

An RFA describes SWMU 79, Underground Storage Tank, as a 2,000-gallon UST located at Fire Department Training Area No. 1 (SWMU No. 78).

History

There is no record, other than the RFA, of any storage tanks, either underground or aboveground, in the area of SWMU 79. A thorough records search and several personnel interviews have failed to document the existence of this tank. This SWMU cannot be located or does not exist.

Evaluation of Relevant Information

Because a thorough records search and several personnel interviews failed to document the existence of this tank, and because the site was eventually removed from the SWMU list when USEPA Region VI approved the Appendix II, Phase I RFI Work Plan in March 1992, NFA is recommended for SWMU 79.

Basis of Determination

SWMU 79 has been determined to be appropriate for NFA based on NMED NFA Criterion 1: SWMU 79 cannot be located or does not exist.

40. SWMU 81, Solvent Disposal Site

Location

SWMU 81, Solvent Disposal Site, was described as being located approximately 300 feet east of Fire Training Area No. 1 and approximately 100 feet south of the north installation fence. However, the site could not be located during the preparation of the RFA in 1987 or during the site visit performed as part of the preparation of the Appendix I, Phase I RFI Work Plan.

History

SWMU 81 was first identified in the 1983 IRP Phase I Records Search as two empty drums labeled "trichloroethylene" lying on the ground. The drums had been positioned in such a way that they would have drained into a shallow pit.

Evaluation of Relevant Information

There is no record, other than the RFA, of any storage tanks, either underground or aboveground, associated with SWMU 81. Because SWMU 81 could not be located during the preparation of the RFA in 1987, or during the site visit performed as part of the preparation of the Appendix I, Phase I RFI Work Plan, NFA is recommended for SWMU 81.

Basis of Determination

SWMU 81 has been determined to be appropriate for NFA based on NMED NFA Criterion 1: SWMU 81 cannot be located or does not exist.

41. SWMU 82, Landfill No. 2

Location

SWMU 82, Landfill No. 2, is an inactive, unlined, cut-and-fill landfill occupying approximately 15 acres in the northeast corner of Cannon AFB. This essentially flat SWMU slopes gently to the northwest. Based on a review of historical aerial photographs, Landfill No. 2 was found to consist of two distinct portions. The first (eastern) portion trended in a north-south direction, and the second (western) portion trended in an east-west direction.

History

SWMU 82 accepted wastes from 1946 to 1947 and from 1952 to 1959. The temporary period of inactivity occurred while Cannon AFB was on deactivated status. The landfill's operation apparently consisted of placing waste in trenches and burning it before burying it. The site reportedly received domestic solid wastes and shop wastes, which included waste oils and solvents, paint strippers and thinners, outdated paint, pesticide containers, and various empty cans and drums.

Evaluation of Relevant Information

An RFI was performed at SWMU 82 to determine whether a release of landfill-related chemicals had occurred. An electromagnetic geophysical survey was completed using a Geonics EM-31. The results of

both surveys were interpreted, and the anomalies encountered were determined to be indicative of the presence of landfill cells.

Based on these results, a subsurface soil investigation was designed. A trench approximately 28 feet long, 8 feet wide, and 7 feet deep was dug to investigate an area that appeared to be a landfill cell. After the landfill's cap was removed, landfilled materials were excavated and a field screening was performed using an organic vapor analyzer (OVA). No OVA readings above background levels were detected, so the landfilled materials and the clay cap were replaced. The landfill material encountered during the RFI included construction debris and domestic waste. No liquid wastes or soils saturated with liquid wastes were encountered during the field activities.

During the RFI, 27 borings were drilled and subsurface soil samples from 15 of the borings were collected and submitted for chemical analyses. The borings were advanced to depths ranging from 75.5 to 76 feet below the surface. Five surface samples were also collected from depths of 0 to 0.5 feet below ground surface. Geotechnical gradation analysis was also performed on 44 subsurface soil samples and one surface soil sample.

One VOC, toluene, two SVOCs, pyrene and pentachlorophenol, one herbicide, MCP, one pesticide, 4,4'-DDT, and one metal, barium were detected at concentrations of potential concern during the RFI at SWMU 82. All other compounds detected were excluded from concern because they were detected below the associated background levels in the case of metals, because they were considered to be a laboratory contaminant in the case of organic compounds, or because they did not have risk screening criteria.

The BRA performed as part of this investigation indicated that this SWMU did not pose an unacceptable level of risk to human health. Based on the results of a BRA performed as part of this investigation, the RFI report recommended NFA for SWMU 82.

The potential for groundwater contamination was considered minimal since the depth to groundwater is greater than 250 feet, and the soil sampling results demonstrate that contaminants are not being transported significantly in a vertical direction beneath the SWMU.

Basis of Determination

SWMU 82 has been determined to be appropriate for NFA based on NMED NFA Criterion 5: The SWMU has been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected future land use.

42. SWMU 83, Sump

Location

SWMU 83, Sump, was located approximately 90 feet northwest of Building 120 at Cannon AFB. The depth to the former sump, which had been constructed in a 12- by 14-foot concrete pad, is unknown. A portion of the sump's former location has been paved.

History

The installation date and initial use date of SWMU 83 are unknown. The sump was removed in 1993. Historically, the sump received rainwater, wash water, and dilute waste oil runoff from flight line operations.

Evaluation of Relevant Information

During the Phase I RFI, three soil borings were drilled and sampled to a depth of 10 feet at SWMU 83. TRPH was detected at the surface in all three borings, and at the 2.5-foot and 5-foot depth intervals in two of the three borings. A maximum concentration of 5,000 ppm was detected at a depth of 2.5 feet. Aluminum, iron, nickel, potassium, zinc, copper and manganese were all detected in low concentrations in surface and subsurface samples from each of the three soil borings.

In addition to the Phase I, a Phase II RFI was also performed at SWMU 83 to determine whether a release of SWMU-related chemicals had occurred from the sump. Two borings were advanced to depths of 25 feet below the surface and samples were collected. Fourteen organic compounds were detected during the Phase II RFI. In addition, one metal, cadmium was detected at a maximum concentration that exceeded the background level for soils in the area of SWMU 83. However, the maximum concentration of only one compound, benzo(a)pyrene, slightly exceeded the associated RBC. Based on the results of the Phase II RFI at SWMU 83, the vertical extent of contamination has been adequately assessed and potential impacts to groundwater were considered low. Because there were no unacceptable health risks associated with SWMU 83, the Phase II RFI recommended that no further investigation was necessary for this SWMU.

Basis of Determination

SWMU 83 has been determined to be appropriate for NFA based on NMED NFA Criterion 5: The SWMU has been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected future land use.

43. SWMU 85, Stormwater Collection Point

Location

SWMU 85, Stormwater Collection Point, is a naturally occurring playa lake located in the southwestern portion of Cannon AFB. This SWMU is bound to the north by the intersection of the NE-SW and NW-SE Runways, to the east by NW-SE Runway, to the south by Perimeter Road followed by the Base boundary, and to the west by the NE-SW Runway.

History

Since the Base's activation in 1943, stormwater runoff from the flight line has collected in this nine-acre lake. Stormwater runoff flows toward the center of the site where it either evaporates or percolates into the soil.

Evaluation of Relevant Information

The IRP Phase II was completed at SWMU 85 because the disposal of small amounts of hazardous materials was suspected and because the SWMU is located within 800 feet of a drinking water well. As part of this investigation, three shallow borings were drilled and subsurface soil samples were collected from depth intervals of 3 to 4 feet for chemical analyses.

Various metals concentrations were detected in the three samples analyzed. The Phase II report noted that the concentration of heavy metals, especially lead, appeared to increase toward the center of the playa lake's basin. However, the report also noted that the environmental significance of this finding could not be fully evaluated using the limited data provided by the investigation. An insignificant concentration of oil and grease was detected in just one of the three samples. Based on the results of the Phase II, further investigation was recommended for SWMU 85.

An IRP RI was then completed at SWMU 85 to further determine whether the soils beneath the SWMU had been impacted by contaminants in stormwater runoff, and to delineate the extent of any potential contamination. Eight soil borings were drilled and analytical samples were collected from depths of 5 to 70 feet.

No VOCs or base/neutral extractable compounds were detected above the reporting limits in any of the samples analyzed. Three metals, barium, mercury, and selenium, were detected at concentrations that slightly exceeded established background levels for the area. However, the concentrations reported were less than the background concentrations for metals typically found in soil. In addition, while the results of the Phase II reported a suspected trend of increasing metals concentrations towards the center of the site, the results of a more extensive RI did not substantiate this interpretation. Further, the EP toxicity test results indicated that the concentrations of metals detected would not be expected to leach out of site soils at significant concentrations. Based on the results of risk screening completed using the results of the RI, NFA was recommended for SWMU 85.

The potential for groundwater contamination was considered minimal since the depth to groundwater is greater than 250 feet, and the soil sampling results demonstrate that contaminants are not being transported significantly in a vertical direction beneath the SWMU.

Basis of Determination

SWMU 85 has been determined to be appropriate for NFA based on NMED NFA Criterion 5: The SWMU has been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected future land use.

44. SD-11, Engine Test Cell Area, (SWMUs 86, 87, 88, 89, 90)

Location

Site SD-11 (SWMUs 86-90) is located in the southeast portion of Cannon AFB, approximately 5,000 feet east and 2,000 feet south of the intersection of the two main runways. The site consists of a former engine test cell (SWMU 86), a former overflow pit (SWMU 87), a former leach field (SWMU 88), which

was later converted into an evaporation pond (SWMU 89), and an OWS with an associated 100-gallon collection tank (SWMU 90).

