

APPENDIX J

INSTALLATION RESTORATION PROGRAM SITE INFORMATION

This appendix outlines the investigation and cleanup activities planned or implemented at Marine Corps Base Camp Pendleton Installation Restoration (IR) Program sites. Further detail information on specific environmental activities and investigation results for each IR Program site are contained in documents in the information repositories at the MCB Camp Pendleton Base Library and the City of Oceanside Public Library - Main Branch. These documents are also included in the administrative record file, which is available for public review, at the Southwest Division of the Naval Facilities Engineering Command (SOUTHWESTNAVFACENGCOM).

MCB Camp Pendleton was placed on the federal National Priorities List (NPR) of hazardous waste sites on November 15, 1989. Hazardous waste at the Base was generated through various Base operations including maintenance and repair of trucks, tanks, and aircraft. Base support activities also generated waste. As discussed in Section 2.3.2.6, the IR Program at MCB Camp Pendleton includes 62 sites grouped into five Operable Units (OUs -1, -2, -3, -4, and -5). Table 2-1 (Section 2.3.2.6) lists the sites included in each OU, and they are discussed in detail here.

J.1 OPERABLE UNIT 1

The Record of Decision (ROD) for OU-1 was signed on December 12, 1995, documenting the restoration and need for 'no further action' of four IR Program sites (or specific site media- e.g. soil, groundwater):

- **4** - Marine Corps Air Station (MCAS) Drainage Ditch (soil)
- **4A** - MCAS Concrete-Lined Surface Impoundment (soil)
- **9** - Stuart Mesa Waste Stabilization Pond in 41 Area (soil)
- **24** - Morale, Welfare and Recreation Maintenance Facility in 26 Area (soil, groundwater)

J.2 OPERABLE UNIT 2

The ROD for OU-2 was signed on September 29, 1997. Removal actions conducted at OU-2 shortened the cleanup process, and all 13 IR Program sites (or specific site media) were restored to unrestricted Base use:

- **2B** - Grease Disposal Pit in 32 Area (soil, groundwater)
- **3** - Pest Control Wash Rack (soil, groundwater)
- **5** - Firefighter Drill Field (soil, groundwater)
- **6** - Defense Reutilization Marketing Office (DRMO) Scrap Yard and Bldg. 2241 (soil)
- **8A** - Las Pulgas Landfill and Las Flores Creek (soil, groundwater)

- **19** - ACU-5 (LCAC) Surface Impoundments in 31 Area (soil, groundwater)
- **20** - Las Pulgas Vehicle Wash Rack in 43 Area (soil, groundwater)
- **22** - Unlined Surface Impoundment in 23 Area (soil, groundwater)
- **28** - Trash Hauler's Maintenance Area in 26 Area (groundwater)
- **31** - Bldg. 210801 Transformer (soil, groundwater)
- **43** - Santa Margarita Basin Groundwater Study (groundwater)
- **44** - Santa Margarita Basin Surface Water & Sediment Study (surface water, sediment)
- **45** - Santa Margarita Coastal Wetland Study (soil, groundwater, sediment)

J.3 OPERABLE UNIT 3

The ROD for OU-3 was signed on March 31, 1999. A 'no further action' decision was documented for 23 of the 28 OU-3 sites:

- **1B** - Refuse Burning Ground in 11 Area (soil, groundwater)
- **1C** - Refuse Burning Ground in 13 Area (soil, groundwater)
- **1I** - Refuse Burning Ground in 63 Area (soil, groundwater)
- **2C** - Grease Disposal Pit in 33 Area (soil, groundwater)
- **2D** - Grease Disposal Pit in 43 Area (soil, groundwater)
- **2E** - Grease Disposal Pit in 53 Area (soil, groundwater)
- **2F** - Grease Disposal Pit in 62 Area (soil, groundwater)
- **2G** - Grease Disposal Pit in 31 Area (soil, groundwater)
- **10** - Sewage Sludge Composting Yard in 26 Area (soil, groundwater)
- **16** - Bldgs. 22151 and 22187 Ditch Confluence and Ditch in 22 Area (soil)
- **17** - Bldg. 22187 Marsh and Ditch in 22 Area (sediment, surface water)
- **18** - Bldg. 1687 Spill and Ditch in 13/16 Area (soil, groundwater)
- **27** - Ditches Behind Bldg. 22210 in 22 Area (soil)
- **32** - Drum Storage and Drainage Between Bldgs. 21303 and 41366 (soil, groundwater)
- **34** - Combat Engineers Maintenance Facility, Bldgs. 62580-62583 (soil, groundwater)
- **35** - Former Sewage Treatment Plant Facility in 25 Area (soil, groundwater)
- **36** - Debris Pile Area Behind Ponds at Sewage Treatment Plant II (soil, groundwater)
- **37** - Pesticide and POL (petroleum, oil, lubricant) Handling Areas at San Clemente Ranch (soil, groundwater)
- **38** - Sewer Line, Bldg. 52188 in 52 Area (soil, groundwater)
- **39** - Sewer Line, Bldgs. 41300 and 41346 in 41 Area (soil, groundwater)
- **40** - Sewer Line, Bldg. 13103 in 13 Area (soil, groundwater)
- **41** - Sewer Line, Bldg. 13128 in 13 Area (soil, groundwater)
- **42** - Sewer Line, Bldg. 13129 in 13 Area (soil, groundwater)