History

The SWMUs that compose site SD-11 were active from approximately 1965 to 1988. The former test cell was enclosed by a 50-foot by 10-foot building. The separate areas of the site all received potential contaminants from a single operation, the steam cleaning and testing of jet aircraft engines. Initially, effluent produced at the site was discharged directly into an overflow pit (SWMU 87). Then, the OWS system (SWMU 90) and leach field (SWMU 88) were installed. Finally, the effluent from the OWS was routed to an evaporation pond (SWMU 89) that had been constructed in the area of the former leach field.

The building and an associated pump house have been removed, leaving a concrete slab. The OWS system has also been removed. Mainly asphalt, gravel, and weeds cover the area surrounding SD-11. At the time of the field investigation portion of the CMS, outdoor engine tests were still being conducted on the slab using portable equipment.

Evaluation of Relevant Information

During the RI, five 10-foot borings were installed at locations near the engine test pad and the OWS. Soil samples were collected from the 2-foot, 4-foot, and 8-foot depth intervals. A sixth boring was drilled near the location of the first boring, and samples were collected at 10, 13, 18, and 23 feet. Surface soil samples were also collected from the 0- to 0.5-foot depth interval of the first five borings.

Due to laboratory-missed holding times, four borings had to be redrilled to depths of 6 or 10 feet, depending on which holding times were missed. The redrilled borings were located 1 to 3 feet from the original locations. The eight additional subsurface samples were analyzed for TCL VOCs. Four additional surface soil samples were also collected and analyzed for TCL VOCs.

Only two VOCs, acetone and toluene were detected in the soil samples analyzed. However, other VOCs may have been present but were possibly masked by the elevated reporting limits associated with sample dilutions. The dilutions were necessitated by the presence of high concentrations of target analytes, particularly acetone. Elevated concentrations of ten metals, antimony, barium, cadmium, chromium, cobalt, copper, lead, manganese, nickel, and zinc were also detected in the samples analyzed.

The RI concluded that the lateral extent of the contamination identified during this investigation had not been determined, and SD-11 required further action.

No additional sampling data was collected as part of the BRA. However, a human health and ecological risk assessment that considered both present and future potential receptors and all appropriate exposure pathways was performed on the data collected during the RI. The BRA used validated soil data collected as part of the RI to identify and select COCs for the quantitative characterization of risk at the SD-11 SWMUs. For the purposes of the BRA, hazards and risks were combined across exposure pathways.

The average exposures and RME for all hazard indices for subchronic and chronic exposures to site COCs fell below the USEPA's level of concern (1.0) for noncarcinogenic effects. This indicated that no unacceptable risk of noncarcinogenic effects was expected at SD-11. The total carcinogenic risk (i.e., the risk for all pathways combined) for average and RME exposures at SD-11 fell below the USEPA's target

risk range of 1×10^{-4} to 1×10^{-6} . This indicated that no unacceptable risk of carcinogenic effects was expected at SD-11.

The maximum concentration of lead detected within the SD-11 risk assessment area fell below the applicable USEPA interim guidance for soil lead cleanup levels at Superfund sites. In addition, the estimated ambient air concentrations of lead at SD-11 fell below the USEPA background concentration of $0.200 \mu\text{g}/\text{mg}^3$. Therefore, no unacceptable risk was expected due to the presence of lead at SD-11.

Based on the results of the BRA, no unacceptable human health or ecological risks due to chemical releases were expected from the SD-11 SWMUs. However, the RI concluded that the lateral extent of the contamination at SD-11 had not been determined and required further action.

The purpose of the Phase III RFI was to further characterize the nature and extent of contamination in the area of SD-11. In addition, the Phase III RFI included a risk evaluation to further evaluate whether a significant release had occurred at any of the SD-11 SWMUs.

During the Phase III RFI, nine soil borings were installed. Surface soil samples were collected from all borings, generally at the 0- to 2-foot depth interval. The borings were drilled and sampled to maximum depths ranging from 35 to 71 feet.

Low levels of several organic compounds were detected during the Phase III RFI, including toluene, xylenes, PAHs, and TPH. However, during the risk evaluation, only benzo(a)pyrene was detected at a concentration ($0.27 \text{ mg}/\text{kg}$) that exceeded the corresponding USEPA Region III RBC for residential soil.

Although seven metals, aluminum, barium, chromium, cobalt, manganese, nickel, and zinc were detected at potentially significant concentrations during the Phase III RFI, a comparison during the risk evaluation found that all concentrations were within established background levels.

An insignificant concentration of bromoform, at a level below the RBC, was the only organic compound detected in the groundwater sample. Four metals, arsenic, barium, copper, and vanadium were also detected in the groundwater sample at insignificant concentrations, below the corresponding background levels and/or RBCs.

The Phase III RFI sampling results confirmed that contamination at SD-11 was mainly confined to surface and near-surface soils. In addition, the vertical distribution of site contaminants appears to be well defined, and potential impacts to site groundwater are considered low. There were no unacceptable health risks associated with SD-11, and the Phase III RFI recommended that no further investigation was necessary for this SWMU.

During the CMS, three soil borings were drilled and sampled to maximum depths of 40 feet in the area of SWMU 89, the evaporation pond. Five soil samples, collected from the 0- to 1-foot, the 8- to 10-foot, the 18- to 20-foot, the 28- to 30-foot, and the 38- to 40-foot intervals from each boring, were analyzed.

No VOCs and only two low-level concentrations of SVOCs were detected in the samples analyzed as part of the CMS.

Results of the human health and ecological risk evaluations indicated that there was minimal risk to human health and the environment based on the maximum detected concentrations of COCs in the soil at

SD-11. In addition, results of the vadose zone fate and transport modeling showed, assuming sorption, dispersion and biodegradation occurred, that the COCs would not reach groundwater above the maximum allowable concentrations for drinking water. The risk evaluations, combined with the modeling, were used to determine that the NFA alternative would be protective of human health and the environment at the lowest cost.

Basis of Determination

SD-11 has been determined to be appropriate for NFA based on NMED NFA Criterion 5: The SWMU has been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected future land use.

45. SWMU 91, Recovered Fuel Tank No. 5114

Location

An RFA misidentified the suspected SWMU 91 location as having an aboveground storage tank for fuel recovered from OWS No. 5114 (SWMU 86) at Cannon AFB. The tank was actually a 5,000-gallon aboveground JP-4 bulk storage tank for Test Stand No. 5114.

History

The tank was removed in 1988 when the test stand was demolished. Because the bulk storage tank was never used for the management of wastes, it was not a SWMU.

Evaluation of Relevant Information

The bulk, aboveground storage tank misidentified as SWMU 91 is not a SWMU. Storage tanks are not included in the definition of a SWMU as defined in the following excerpt from the RFA Guidance: "The definition does not include . . . units in which wastes have not been managed (e.g., product storage areas)."

Basis of Determination

SWMU 91 is proposed for NFA based on NMED NFA Criterion 2: This SWMU has never been used for the management (i.e., generation, treatment, storage and/or disposal) of RCRA solid waste or hazardous wastes and/or constituents or other CERCLA hazardous substances.

46. SWMU 93, Oil/Water Separator No. 5121

Location

SWMU 93, OWS No. 5121, was formerly located beneath the hush house portion of Building 5123, a jet engine test facility. The OWS, which consisted of a two-compartment underground unit with a detached 100-gallon oil storage tank, had been located on the east side of former Power Check Pad No. 5121.

History

SWMU 93 was active from approximately 1957 to 1988. In 1988, the unit and the associated leach field were removed during the demolition of Building 5121. This building was then replaced with Building 5123, which was constructed atop the former location of SWMU 93. The unit received waste wash water from aircraft engine testing and maintenance operations. Recovered oils were stored in the 100-gallon tank and the wastewaters were discharged to a leach field located approximately 40 feet to the east of the OWS.

Evaluation of Relevant Information

During the Phase I RFI, three 60-foot borings were installed at locations as close as possible to the OWS and the leach field. Soil samples were collected from the 1.5- to 3.5-foot, 4- to 6-foot, 8- to 10-foot, 18- to 20-foot, 28- to 30-foot, 38- to 40-foot, 48- to 50-foot, and 58- to 60-foot depth intervals.

Four organic compounds, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene and one metal, barium were found at levels exceeding the corresponding RBCs. The highest concentrations of organics were detected in near-surface samples. The highest concentration of barium was detected at 28 feet. The Phase I RFI recommended completing a BRA for SWMU 93.

The BRA for SWMU 93 included a human health and ecological risk assessment that considered both present and future potential receptors and all appropriate exposure pathways. Based on the results of the BRA, no unacceptable human health or ecological risks due to chemical releases were expected from SWMU 93. Therefore, NFA was recommended for SWMU 93.

During the Phase II RFI, three soil borings were installed. One boring was drilled near the northwest corner of Building 5123, the second boring was drilled near the southeast corner of Building 5123, and the third boring was drilled immediately south of Building 5123. Each boring was drilled and sampled to a maximum depth of 10 feet. Surface soil samples from all borings were collected from 0 to 2 feet. All three borings were also sampled at intervals of 3 to 5 and 8 to 10 feet.

Three organic compounds and two metals detected during the Phase II RFI exceeded the levels detected during the Phase I RFI. However, none of the organics or metals exceeded the corresponding RBCs. The Phase II sampling results confirmed that contamination at SWMU 93 was mainly confined to surface and near surface soils. Because there were no unacceptable health risks associated with SWMU 93, the Phase II RFI recommended that no further investigation was necessary for this SWMU.

The potential for groundwater contamination was considered minimal since the depth to groundwater is greater than 250 feet, and the soil sampling results demonstrate that contaminants are not being transported significantly in a vertical direction beneath the SWMU.

Basis of Determination

SWMU 93 has been determined to be appropriate for NFA based on NMED NFA Criterion 5: The SWMU has been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected future land use.

47. SWMU 95, Northeast Stormwater Drainage Area

Location

SWMU 95, The Northeast Stormwater Drainage Area, at Cannon AFB is a shallow, open ditch that begins near the end of Runway 4/22, and extends to the southeast under an access road before emptying into an open field. The northwest end of the ditch is marked by a concrete culvert and is surrounded by heavy vegetation. The drainage ditch is approximately 40 feet wide and runs for approximately 550 feet.

History

SWMU 95 began receiving stormwater runoff from the runways in approximately 1953. The OWS units were installed in 1969.

Evaluation of Relevant Information

The IRP Phase II was completed at SWMU 95 because small amounts of oils, greases and alkaline-based cleaning compounds may have been contained in the water received at the Northeast Stormwater Drainage Area. As part of this investigation, 11 borings were drilled and soil samples were collected to maximum depths ranging from 5 to 61.5 feet.

Long chain organics, heptanes to heptadecanes were detected at depths ranging from 0 to 3 feet in a boring located at the northwest end of SWMU 95, near the concrete culvert. However, the concentrations of these compounds diminished with depth and were not found to have migrated with the flow of the drainage area. Selenium and barium were detected above background concentrations, but the concentrations were all within ranges typical of area soils. In addition, the distribution of these metals did not reflect trends typically associated with contamination.

During the RI, two soil borings were drilled and samples were collected for chemical and geotechnical analyses. Subsurface soil samples were collected from the borings to maximum depth intervals of 10 feet. The boring locations and total depths were chosen to evaluate the nature and extent of potential hazardous contaminants in the area upstream of SWMU 95, based on the results of the IRP Phase II.

Soil samples were collected at depth intervals of 0 to 0.5, 2 to 4, 4 to 6, 6 to 8, and 8 to 10 feet in each boring. In addition, samples were also collected from 0 to 2 feet in each location for geotechnical gradation analysis.

Two additional borings were drilled and sampled at locations near the two previous borings, after the laboratory missed the holding times for several of the original samples. Samples were collected at depth intervals of 0 to 0.5, 2 to 4, 4 to 6, and 8 to 10 feet from one boring, and at depth intervals of 0 to 0.5, 4 to 6, and 8 to 10 feet from the other boring.

No VOCs or SVOCs were detected above the corresponding CRQLs in any of the samples analyzed, except for acetone. However, acetone is a common laboratory contaminant, and at least the highest detection was most likely due to laboratory contamination. TPH was detected in near-surface samples at a maximum concentration of 1,060 mg/kg, and was not detected in subsurface samples below a maximum depth of 2 feet.

Elevated concentrations of 10 metals, barium, cadmium, chromium, cobalt, copper, iron, lead, mercury, nickel, and zinc were also detected in the samples analyzed. However, only concentrations of two metals, lead and zinc, collected from one near-surface sampling location exceeded established background levels. The conclusions reached in the RI were based on the results of the BRA.

The BRA used validated soil data collected as part of the RI to identify and select COCs for the quantitative characterization of risk at SWMU 95. For the purposes of the BRA, hazards and risks were combined across exposure pathways. The COCs identified for SWMU 95 were lead and zinc. The average exposures and RME for all hazard indices for subchronic and chronic exposures to site COCs fell below the USEPA's level of concern (1.0) for noncarcinogenic effects. This indicated that no unacceptable risk of noncarcinogenic effects was expected at SWMU 95. The total carcinogenic risk (i.e., the risk for all pathways combined) for average exposures and RME at SWMU 95 fell below the USEPA's target risk range of 1×10^{-4} to 1×10^{-6} .

A single ecological risk assessment was included in the BRA for all 18 IRP/SWMUs addressed by the RI report. The ecological risk assessment addressed each chemical that was detected in the soils at Cannon AFB at concentrations determined to exceed background levels. Based on the results of the BRA, no unacceptable human health or ecological risks due to chemical releases were expected from this SWMU. Therefore, NFA was recommended for this SWMU.

Basis of Determination

SWMU 95 has been determined to be appropriate for NFA based on NMED NFA Criterion 5: The SWMU has been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected future land use.

48. SWMU 96, Old Entomology Rinse Area

Location

SWMU 96, The Old Entomology Rinse Area, was located behind pesticide storage Building 2160, which was abandoned in October 1983 and demolished in September 1984. The former location of SWMU 96 was in the east-central portion of Cannon AFB, north of the wastewater lagoons and west of Perimeter Road.

History

It is suspected that pesticide and herbicide application equipment were cleaned in a sink located inside Building 2160 which drained into a 3-foot-square and 2-foot-deep pit at the rear of the building. The bottom of the pit was reportedly unlined and open to the soil. This operation is believed to have started in 1968, but may have begun earlier. This operation ceased at some point prior to Building 2160's abandonment in October 1983.

Evaluation of Relevant Information

The IRP Phase II of SWMU 96 was completed to investigate the potential percolation of pesticide waste into the site soils, given the proximity of a potable water well within 1,200 feet of SWMU 96. Three

borings were drilled, and subsurface soil samples were collected from depth intervals ranging from 2 to 63 feet. Detected organochlorine pesticides included 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, dieldrin, and toxaphene. Two of the three samples found to contain pesticides were collected from depths of 2 to 4 feet. However, the third sample was collected from a depth of 61.5 to 62 feet, an interval "in an unconsolidated, permeable sand unit below the caliche profile".

Arsenic and mercury were each detected in several samples, but all detected concentrations corresponded to area background levels.

The IRP Phase II Report postulated that the wastewater treatment lagoons were a potential source of the deeper zone of herbicide and pesticide contamination. Despite that fact that the sample of concern was collected from a boring located upgradient from the lagoons, "there exists a nearly constant standing body of water, which could drive wastewater downward through the unsaturated sands and caliche downgradient from the (Old) Entomology Rinse Area".

The IRP Phase IV-A was completed at SWMU 96 to confirm the results of the Phase II investigation and to further delineate the extent of any potential contamination. During the Phase IV-A, eight borings were drilled and sampled, four to depths of 50 feet and the other four to depths of 100 feet. Each boring was sampled from 0 to 10 feet at designated intervals, and at 10-foot intervals thereafter.

In addition, one groundwater monitoring well was installed downgradient from SWMU 96. The well was installed to a depth of 356 feet. However, based on the well's limited production, a groundwater sample was not collected for analysis during this phase.

The Phase IV-A investigation detected no herbicides in any of the samples analyzed. In addition, the four pesticides (4,4'-DDD, 4,4'-DDE, 4,4'-DDT, and chlordane) were detected during this investigation were found in samples collected from shallow depths. The concentrations of pesticides diminished with depth; 2.6 ppm was the highest concentration detected, and 6 feet was the deepest depth where pesticides were detected.

The Phase IV-A report noted that no herbicides were detected during this investigation, even though the investigation was more extensive than the previous investigations. In addition, the herbicide 2,4-D has a half-life of just 21 days in the aerated zone, so it could have degraded during the interval between investigations. Finally, despite the detection of 2,4-D in deep samples collected during the Phase II investigation, the geologic and climatic conditions in conjunction with results of the shallower samples from the Phase II indicate that herbicides did not exist at depths deeper than 10 feet.

The RI was completed to provide additional information regarding the nature and extent of potential hazardous contaminants in the surface soil near the former site of Building 2160 and in the groundwater downgradient from SWMU 96 for risk assessment purposes.

One surface sample was collected from the approximate former location of the open pit, near Building 2160, and analyzed for pesticides and PCBs. One groundwater sample was also collected from the monitoring well installed during the Phase IV-A investigation. The groundwater sample was analyzed for pesticides, PCBs, and total metals.

Low concentrations of pesticides, ranging from 16 to 110 parts per billion (ppb), were detected in the surface soil sample. The detected pesticides included 4,4'-DDE, 4,4'-DDT, alpha- and gamma-chlordane,

and heptachlor epoxide. No PCBs were detected in the surface soil sample at levels exceeding the CRQLs.

Six metals, barium, chromium, copper, lead, vanadium, and zinc were detected in the groundwater sample at low concentrations. As part of the risk screening process, discussed below, the detected metals concentrations were compared to the corresponding USEPA MCLs. None of the detected metals exceeded the corresponding MCLs. In addition, no pesticides or PCBs were detected above the CRQLs.

The BRA used validated soil data collected as part of the RI to identify and select COPCs for the quantitative characterization of risk at SWMU 96. The COPCs identified for SWMU 96 were the pesticides 4,4-DDE, 4,4-DDT, alpha- and gamma-chlordane, and heptachlor epoxide. The average exposures and RME for all hazard indices for subchronic and chronic exposures to site COPCs fell below the USEPA's level of concern (<1.0) for noncarcinogenic effects. This indicated that no unacceptable risk of noncarcinogenic effects was expected at SWMU 96.

The total carcinogenic risk (i.e., the risk for all pathways combined) for average and RME exposures at SWMU 96 fell below the USEPA's target risk range of 1×10^{-4} to 1×10^{-6} .

A single ecological risk assessment was included in the BRA for all 18 IRP/SWMUs addressed by the RI report. The ecological risk assessment addressed each chemical that was detected in the soils at Cannon AFB at concentrations determined to exceed background levels. However, none of the COPCs discussed in the ecological risk assessment were detected at SWMU 96.