Cleanup actions were conducted and have been completed at three OU-3 sites:

- **Site 1E** - Refuse Burning Ground in 32 Area. Site 1E is located in 32 Area, along MCAS Road, approximately 3/4 mile northwest of Stuart Mesa Road, and approximately 3,000 feet from the Santa Margarita River. The burning ground covers an area of approximately 200 by 120 feet. The media of concern at Site 1E, was soil and groundwater.
- **Site 1F** - Refuse Burning Ground in 43 Area. Site 1F is located in 43 Area, approximately 250 feet northeast of Basilone Road and immediately northwest of its intersection with Las Pulgas Road. The burning ground covered an area of approximately 275 by 280 feet. The site is bordered on the southeast by Sites 2D and 20, on the north and east by moderate to dense vegetation, and on the west and south by vegetation and Basilone Road. The site slopes gently to the southeast and eventually drains into Pulgas Creek. The media of concern at Site 1F was soil and groundwater.
- **Site 2A** - Grease Disposal Pit in 14 Area. Site 2A is located off Pilgrim Creek East Trails Road. The grease disposal pit boundary is approximately 200 feet long and 300 feet wide. The site is bordered on the west and southwest by Site 1A and on the north, east and south by light to moderate vegetation. Site 2A slopes gently to the southwest and eventually drains into a stream-cut canyon adjacent to Site 1A. Site 2A was one of the seven mess hall grease disposal pits scattered around the Base. The grease disposal pits were typically shallow (less than 10 feet deep) and covered .25 to .5 acre. The pits were used for disposal of grease from food preparation at mess hall between 1942 and 1980. Closure of these pits reportedly involved allowing the contained greasy materials to decay to a semisolid state and then backfilling the pits with native soil. Visual inspection conducted during 1990 indicated that petroleum, oil, and lubricants (POLs) may also have been disposed of in some of the pits. Media of concern at Site 2A were soil and groundwater.

Cleanup action is currently being conducted at the remaining two OU-3 sites discussed below:

- **Site 1A** - Refuse Burning Ground in 14 Area. Until 1970, all refuse at the Base was disposed of by burning. The entire Base generated an estimated 20,000 to 28,000 tons of solid waste annually. Site 1A was among MCB Camp Pendleton's nine burning grounds. All burning grounds were closed, covered with native soil, and allowed to revert to natural vegetation between the late 1960s and 1972. Although there are no confirmed reports of hazardous waste disposal at the burning ground sites, the burning grounds were the primary on-base disposal areas and, thus, could have been used for disposal of hazardous wastes.

Site 1A is located in a densely vegetated, undeveloped training region in 14 Area, immediately northeast of Base sewage treatment plant No. 1. The 14 Area burning ground is no longer in operation, and land surrounding the site is covered with natural vegetation. The nearest troop housing is approximately 0.25 mile west of the site and the nearest family housing, De Luz Housing, is approximately 2 miles north of the site. The media of concern at Site 1A are soil and groundwater.

- **Site 7 - Box Canyon Landfill.** Box Canyon Landfill is located near the southwest corner of the Base in 20 Area. It is approximately 2 miles south of Vandegrift Boulevard and less than a mile northeast of Stuart Mesa Road. It is about 2 miles from the Pacific Ocean, in a canyon near the Santa Margarita River. The landfill covers about 27.5 acres (1,500 feet by 1,000 feet).