All chemicals detected in the groundwater sample occurred at concentrations below the USEPA drinking water MCLs. Based on the results of this risk screening, as discussed below, no potential groundwater COPCs were selected for SWMU 96.

Based on the results of the BRA, no unacceptable human health or ecological risks due to chemical releases were expected from this SWMU. Therefore, NFA was recommended for this SWMU.

A Supplemental RFI was completed to sample the deeper soil beneath the suspected rinse sink pit location that had not yet been sampled, and to provide more current information on site conditions of the SWMU. One boring was drilled to a total depth of 102 feet. Analytical samples were collected from the boring at 10-foot intervals (10 feet, 20 feet, etc.) for a total of ten subsurface soil samples. The VOCs detected, acetone, methylene chloride, and toluene were all attributed to laboratory contamination. No other VOCs were detected.

No SVOCs, pesticides, PCBs, or herbicides were detected at concentrations above the corresponding RLS in any of the analyzed samples. However, two pesticides, 4,4-DDE and 4,4-DDT, were detected in a sample collected at the 10-foot depth interval at estimated concentrations below the RLS. This detection may be attributed to general pesticide application at the Base.

Seventeen metals, aluminum, arsenic, barium, beryllium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, potassium, silver, sodium, and vanadium were detected in the ten subsurface samples, but all detected concentrations fell within the range of area background levels. Insignificant concentrations of petroleum hydrocarbons were detected in several samples. Based on this, NFA was recommended for SWMU 96.

Basis of Determination

SWMU 96 has been determined to be appropriate for NFA based on NMED NFA Criterion 5: The SWMU has been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected future land use.

49. SWMU 98, Sanitary Sewer Line

Location

SWMU 98, the sanitary sewer line, at Cannon AFB are located underground and are used to transport sanitary wastewater to the wastewater treatment plant. The sewer lines are constructed of PVC in the housing area and of clay tile in the main Base area. The pipe diameters range from 8 inches for PVC to 15 inches for clay tile.

History

SWMU 98 has been in operation since approximately 1943. The average daily flow through the sanitary sewer line is 0.4 million gallons per day (mgd). SWMU 98 is currently operational and is used to transport sanitary wastewater to the wastewater treatment lagoons. No previous investigations have been conducted at SWMU 98.

Evaluation of Relevant Information

Forty-two soil borings were drilled and samples were collected for chemical and geotechnical analyses during the RI. Subsurface soil samples were collected from borings to maximum depth intervals ranging from 8 to 29 feet, determined by terminating each boring approximately 5 feet below the estimated depth to the sewer line at each location.

Acetone was the only TAL VOC detected at concentrations exceeding the CRQL in samples collected during the RI. In all borings except one, the presence of acetone was dismissed as laboratory contamination. The exception may indicate past leakage from the sewer near this point.

TPH was detected in one boring at a concentration above 100 mg/kg. Lead and cadmium were detected above background levels in two samples. However, they are not metals of concern in this area.

The BRA used validated soil data collected as part of the RI to identify and select COCs for the quantitative characterization of risk at SWMU 98. Based on site conditions at SWMU 98, the most significant exposure pathways include inhalation of fugitive VOCs or dust, and direct contact with soil resulting in incidental ingestion or dermal absorption of chemicals from soil.

The COCs identified for SWMU 98 included barium, acetone, and toluene. Acetone does not have an inhalation toxicity value, so it was not evaluated for noncarcinogenic effects from inhalation exposure. The average exposures and RME for all hazard indices for subchronic and chronic exposures to site COCs fell below the USEPA's level of concern (1.0) for noncarcinogenic effects. This indicated that no unacceptable risk of noncarcinogenic effects was expected at SWMU 98. Carcinogenic risks were zero due to the absence of carcinogenic chemicals identified as COCs at SWMU 98.

Based on the results of the BRA, no unacceptable human health or ecological risks due to chemical releases were expected from this SWMU. Therefore, NFA was recommended for SWMU 98.

Basis of Determination

SWMU 98 is proposed for NFA based on NMED NFA Criterion 5: The SWMU has been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected future land use.

50. SWMU 104, Landfill No. 4

Location

SWMU 104, Landfill No. 4, is an inactive, unlined, cut-and-fill landfill occupying approximately 6.3 acres along the eastern boundary of Cannon AFB. This SWMU is bound to the north by an unused portion of Perimeter Road, to the east by a vacant field, to the south by the playa lake, and to the west by barbed wire fence. The ground surface is sloped slightly to the south and the playa lake, and the site is covered with native prairie grasses. Remnant depressions observed at the surface of this SWMU are most likely the locations of former disposal trenches where settling has occurred.

History

SWMU 104 accepted wastes during 1967 and 1968. The landfill's operation apparently consisted of placing waste in trenches and burning it before burying it. The landfill reportedly received domestic solid wastes and shop wastes, which included waste oils and solvents, paint strippers and thinners, outdated paint, pesticide containers, and various empty cans and drums.

Evaluation of Relevant Information

The IRP Phase II Investigation included drilling and sampling nine soil borings in the area of Landfill No. 4. Soil samples collected at depths ranging from 1 to 63 feet were analyzed for metals, oils and greases, and halogenated and aromatic organics. Insignificant concentrations of these chemicals were detected in the samples, and the report recommended NFA for SWMU 104.

In addition to the IRP Phase II, an RFI was also completed at SWMU 104 to determine whether a release of landfill-related chemicals had occurred. As part of this investigation, an exploration trench was dug to locate the bottom of the landfill. In addition, ten borings were drilled and subsurface soil samples were collected from depth intervals ranging from 15 to 62 feet. These intervals were chosen because they had not been sampled during the IRP Phase II Investigation and because the vertical extent of any potential contamination had not been determined.

Methylene chloride, toluene, and xylenes were detected at concentrations of potential concern during the RFI at Landfill No. 4. All other VOCs and SVOCs detected were excluded from concern because they were considered to be laboratory contaminants.

Detected herbicides, pesticides, and PCBs included 2,4,5-TP, dichloroprop, MCP, 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, aldrin, endosulfan II, endrin, heptachlor epoxide, beta-BHC, delta-BHC, gamma-BHC, and Aroclor 1260.

Thirteen metals, aluminum, barium, beryllium, cadmium, chromium, cobalt, copper, iron, mercury, potassium, selenium, vanadium, and zinc were detected in concentrations exceeding the Upper Tolerance Limits (UTLs) calculated from background concentrations for the area around SWMU 104.

Based on the results of a BRA completed as part of this investigation, the RFI report recommended NFA for SWMU 104.

A Phase II RFI was completed at SWMU 104 to determine whether a release of landfill-related chemicals to groundwater in the area of SWMU 104 had occurred. One groundwater monitoring well was installed and developed downgradient from Landfill No. 4. The total depth of the boring was 299 feet. The screened interval was located from a depth of 268 to a depth of 297.5 feet below ground surface.

After the well had been developed, a groundwater sample was collected and analyzed for VOCs, SVOCs, pesticides/PCBs, herbicides, metals, TPH, and TRPH. Additional samples were collected from the well in March 1996, June 1996, December 1997, December 1998, and December 1999. In addition to being analyzed for the same parameters as the initial sample, the four samples were also analyzed for several additional parameters, including general chemistry parameters, dioxins, and cyanide, all of which yielded insignificant results.

Three VOCs, acetone, methylene chloride, and toluene, and two SVOCs, acetophenone and bis(2-ethylhexyl) phthalate were detected in at least one groundwater sample collected during the five sampling events. Fourteen metals, arsenic, barium, calcium, cobalt, copper, lead, magnesium, potassium, selenium, silver, sodium, tin, vanadium, and zinc, were also detected. In addition, TPH was detected in the initial groundwater sample. None of the pesticides/PCBs, herbicides, dioxins, etc., were detected in any of the samples, and none of the general chemistry results were above corresponding USEPA MCL or secondary MCL. Based on the results of risk screening completed on the results of these sampling events, NFA is recommended for SWMU 104.

Because none of the compounds detected exceeded the corresponding MCLs, the chemicals detected in groundwater in the area of Landfill No. 4 do not pose an unacceptable risk to the environment.

Basis of Determination

SWMU 104 has been determined to be appropriate for NFA based on NMED NFA Criterion 5: The SWMU has been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected future land use.

51. SWMU 105, Landfill No. 3

Location

SWMU 105, Landfill No. 3, is an inactive, unlined, cut-and-fill landfill occupying approximately 13.5 acres along the eastern boundary of Cannon AFB. This SWMU is bound to the north by a road leading to

the Base's transmitter tower, to the east and south by barbed wire fences installed along the Base's boundary, and to the west by Perimeter Road. The ground surface is slightly hummocky and is covered with native prairie grasses. The remnant depressions observed at the surface of this SWMU are most likely the locations of former disposal trenches where settling has occurred.

History

SWMU 105 accepted wastes between 1959 and 1967. The landfill's operation apparently consisted of placing waste in trenches and burning it before burying it. The landfill reportedly received domestic solid wastes and shop wastes, which included waste oils and solvents, paint strippers and thinners, outdated paint, pesticide containers, and various empty cans and drums.

Evaluation of Relevant Information

The IRP Phase II Investigation included drilling and sampling nine soil borings in the area of Landfill No. 3. Soil samples collected at depths ranging from 0 to 59.5 feet were analyzed for metals, oils and greases, and halogenated and aromatic organics. Insignificant concentrations of these chemicals were detected in the samples, and the report recommended NFA for SWMU 105.

An RFI was completed at SWMU 105 to determine whether a release of landfill-related chemicals had occurred. As part of this investigation, an exploration trench was dug to locate the bottom of the landfill. In addition, 12 borings were drilled and subsurface soil samples were collected from depth intervals ranging from 20 to 61 feet and submitted for chemical analyses. These intervals were chosen because they had not been sampled during the IRP Phase II Investigation and because the vertical extent of any potential contamination had not been determined.

Toluene, methylene chloride, xylenes, and bis(2-ethylhexyl) phthalate were detected at concentrations of potential concern during the RFI at SWMU 105. Detected pesticides and PCBs included 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, aldrin, dieldrin, endrin, endrin aldehyde, heptachlor epoxide, methoxychlor, beta-BHC, delta-BHC, gamma-BHC, Aroclor 1254, and Aroclor 1260.

Fourteen metals, aluminum, barium, beryllium, calcium, chromium, cobalt, copper, iron, magnesium, nickel, potassium, selenium, vanadium, and zinc were detected in concentrations exceeding the UTLs calculated from background concentrations for the area around SWMU 105.

A Phase II RFI was completed at SWMU 105 to determine whether a release of landfill-related chemicals to groundwater in the area of SWMU 105 had occurred. One groundwater monitoring well was installed and developed downgradient from Landfill No. 3. The total depth of the boring was 304.3 feet. The screened interval was located from a depth of 273.9 to a depth of 303.9 feet below ground surface.

Geotechnical samples were collected and analyzed from within the screened interval at depths of 280, 290, and 300 feet, but no samples were collected for chemical analyses. Although no samples were collected for chemical analyses, soils encountered in the boring were field screened for headspace information. The highest headspace readings observed were 0.3 ppm. However, these readings most likely resulted from soil moisture, not the presence of organic contaminants in the soil.

After the well had been developed, groundwater samples were collected in March 1996, June 1996, December 1997, and December 1998. Four VOCs, carbon tetrachloride, chloroform, methylene chloride,

and trichloroethene and two SVOCs, bis(2-ethylhexyl) phthalate and di-n-butyl phthalate were detected in at least one groundwater sample collected during the five sampling events. Ten metals, arsenic, barium, copper, magnesium, potassium, selenium, silver, sodium, vanadium, and zinc were also detected. In addition, TPH was detected in the initial groundwater sample. No pesticides/PCBs, herbicides, dioxins, etc., were detected in any of the samples, and none of the general chemistry results were above corresponding USEPA MCL or secondary MCL. Based on the results of risk screening completed on the results of these sampling events, NFA is recommended for SWMU 105.

Based on the results of the human health risk screening, chemicals detected in groundwater in the area of Landfill No. 3 do not pose an unacceptable risk to human health. Based on the results of the ecological screening, chemicals detected in soils at Landfill No. 3 do not pose an unacceptable ecological risk.

Basis of Determination

SWMU 105 has been determined to be appropriate for NFA based on NMED NFA Criterion 5: The SWMU has been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected future land use.

52. SWMU 106, Fire Department Training Area No. 2

Location

SWMU 106, Fire Department Training Area No. 2, is located in the southeast corner of Cannon AFB, near abandoned north-south taxiway T-5 and bound to the north by an east-west paved road. The training area consists of two small round depressions in the land surface, characterized by sparse vegetation and measuring approximately 250 feet across.

History

From 1968 to 1974, SWMU 106 was used concurrently with SWMU 107 as a fire fighting training area. According to a Phase I IRP Records Search, the potential existence of hazardous contaminants at Fire Department Training Area No. 2 was evaluated by reviewing existing information, including installation records. About eight times per year, approximately 300 gallons of jet fuel were burned during training exercises at the site.

Evaluation of Relevant Information

During a Phase II (Stage 1) investigation conducted in 1984 and 1985, one deep soil boring was drilled and samples were collected. Soil samples from this investigation were analyzed for oil and grease, lead, and purgeable organic compounds to determine if environmental contamination had resulted from fire training exercises in the area of SWMU 106. The investigation concluded that this site did not pose a threat to surface water or groundwater in its vicinity.

During the RI, four soil borings were drilled. Subsurface soil samples were collected from the borings to maximum depth intervals of 32 feet in three of the borings and of 31 feet in the fourth boring. Soil samples were collected at depths of 4, 10, 20, and 30 feet in the three borings drilled to 32 feet, and at

depths of 6, 10, 20, and 30 feet in the boring drilled to 31 feet. Four surface samples were also collected from the borings at depth intervals of 0 to 0.5 feet.

Two additional borings were drilled and sampled at locations near two of the previous borings after the laboratory missed the TCL VOCs holding times for several of the original samples. The samples, collected from one boring to a maximum depth of 6 feet and the other boring to a maximum depth of 32 feet, depending on which samples had missed holding times.

No TAL VOCs were detected in any of the subsurface samples collected during the RI, with the exception of acetone. However, acetone is a common laboratory contaminant, and its detection was attributed to laboratory contamination. Toluene was detected in one surface sample and benzene was detected in a second, but the concentrations of these compounds were below the quantitation limits. TPH was detected in surface samples at a maximum concentration of 232 mg/kg, but was not detected in any subsurface samples.

Lead and chromium were detected at concentrations exceeding the site background levels in surface samples at maximum concentrations of 41.0 mg/kg and 19.2 mg/kg, respectively. Lead and chromium were not detected above the background levels in any of the subsurface samples. The conclusions reached in the RI of 18 IRP/SWMU sites was based on the results of the BRA, and are discussed below.

The BRA used validated soil data collected as part of the RI to identify and select COCs for the quantitative characterization of risk at SWMU 106. The COCs identified for SWMU 106 were VOCs. The average exposures and RME for all hazard indices for subchronic and chronic exposures to site COCs fell below the USEPA's level of concern (1.0) for noncarcinogenic effects. This indicated that no unacceptable risk of noncarcinogenic effects was expected at SWMU 106.

The total carcinogenic risk (i.e., the risk for all pathways combined) for average and RME exposures at SWMU 106 fell below the USEPA's target risk range of 1×10^{-4} to 1×10^{-6} , with the exception of total RME cancer risk for the future hypothetical child resident (1.1×10^{-4}). The exposure pathway and chemical(s) contributing the majority of the cancer risk was the inhalation of VOCs. In this case, benzene contributed at least 80 percent of this risk, regardless of exposure scenario (i.e., average or RME). However, the chemicals contributing to the estimated risks were detected at extremely low frequencies. The highest values used in the calculation of risks were based on nondetect concentrations of these chemicals. The detection limits used ranged from approximately 30 to 60 mg/kg. Thus, the corresponding risk estimates are most likely based on matrix effects associated with the soils analyses. In addition, the fugitive VOC model that was used to estimate the airborne VOC concentrations did not take into account the biodegradation of benzene, which would tend to decrease fugitive VOC concentrations over time. Thus, the estimated VOC concentrations would probably not be sustained over the entire duration of exposure.

The maximum concentration of lead detected within SWMU 106's risk assessment area fell below the applicable USEPA residential soil guidance lead cleanup levels. Therefore, no unacceptable risk was expected due to the presence of lead at this SWMU.

A single ecological risk assessment was included in the BRA for all 18 IRP/SWMU sites covered by the RI report. The ecological risk assessment addressed each chemical that was detected in the soils at Cannon AFB at concentrations determined to exceed background levels. However, lead and chromium were the only COCs discussed in the ecological risk assessment that were also detected at SWMU 106.

Based on the results of the BRA, no unacceptable human health or ecological risks due to chemical releases were expected from this SWMU. Therefore, NFA was recommended for this SWMU.

Basis of Determination

SWMU 106 has been determined to be appropriate for NFA based on NMED NFA Criterion 5: The SWMU has been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected future land use.

53. SWMU 107, Fire Department Training Area No. 3

Location

SWMU 107, Fire Department Training Area No. 3, is located in the southeast corner of Cannon AFB, adjacent to and east of abandoned north-south taxiway T-5. The training area consists of an unlined surface area in a half-moon shape, measuring approximately 100 feet in length. The site has little vegetation, but was littered with numerous empty storage containers of various sizes at the time of the RI sampling event.

History

From 1968 to 1974, SWMU 107 was used concurrently with SWMU 106 as a fire fighting training area. According to a Phase I IRP Records Search, the potential existence of hazardous contaminants at Fire Department Training Area No. 3 was evaluated by reviewing existing information, including installation records. During training exercises, the ground was saturated with water, then approximately 300 gallons of jet fuel was ignited for training purposes. More recently, according to the 1995 RFI, the area of SWMU 107 has been used for activities associated with the adjacent ordnance training site.

Evaluation of Relevant Information

During a Phase II (Stage 1) investigation conducted in 1984 and 1985, one deep soil boring was drilled and samples were collected for chemical analyses. The investigation concluded that this site did not pose a threat to surface water or groundwater in its vicinity.

In addition to the Phase II (Stage I), an RI was also completed. Four soil borings were drilled and samples were collected for chemical and geotechnical analyses. Subsurface soil samples were collected from the borings to maximum depth intervals of 31 feet in three of the borings and of 67 feet in the fourth boring. Soil samples were collected at depths of 5, 10, 20, and 29.5 feet in one boring, 4, 10, 20, and 30 feet in the second and third borings, and at depths of 4, 10, 20, 30, 45, 50, and 60 feet in the fourth boring drilled to 67 feet. Four surface samples were also collected from the borings at depth intervals of 0 to 0.5 feet.

Two additional borings were drilled and sampled at locations near two of the previous borings after the laboratory missed the TCL VOCs holding times for several of the original samples. The samples were collected from one boring to a maximum depth of 31 feet and the other boring to a maximum depth of 52 feet, depending on which samples had missed holding times.