The site served as a stone quarry from about 1946 through 1970. During this period, stone was removed from the area, crushed, and used for various construction projects on the Base. Landfill operations first began at the site in 1974 and continued until May 1984. In addition to household and construction wastes, this site reported receiving dry cleaning wastes, contaminated soil (fuels, POLs, solvents, thinners, paint wastes and chemical cleaners), solidified paints, thinners, strippers, epoxies, sealants and solvents. When landfill operations ceased, the wastes were covered with excess soil from on-base construction projects.

In 1993, the landfill was identified as one of the original 54 sites in MCB Camp Pendleton's IR Program. In 1996 and 1997, treated soil from IR Site 3 (26 Area pest Control Wash Rack) and Site 6 (22 Area DRMO Scrap Yard) was placed in the landfill and covered with 6-foot-thick compacted soil. In 1999, wastes from IR Sites 1A, 1E, 1F (Refuse Burning Grounds) and 2A (14 Area Grease Disposal Pit) were placed in the landfill and covered with a one-foot-thick layer of compacted soil. This layer of compacted soil was covered with a biodegradable polymer material - a special protective film to prevent the cover from washing away during the winter rains. A six-foot cap will be added and planted with native vegetation to complete the landfill closure. The media of concern at Site 7 are soil and groundwater.

Final construction of a closure cap for the Box Canyon Landfill is underway with completion scheduled for December 2001 at which time this site will enter into long term landfill gas and groundwater monitoring.

J.4 OPERABLE UNIT 4

The ROD for OU-4 is planned to be completed in 2002. It will address remedial actions for the following 10 sites/site components.

- **Site 1D - Refuse Burning Ground in 20 Area.** Site 1D was among MCB Camp Pendleton's nine burning grounds. The site is located in 20 Area, immediately north of the intersection of Vandegrift Boulevard and Stuart Mesa Road. The burning ground covers an area of approximately 400 by 220 feet. Surrounding the site on the east and south are plateaus that rise 150 feet above the burning ground. The site is bordered on the north and west by relatively flat land containing moderate to dense vegetation; the Santa Margarita River flows through this area. To the northeast is the Box Canyon Landfill; to the south, across Stuart Mesa Road, is the Twin Lake Sewage Disposal Plant. An unpaved road runs along the northern boundary of the site. Groundwater is the medium

of concern at Site 1D.

- **Site 1E1** - Subsite of Refuse Burning Ground in 32 Area. Site 1E1 is a subarea of Site 1E, (see OU-3). It is located in 32 Area, along MACS Road, approximately 3/4 mile northwest of Stuart Mesa Road, and approximately 3,000 feet from the Santa Margarita River. Soil is the medium of concern at Site 1E1.
- **Site 1H** - Refuse Burning Ground in 62 Area. Site 1H is located near the western perimeter of the Base in 62 Area. The land surrounding Site 1H is undeveloped and covered with natural vegetation. The surrounding area is classified as a maneuver area. This burning ground is no longer in operation, and military and civilian personnel are only present on site occasionally. South of Site 1H, the 62 cantonment area contains several hundred buildings that are used for a variety of purposes, including military training, troop housing, mess, recreation, and administration. RI Site 2F is immediately east of Site 1H. The media of concern at Site 1H are soil and groundwater.
- **Site 4** - MCAS Drainage Ditch. Sites 4 and 4A are located near the southern edge of the Marine Corps Air Station (MCAS), parallel to Vandegrift Boulevard. Site 4 consists of a drainage ditch that parallels the 23 Area MCAS. The approximate 5-foot deep by 20-foot wide drainage ditch is located between the MCAS flight-line operations and the former Atchison, Topeka, and Santa Fe (AT&SF) railroad tracks along Vandegrift Boulevard, in the Chappo sub-basin of the Santa Margarita River basin.

The drainage ditch was used from the 1940s through the early 1980s for the disposal of liquid wastes generated by flight line operations and also received contaminated runoff from spills and aircraft washing. An estimated 11,000 to 25,000 gallons of various types of solvents and fuels were reported to have been placed in the drainage ditch prior to 1982. Oils, hydraulic fluids, battery electrolyte solutions, and aircraft washing wastewater were also discharged to the ditch. Groundwater is the medium of concern at this site under OU-4; Site 4 soil was addressed under OU-1.