No TAL VOCs were detected in any of the subsurface samples collected during the RI, with the exception of acetone and BTEX compounds. However, acetone is a common laboratory contaminant, and its detection was attributed to laboratory contamination. Xylenes were detected in one boring at a maximum concentration of 94 mg/kg. Ethylbenzene was also detected in the same boring at a maximum concentration of 15 mg/kg. TPH was detected in the four surface samples at a maximum concentration of 6,080 mg/kg, and was detected in subsurface samples at potentially significant concentrations to a maximum depth of 32 feet.

Lead was detected at concentrations exceeding the site background levels in two surface samples at a maximum concentration of 322 mg/kg. Lead was not detected above the background levels in any of the subsurface samples. Chromium was detected infrequently and in concentrations comparable to site background levels. The conclusions reached in the RI was based on the results of the BRA, and are discussed below.

The BRA used validated soil data collected as part of the RI to identify and select COPCs for the quantitative characterization of risk at SWMU 107. The COPCs identified for SWMU 107 were VOCs. The average exposures and RME for all hazard indices for subchronic and chronic exposures to site COPCs fell below the USEPA's level of concern (1.0) for noncarcinogenic effects. This indicated that no unacceptable risk of noncarcinogenic effects is expected at SWMU 107.

The total carcinogenic risk (i.e., the risk for all pathways combined) for average and RME exposures at SWMU 107 fell below the USEPA's target risk range of 1×10^{-4} to 1×10^{-6} , with the exception of total RME cancer risk for the future hypothetical child resident (1.1×10^{-4}). The exposure pathway and chemical(s) contributing the majority of the cancer risk was the inhalation of VOCs. In this case, benzene contributed at least 80 percent of this risk, regardless of exposure scenario (i.e., average or RME). However, the chemicals contributing to the estimated risks were detected at extremely low frequencies. The highest values used in the calculation of risks were based on nondetect concentrations of these chemicals. The detection limits used ranged from approximately 30 to 60 mg/kg. Thus, the corresponding risk estimates are most likely based on matrix effects associated with the soils analyses. In addition, the fugitive VOC model that was used to estimate the airborne VOC concentrations did not take into account the biodegradation of benzene, which would tend to decrease fugitive VOC concentrations over time. Thus, the estimated VOC concentrations would probably not be sustained over the entire duration of exposure.

The maximum concentration of lead detected within the SWMU 107 risk assessment area fell below the applicable USEPA guidance for residential soil lead cleanup levels. Therefore, no unacceptable risk was expected due to the presence of lead at this SWMU.

A single ecological risk assessment was included in the BRA for all 18 IRP/SWMU sites covered by the RI report. The ecological risk assessment addressed each chemical that was detected in the soils at Cannon AFB at concentrations determined to exceed background levels. However, lead and chromium were the only COCs discussed in the ecological risk assessment that were also detected at SWMU 107. Based on the results of the BRA, no unacceptable human health or ecological risks due to chemical releases were expected from this SWMU. Therefore, NFA was recommended for this SWMU.

Basis of Determination

SWMU 107 has been determined to be appropriate for NFA based on NMED NFA Criterion 5: The SWMU has been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected future land use.

54. SWMU 124, Inactive Underground Storage Tank No. 1

Location

An RFA described the suspected SWMU 124 location as being an inactive UST in the area of Facility 4028 at Cannon AFB.

History

Site inspections, record searches, and interviews with facility personnel failed to reveal the existence of a UST, other than a UST associated with SWMU 48A, in this area. It was determined that SWMU 124 must have been a duplication of SWMU 48A.

Evaluation of Relevant Information

SWMU 124 is a duplicate of SWMU 48A. Therefore, the area misidentified as SWMU 124 was never investigated.

Groundwater at Cannon AFB has been located at a depth greater than 250 feet; as such, the area misidentified as SWMU 124 contained no means for groundwater discharges to occur.

Basis of Determination

SWMU 124 has been determined to be appropriate for NFA based on NMED NFA Criterion 1: SWMU 124 is a duplicate of SWMU 48A.

55. SWMU 125, Inactive Underground Storage Tank No. 2

Location

An RFA described the suspected SWMU 125 location as a UST of unknown dimensions, capacity, and construction adjacent to Building 357 at Cannon AFB.

History

Site inspection and record searches failed to reveal the existence of this unit. Interviews with paint shop personnel indicated that a UST had been removed prior to the effective date of the NMED UST regulations. However, real property records indicate that the tank had been abandoned in place.

Evaluation of Relevant Information

There is no evidence indicating that this UST had been used for waste storage. Therefore, it is likely that this tank, which had been removed or abandoned in place, was mistakenly identified as a SWMU.

Groundwater at Cannon AFB has been located at a depth greater than 250 feet; as such, the area misidentified as SWMU 125 contained no means for groundwater discharges to occur.

Basis of Determination

SWMU 125 has been determined to be appropriate for NFA based on NMED NFA Criterion 1: SWMU 125 does not exist.

56. SWMU 126, Inactive Underground Storage Tank No. 3

Location

The area identified as SWMU 126 was actually a heating oil tank associated with Building 163 at Cannon AFB. Building 163 was demolished in 1985, and Building 164 was subsequently constructed in its place.

History

The tank was located in front of Hangar 162 at Cannon AFB. Hangar 162 was demolished and the tank was removed following NMED UST regulations.

Evaluation of Relevant Information

No contamination was encountered during the removal activities. Because the heating oil tank was never used for the management of wastes, it was not a SWMU. Storage tanks are not included in the definition of a SWMU as defined in the following excerpt from the RFA Guidance: "The definition does not include...units in which wastes have not been managed (e.g., product storage areas)."

Groundwater at Cannon AFB has been located at a depth greater than 250 feet; as such, the area misidentified as SWMU 126 contained no means for groundwater discharges to occur.

Basis of Determination

SWMU 126 has been determined to be appropriate for NFA based on NMED NFA Criterion 2: This SWMU has never been used for the management (i.e., generation, treatment, storage and/or disposal) of RCRA solid waste or hazardous wastes and/or constituents, or other CERCLA hazardous substances.

57. SWMU 127, Sand Trap and Leach Field For Facility 4095 (#1)

Location

SWMU 127 consisted of a 135-gallon concrete sand trap and leach field that received wash water from the POL refueling truck wash rack in Facility 4095 at Cannon AFB. The sand trap measured 2.5 feet by 4.5 feet in plan and extended approximately 3.5 feet below the pavement. The sand trap discharged to a

rectangular leach field approximately 300 square feet, located approximately 60 feet east of the wash rack.

History

SWMU 127 became active in 1977. However, the leach field ceased to function in the late 1980s. The old leach field was bypassed and an OWS was subsequently installed in line with the wash rack's drainpipe and downstream from the sand trap in 1991. The original leach field remains in place, but is no longer used. Wastewater now drains to a new leach field approximately 40 feet southeast of the wash rack. Potential contaminants include JP-4 fuel, oil and grease.

The wash rack sand trap continues to receive heavy usage. The wastewater from the OWS discharges to a new leach field located northeast of the former leach field, and recovered petroleum products are temporarily stored in the OWS for future recycling.

Evaluation of Relevant Information

During the Phase I RFI, eight borings were installed. Two 10-foot borings were drilled through holes cut in the concrete wash rack to sample the soil beneath the pad. Soil samples were collected from the 0.5- to 2-foot, 2- to 4-foot, 4- to 6-foot, and 8- to 10-foot depth intervals. Minor visual and olfactory indications of contamination, probably attributable to spillage of JP-4 jet fuel on the wash rack, were found in the soils directly beneath the concrete pad.

One 60-foot boring was drilled adjacent to the OWS and five 60-foot borings were drilled within the new and abandoned leach fields. Soil samples were collected from the surface and from the 1.5- to 3.5-foot, 4- to 6-foot, 8- to 10-foot, 18- to 20-foot, 28- to 30-foot, 38- to 40-foot, 48- to 50-foot, and 58- to 60-foot depth intervals. Odors indicating subsurface contamination beyond the wash rack were encountered during the drilling of boring 12708, located in the new leach field.

Surficial samples were also collected from directly beneath the concrete wash rack and from the 0.2- to 0.5-foot depth interval in areas with plant cover to provide surface soil data for risk assessment purposes. Six organic compounds and three metals were found at levels exceeding the corresponding RBCs. The highest concentrations of organics and metals were detected in near-surface samples.

No additional data was collected as part of the BRA. However, a human health and ecological risk assessment that considered both present and future potential receptors, and all appropriate exposure pathways, was performed on the data collected during the Phase I RFI. The primary contributor to the risk was ingestion of PAHs in surface soils. The maximum potential excess human risk at SWMU 127 fell within the USEPA's target risk range at hazardous waste sites, and indicated that no unacceptable risk was expected. Based on the results of the BRA, no unacceptable human health or ecological risks due to chemical releases were expected from this SWMU. Therefore, NFA was recommended at this SWMU.

The purpose of the Phase II RFI was to further characterize the nature and extent of contamination in the area of SWMU 127. In addition, the Phase II included a risk screening to verify whether the recommendation for NFA based on the BRA was appropriate for SWMU 127.

During the Phase II RFI, eight borings were installed. Two borings to depths of 10 feet were drilled at the location of the POL wash rack. Three borings to depths of 60 feet were drilled in the area of the historic

leach field and three borings to 60 feet were drilled in the area of the new leach field. Surface soil samples from all borings were collected from 0 to 0.5 feet. All eight borings were also sampled at intervals of 3 to 5 feet and 8 to 10 feet. Other samples collected from the 60-foot borings included depths of 13 to 15 feet, 18 to 20 feet, 23 to 25 feet, 28 to 30 feet, 33 to 35 feet, 38 to 40 feet, 48 to 50 feet, and 58 to 60 feet.

The Phase II RFI sampling results confirmed that contamination in the area of SWMU 127 is confined mainly to shallow soils. The NMED action levels for BTEX and benzene were not exceeded, but the maximum concentration of TRPH (11,600 mg/kg) did exceed the corresponding NMED action level of 1,000 mg/kg. However, TRPH was not detected in the 58- to 60-foot interval in any of the borings. Based on the fact that the depth to groundwater at Cannon AFB is greater than 250 feet, it is not likely that the TRPH would impact the site groundwater.

Eight metals detected during the Phase II RFI exceeded the background levels, and six of these metals exceeded the levels detected during the Phase I RFI. Seventeen organic compounds were also detected at levels exceeding the concentrations detected during the Phase I. However, only one compound, dibenzo(a,h)anthracene, exceeded the residential soil RBCs. The risk posed by the maximum detected concentration of this compound was within the acceptable USEPA target risk range for exposure to chemicals released from hazardous waste sites. Because there were no unacceptable health risks associated with SWMU 127, the Phase II RFI recommended that no further investigation was necessary for this SWMU.

Results of the human health and ecological risk evaluations indicated that there was no unacceptable risk to human health and the environment based on the maximum detected concentrations of COCs in the soil at SWMU 127. In addition, results of the vadose zone fate and transport modeling showed, assuming sorption, dispersion, and biodegradation occurred, that the COCs would not reach groundwater above the maximum allowable concentrations for drinking water. The risk evaluations combined with the modeling were used to determine that the NFA alternative would be protective of human health and the environment at the lowest cost.

Basis of Determination

SWMU 127 has been determined to be appropriate for NFA based on NMED NFA Criterion 5: The SWMU has been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected future land use.

58. SWMU 128, Oil/Water Separator Near Tank 4095 (#2) and Leach Field

Location

Only one oil/separator (SWMU 127, Sand Trap and Leach Field for Facility 4095 [#1]) is associated with Facility 4095.

History

SWMU 128 never existed.

Evaluation of Relevant Information

The area misidentified as SWMU 128, Oil/Water Separator Near Tank 4095 (#2) and Leach Field, does not exist at Cannon AFB.

Groundwater at Cannon AFB has been located at a depth greater than 250 feet; as such, the area misidentified as SWMU 128 contained no means for groundwater discharges to occur.

Basis of Determination

SWMU 128 has been determined to be appropriate for NFA based on NMED NFA Criterion 1: SWMU 128 does not exist.

59. AOC A, MOGAS Spill Site

Location

AOC A, Motor Gasoline (MOGAS) Spill Site, is the name assigned to an area along Argentina Avenue, across from the refueling area of Facility No. 379 at Cannon AFB.

History

On two occasions in the early 1960s, fuel trucks overturned into a ditch located in this area and spilled unknown quantities of MOGAS (estimated at 2,000 to 3,000 gallons each).

Evaluation of Relevant Information

No formal investigations of the area misidentified as AOC A have been performed. However, after the soil that appeared to be visually impacted was discovered, samples were collected. Barium was the only chemical detected in the analyses above the laboratory detection limits, and the level detected (1.7 mg/L) was well below the regulatory level as defined by the RCRA TCLP (100 mg/L). Therefore, no significant contamination was discovered in the area identified as AOC A. These results were provided to USEPA Region VI as an attachment to a letter from Gen. Guth, Commander Cannon AFB, dated June 29, 1994.

The release at this site was an accidental spill and, therefore, did not qualify as an AOC or a SWMU. Accidental spills are not included in the definition of a SWMU as defined in the following excerpt from the USEPA RFA Guidance: "The definition does not include accidental spills from production areas and units in which wastes have not been managed (e.g., product storage areas)."

Groundwater at Cannon AFB has been located at a depth greater than 250 feet; as such, the area misidentified as AOC A contained no means for groundwater discharges to occur.

Basis of Determination

AOC A has been determined to be appropriate for NFA based on NMED NFA Criterion 2: This SWMU/AOC has never been used for the management (i.e., generation, treatment, storage and/or disposal) of RCRA solid waste or hazardous wastes and/or constituents or other CERCLA hazardous substances.

60. AOC B, J-P 4 Fuel Spill Site

Location

AOC B, Jet Propellant 4 (JP-4) Fuel Spill Site, is the name assigned to an area located in the west-central portion of Cannon AFB.

History

An estimated 400 gallons of JP-4 spilled from an aircraft fuel tank onto a concrete parking apron during the incident, as a result of a broken fuel line coupling.

Evaluation of Relevant Information

The release at this site was an accidental spill and, therefore, did not qualify as an AOC or a SWMU. Accidental spills are not included in the definition of a SWMU as defined in the following excerpt from the USEPA RFA Guidance: "The definition does not include accidental spills from production areas and units in which wastes have not been managed (e.g., product storage areas)."

Groundwater at Cannon AFB has been located at a depth greater than 250 feet; as such, the area misidentified as AOC B contained no means for groundwater discharges to occur.

Basis of Determination

AOC B has been determined to be appropriate for NFA based on NMED NFA Criterion 2: This SWMU/AOC has never been used for the management (i.e., generation, treatment, storage and/or disposal) of RCRA solid waste or hazardous wastes and/or constituents or other CERCLA hazardous substances.

61. AOC C, Blown Capacitor Site

Location

AOC C, the Blown Capacitor Site, is the location of a power pole that houses six capacitors at Cannon AFB.

History

Lightning struck the power pole in 1978 and ruptured three of the capacitors. Approximately 6 gallons of oil, believed to contain PCBs, were released and spilled onto the ground.

Evaluation of Relevant Information

The IRP Records Search determined that the removal activities completed in the area of AOC C were adequate and would have eliminated any potential contamination. The site did not present significant concern for adverse effects to human health or to the environment. Based on this, IRP Phase II studies, including sampling and analytical testing, were not warranted for AOC C. No formal investigations of the area identified as AOC C have been performed. However, after the spill occurred, the contaminated soil was excavated, placed in 55-gallon drums, and sent for off-site disposal. In addition, the IRP Records

Search determined that the removal activities completed in the area of AOC C were adequate and would have eliminated any potential contamination.

The Blown Capacitor Site warranted NFA because the release at this site was an accidental spill and, therefore, did not qualify as an AOC. Accidental spills are not included in the definition of an SWMU as defined in the following excerpt from the USEPA RFA Guidance: "The definition does not include accidental spills from production areas and units in which wastes have not been managed (e.g., product storage areas)."

Groundwater at Cannon AFB has been located at a depth greater than 250 feet; as such, the area misidentified as AOC C contained no means for groundwater discharges to occur.

Basis of Determination

AOC C has been determined to be appropriate for NFA based on NMED NFA Criterion 2: This SWMU/AOC has never been used for the management (i.e., generation, treatment, storage and/or disposal) of RCRA solid waste or hazardous wastes and/or other constituents, or other CERCLA hazardous substances.

62. AOC E, Runway Rubble Pile

Location

AOC E, the Runway Rubble Pile, measures approximately 1,000 feet long by 200 feet wide and has an average height of approximately 2 to 3 feet. The AOC is located approximately 120 feet east of a former runway that, in turn, is located east of the current runway. The rubble pile trends north-south, parallel to the former runway.

History

AOC E was discovered in 1995 after a brush fire exposed the debris pile. A historical documents review indicated that the debris had been piled at the site sometime between 1959 and 1966. The debris is believed to have been stripped from a runway constructed during World War II during its demolition. No records were found that indicated any other past use of the site.

Evaluation of Relevant Information

During the SI, eight borings drilled to maximum depths of 40 feet using a drill rig were sampled. Soil samples were collected from the 0- to 2-foot, 3- to 5-foot, 8- to 10-foot, 18- to 20-foot, 28- to 30-foot, and 38- to 40-foot depth intervals in these borings. Four other borings drilled to maximum depths of 10 feet using a hand auger were also sampled. Soil samples were collected from the 0- to 2-foot, 3- to 5-foot, and 8- to 10-foot depth intervals in these borings. Borings were located near anomalies identified by the geophysical survey. No visual evidence of contamination was observed during this investigation.

Low concentrations of one VOC, toluene, one SVOC, phenol, and two pesticides, DDT and DDE were detected in at least one surface soil sample at AOC E. In addition, eleven metals, aluminum, antimony, beryllium, cadmium, chromium, iron, magnesium, nickel, potassium, vanadium, and zinc, were also detected above established background levels in at least one surface soil sample at AOC E. Low

concentrations of four VOCs, carbon disulfide, methyl ethyl ketone, methyl isobutyl ketone, and toluene, three SVOCs, di-n-butyl phthalate, di-n-octyl phthalate and n-nitrosodiphenylamine, and two pesticides, DDT and DDE were detected in at least one subsurface soil sample at AOC E. In addition, ten metals aluminum, arsenic, barium, beryllium, calcium, chromium, copper, lead, mercury, and potassium, were detected above background levels in at least one subsurface soil sample at AOC E.

The maximum detected concentrations of all organic compounds and of all metals that exceeded background levels in surface and subsurface soil samples were compared to USEPA Region VI Residential MSSSLs. The results of the risk evaluation found that the cumulative excess cancer risk for AOC E and the cumulative HI for noncarcinogenic health effects met USEPA acceptable levels. Based on this, the SI report recommended NFA for AOC E.