- **Site 4A** - MCAS Concrete-Lined Surface Impoundment. In May 1990, Site 4 was expanded to include the concrete-lined surface impoundment, designated Site 4A. The approximately 250-foot by 50-foot impoundment is located between the MCAS drainage ditch and MCAS, southwest of building 2378. Site 4A catches the discharge from the hangar deluge system for fire suppression. Groundwater is the medium of concern at this site under OU-4; Site 4A soil was addressed under OU-1.
- **Site 6** - DPDO (DRMO) Scrap Yard and Building 2241. The Defense Property Disposal Office (DPDO) scrap yard was located at the southwest end of 22 Area and operated from the 1950s until 1979. The name of the yard has changed several times (DPDO, DPRO, and DRMO scrap yard). Scrap metals, salvage items, hazardous materials, and transformer fluids were taken to the scrap yard. The scrap yard operated from the early 1950s to 1979 as a storage, processing and disposal area for scrap metals, salvage items, hazardous materials and PCB transformer fluids. The yard was divided into four separate areas according to type of materials handles or disposed, as follows from west to east:

PCB spreading area, wood burning area, battery electrolyte disposal area, and hazardous waste drum storage area. Groundwater is the medium of concern under OU-4; Site 6 soil was addressed under OU-2.

- **Site 16** - Buildings 22151 and 22187 Ditch Confluence and Ditch in 22 Area. This site is located in the southeastern portion of the 22 Area Marine Corps Air Station (MCAS) and immediately north of site 17. This site received discharge from two oil/water separators that may not have been working properly. The ditch also received runoff from previous operations that used POLs and solvents. In addition, Base personnel report that a diesel spill occurred in this area and may have affected this site and Site 17. No information is available on the quantities of contaminants received by the ditch or contaminant concentration within the sediment (SWDIV 1991). Groundwater is the medium of concern under OU-4; Site 16 soil was addressed under OU-3.
- **Site 17** - Building 22187 Marsh and Ditch in 22 Area. This site is located in the southeastern portion of the MCAS and receives surface runoff from building 22187 and the adjacent area. Previous operations in the building 22187 area used POLs, solvents, and corrosives. These substances were stored in this area. A diesel spill is reported to have flowed into the drainage ditch immediately north of building 22187. No information is available on the quantities of contaminants received by this ditch (SWDIV 1991). Groundwater is the medium of concern under OU-4; Site 17 sediment and surface water were addressed under OU-3.
- **Site 27** - Ditches Behind Building 22210 in 22 Area. This site is located in the southeastern portion of the MCAS and approximately 1 mile from the Santa Margarita River. Site 27 is located southwest of and adjacent to the ditch confluence in Site 16. The unlined densely vegetated ditches are approximately 10 feet wide and have seasonal surface water flow. The drainage discharge point from the ditches is the Santa Margarita River. Groundwater is the medium of concern at Site 27; Site 27 soil was addressed under OU-3.
- **Site 30** - Firing Range Soil Fill in 31 Area. Site 30 is located approximately 0.25 mile west of the intersection of Stuart Mesa Road and MACS Road. The site is adjacent to the Santa Margarita River and is subject to flooding during times of peak rainfall.

Site 30 consists of red stained soil fill material along a dirt road (the dirt road leads to an agricultural area that is leased to civilians and is frequently traveled) and includes three separate areas, each about 200 feet long and 80 feet wide. The soil reportedly contains bullets from a 31 Area firing range. Soil from the firing range may have been transported to this location for use in road construction sometime during the mid- to late 1960s and possibly into the 1970s. Some of the soil could come into contact with the Santa Margarita River during high river levels. Extensive vegetation is growing over the soil fill areas, providing protection from erosion. Soil is the medium of concern at Site 30.

J.5 OPERABLE UNIT 5

OU-5 is a new Operable Unit and includes the seven IR sites listed below. This OU has just started the remedial investigation process, which includes data gathering and fieldwork to support the development of a Feasibility Study. Schedules for completion will be established after an analysis of the data gathered is completed and concurrence on a remedial action is obtained.

- **Site 1A1** - Second Refuse Burning Ground in 14 Area. Site 1A1 is a subarea of Site 1A (see OU-3). It is located in a densely vegetated, undeveloped training region in 14 Area, immediately northeast of Base sewage treatment plant No. 1. The 14 Area burning ground is no longer in operation and land surrounding the site covered with natural vegetation. The nearest troop housing is approximately 0.25 mile west of the site and the nearest family housing, De Luz Housing, is approximately 2 miles north of the site. The media of concern at Site 1A1 are soil and groundwater.
- **Site 6A** - DPDO (DRMO) Scrap Area. The DPDO scrap yard is located at the southwest end of 22 Area. The name of the yard has changed several times (DPDO, DPRO, and DRMO scrap yard). The scrap yard operated from the early 1950s to 1979 as a storage, processing and disposal area for scrap metals, salvage items, hazardous materials and PCB transformer fluids. The yard was divided into four separate areas according to type of materials handles or disposed, as follows from west to east: PCB spreading area; wood burning area; battery electrolyte disposal area; and hazardous waste drum storage area. Soil is the medium of concern at Site 6A.
- **Site 21** - Surface Impoundment (and adjacent fuel tanks) in 14 Area. This site consists of an unlined ditch near the 14 Area fuel dock, at the Base of a small bluff. The ditch is bermed at both ends and was excavated about 50 years ago to contain fuel spills associated with the 14 Area fuel dock. Three 100,000-gallon concrete underground fuel tanks containing diesel and fuel oil are located upgradient from the bermed ditch. Several spills are reported to have been released into this ditch. In addition, a storage area for solvents and cleaning compounds is located nearby (SWDIV 1991). Groundwater is the medium of concern at Site 21.
- **Site 33** - Armory (Building 520452) and drainage to Southwest in 52 Area. Site 33 is located in 52 Area in the northwester portion on MCB Camp Pendleton. The site is approximately 900 feet northeast of the intersection of Basilone Road and San Juan Road. Site 33 is the 52 Area Armory and consists of the area around building 520452. A former solvent storage and usage area consisting of solvent drums within a concrete-line containment area is located south of building 520452. The site slopes gently to the southeast with surface runoff draining into San Onofre Creek (normally dry) to the south and east of the site. A northeast-to southeast surface water drainage swale traverses the length of the site. The area around Building 52042 is paved and contains no vegetation. The area north of the site is undeveloped and supports native vegetation. East and south of the site is San Onofre Creek, and north is an undeveloped hill that is classified as a

maneuver area. The media of concern at Site 33 are soil and groundwater.

- **Site 62** - Former Asphalt Batch Plant in 62 Area. This site is located north of the 62 cantonment area. Surface soil contamination was observed under each loader at the plant, but no samples were collected. A large oil/water separator had been installed at the plant, but was not maintained and ultimately became filled with weeds. The asphalt plant was abandoned in approximately 1985 but appeared to be operating during a 1985 site survey and during a 1990 site visit (SWDIV 1991). Soil is the medium of concern at Site 62.
- **Site 1111** - Burn Layer in 26 Area. Site 1111 is located in 26 Area in the northeastern portion of MCB Camp Pendleton, approximately 8 miles northeast of the Main Gate and northwest of Vandegrift Boulevard. The site is located adjacent to a southwest-flowing drainage ditch, approximately 2,300 feet east of the Santa Margarita River. The site is currently undeveloped land designated as sensitive habitat.

Site 1111 is adjacent to the former Site 3 Pest Control Wash Rack (OU-2) and is a subarea of Site 3. A removal action was completed at Site 3 in 1997. During removal activities at Site 3, a subsurface layer of ash and burn material was exposed in part of the site. Excavation continued to the sensitive habitat boundary and down to groundwater, 5 to 6 feet below ground surface (bgs). However, the concentrations of the contaminants of concern (COCs) exceeded remediation goals. The remaining burn layer has been designated as Site 1111 and was included as an IR Program site in 1997. The media of concern at Site 1111 are soil and groundwater.

J.6 Multiple Underground Storage Tanks (UST) Sites

In addition to the sites listed above, there are approximately 19 sites on MCB Camp Pendleton previously containing USTs and contamination with CERCLA constituents. The primary constituents of concern at these sites are trichloroethene, tetrachloroethene, metals, and 1,2dichloroethane. The media of concern at these sites are soil and groundwater. The FFA team is currently developing a process for implementing the CERCLA process for investigation and cleanup of these sites.