Both the estimated lifetime excess cancer risks and the estimated cumulative adverse health effects met acceptable USEPA levels for soils at AOC E. In addition, the Region VI MSSSLs, used as screening criteria in the human health risk evaluation, are highly conservative and, as such, are protective of ecological and human health. Therefore, an ecological risk assessment was not warranted for AOC E.

Groundwater at Cannon AFB has been located at a depth greater than 250 feet; as such, this AOC contained no means for groundwater discharges to occur.

Basis of Determination

AOC E has been determined to be appropriate for NFA based on NMED NFA Criterion 5: The AOC has been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected future land use.

63. AOC F, Calibration Target Berm

Location

AOC F, the Calibration Target Berm, is irregularly shaped, approximately 15 feet high, and comprised mainly of sand soil with numerous rock fragments, sparse vegetation, and some debris. A former target support, constructed of telephone poles, iron bars, and concrete, is located approximately 150 feet north of the berm. The AOC is located to the southwest of the current small arms firing range at Cannon AFB.

History

AOC F was used as a backstop when bore sighting aircraft weaponry in the 1950s and 1960s. The site is not currently used.

Evaluation of Relevant Information

During the SI, nine borings were drilled to maximum depths of 4 feet from the top surface of the berm using a hand auger. The hand auger borings were completed in an approximate grid atop the berm. Soil samples were collected from the berm's surface and from the 1.5- to 2-foot and the 3.5- to 4-foot depth intervals in these borings. Nine other surface samples were collected from locations near the former

target stand, between the stand and the berm, and around the berm at depths of 0- to 2-feet using a hand auger. All samples were sieved using a 0.25-inch mesh screen to remove debris.

Concentrations of arsenic and lead were detected above established background levels in soil samples collected at AOC F. Although concentrations of arsenic exceeded the corresponding MSSSLs, all concentrations fell within the established USEPA Region VI background range for arsenic in soil. Arsenic often occurs naturally along with lead and has been used historically as a rodenticide. Therefore, the concentrations of arsenic detected may not be site-related. The concentrations of lead detected in soil at AOC F did not exceed the residential or industrial MSSSLs. Therefore, the SI report recommended NFA for AOC F.

The risk evaluation found that no unacceptable adverse health effects were anticipated due to arsenic or lead concentrations in soil at AOC F. In addition, the Region VI MSSSLs, used as screening criteria in the human health risk evaluation, are highly conservative and, as such, are protective of ecological and human health. Therefore, an ecological risk assessment was not warranted for AOC F.

The potential for groundwater contamination was considered minimal since the depth to groundwater is greater than 250 feet, and the soil sampling results demonstrate that contaminants are not being transported significantly in a vertical direction beneath the SWMU.

Basis of Determination

AOC F has been determined to be appropriate for NFA based on NMED NFA Criterion 5: The AOC has been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected future land use.

64. AOC G, Disturbed Area-North Housing Site

Location

AOC G, the Disturbed Area - North Housing Site, measured approximately 735 feet long by 320 feet wide and was located in the northwest corner of Cannon AFB housing area. At least five housing units are located within the area of the disturbance.

History

AOC G was identified in 1959 historical aerial photographs, and the site appeared inactive in 1966 historical aerial photographs. The reason for the disturbance is unknown.

Evaluation of Relevant Information

During the SI, eight borings were drilled to maximum depths of 40 feet. Soil samples were collected from the 0- to 2-foot, 3- to 5-foot, 8- to 10-foot, 18- to 20-foot, 28- to 30-foot, and 38- to 40-foot depth intervals. A uniform grid pattern was not possible due to the presence of buildings and utilities at the site, and neither the historical aerial photographs nor the EM-61 data suggested the need for specific boring placements. No visual evidence of contamination was observed during this investigation.

Low concentrations of three VOCs, methyl ethyl ketone, methyl isobutyl ketone, and toluene were detected in at least one surface soil sample at AOC G. In addition, thirteen metals, aluminum, beryllium, calcium, chromium, iron, lead, magnesium, mercury, nickel, potassium, sodium, vanadium, and zinc, were also detected above established background levels in at least one surface soil sample at AOC G. Low concentrations of five VOCs, carbon disulfide, chloromethane, methyl ethyl ketone, methyl isobutyl ketone, and toluene, and nine SVOCs, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, di-n-butyl phthalate, di-n-octyl phthalate, fluoranthene, and pyrene were detected in at least one subsurface soil sample at AOC G. In addition, ten metals, aluminum, barium, calcium, chromium, copper, lead, magnesium, mercury, potassium, and sodium were detected above background levels in at least one subsurface soil sample at AOC G.

The maximum detected concentrations of all organic compounds and of all metals that exceeded background levels in surface and subsurface soil samples were compared to USEPA Region VI Residential MSSSLs. Based on the results of the risk evaluation, no unacceptable human health risks due to chemical releases were expected from this AOC. Therefore, NFA was recommended for AOC G.

An ecological risk screening was not included as part of the SI, but a human health risk screening was conducted. Both the estimated lifetime excess cancer risks and the estimated cumulative adverse health effects met acceptable USEPA levels for soils at AOC G. The Region VI MSSSLs, used as screening criteria, are highly conservative and, as such, are protective of ecological and human health.

The potential for groundwater contamination was considered minimal since the depth to groundwater is greater than 250 feet, and the soil sampling results demonstrate that contaminants are not being transported significantly in a vertical direction beneath the SWMU.

Basis of Determination

AOC G has been determined to be appropriate for NFA based on NMED NFA Criterion 5: The AOC has been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected future land use.

65. AOC H, Disturbed Area-South Housing Site

Location

AOC H, the Disturbed Area - South Housing Site, was an irregularly shaped area that measured several hundred feet long by approximately 350 feet across. It was located in the northwest corner of Cannon AFB housing area, south of AOC G-North Housing Site.

History

AOC H was identified as a blowout in 1951 historical aerial photographs, and the site appeared to contain a disturbance in 1954 historical aerial photographs. The reason for the disturbance is unknown. At least five housing units are located within the area of the disturbance.

Evaluation of Relevant Information

During the SI, six borings were drilled to a maximum depth of 40 feet. Soil samples were collected from the 0- to 2-foot, 3- to 5-foot, 8- to 10-foot, 18- to 20-foot, 28- to 30-foot, and 38- to 40-foot depth intervals in these borings. No visual evidence of contamination was observed during this investigation.

Low concentrations of two VOCs, methyl isobutyl ketone and toluene, one SVOC, di-n-octyl phthalate, and two pesticides, DDT and DDE were detected in at least one surface soil sample at AOC H. In addition, eleven metals, aluminum, antimony, arsenic, chromium, iron, lead, magnesium, mercury, potassium, sodium, and vanadium, were detected above established background levels in at least one surface soil sample at AOC H. Low concentrations of five VOCs, 2-hexanone, benzene, methyl ethyl ketone, methyl isobutyl ketone, and toluene, two SVOCs, benzyl butyl phthalate and di-n-butyl phthalate, and one pesticide, DDE were detected in at least one subsurface soil sample at AOC H. In addition, eleven metals, aluminum, barium, beryllium, calcium, chromium, cobalt, copper, lead, mercury, potassium, and zinc were detected above background levels in at least one subsurface soil sample at AOC H.

The maximum detected concentrations of all organic compounds and of all metals that exceeded background levels in surface and subsurface soil samples were compared to USEPA Region VI Residential MSSLS. Based on the results of the risk evaluation no unacceptable human health risks due to chemical releases were expected from this AOC. Therefore, NFA was recommended for AOC H.

An ecological risk screening was not included as part of the SI, but a human health risk screening was conducted. Both the estimated lifetime excess cancer risks and the estimated cumulative adverse health effects met acceptable USEPA levels for soils at AOC H. The Region VI MSSLS, used as screening criteria, are highly conservative and, as such, are protective of ecological and human health.

The potential for groundwater contamination was considered minimal since the depth to groundwater is greater than 250 feet, and the soil sampling results demonstrate that contaminants are not being transported significantly in a vertical direction beneath the SWMU.

Basis of Determination

AOC H has been determined to be appropriate for NFA based on NMED NFA Criterion 5: The SWMU/AOC has been characterized in accordance with the current applicable state and federal regulations, and the available data has indicated that the contaminants present did not pose an unacceptable level of risk under current and projected future land use.

66. AOC 36, Building #214 Parking Lot

Location

AOC 36, Building #214 Parking Lot, at Cannon AFB is the name assigned to an area of potential soil contamination while analytical results were pending.

History

During excavation activities to prepare the site for a parking lot, a contractor reported discovering an area of potentially contaminated soil. Solid waste was not discovered at AOC 36, and there is no reason, other than the excavator's report, to suspect that this site was ever a SWMU or an AOC.

Evaluation of Relevant Information

No formal investigations of the area identified as AOC 36 have been performed. However, after the soil that visually appeared to be impacted was discovered, samples were collected. Barium was the only chemical detected in the analyses above the laboratory detection limits, and the level detected (1.7 mg/L) was well below the RCRA regulatory level as defined by the Toxicity Characteristic Leaching Procedure (100 mg/L). Therefore, no significant contamination was discovered in the area misidentified as AOC 36. These results were provided to USEPA Region VI as an attachment to a letter from Gen. Guth, Commander Cannon AFB, dated June 29, 1994.

Groundwater at Cannon AFB has been located at a depth greater than 250 feet; as such, the area misidentified as AOC 36 contained no means for groundwater discharges to occur.

Basis of Determination

AOC 36 has been determined to be appropriate for NFA based on NMED NFA Criterion 2: This SWMU/AOC has never been used for the management (i.e., generation, treatment, storage and/or disposal) of RCRA solid waste or hazardous wastes and/or constituents or other CERCLA hazardous substances.