



DEPARTMENT OF THE ARMY
BASE REALIGNMENT AND CLOSURE
ATLANTA FIELD OFFICE
BRAC ENVIRONMENTAL COORDINATOR
HAMILTON ARMY AIRFIELD
1 BURMA ROAD
NOVATO, CALIFORNIA 94949



August 11, 2004

DAIM-BO-A-HA

Subject: Forwarding the *Work Plan Remedial Action, Excavate Unlined Perimeter Drainage Ditch, Excavate South of the Runway DDT Hotspot, Demolish Revetments*, Hamilton Army Airfield, Novato, CA.

Ms. Naomi Feger
Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

Dear Ms. Feger,

The Army is pleased to provide the *Work Plan Remedial Action, Excavate Unlined Perimeter Drainage Ditch, Excavate South of the Runway DDT Hotspot, Demolish Revetments*, Hamilton Army Airfield, Novato, CA.

A previous version of this document was erroneously submitted to you July 30, 2004. Please replace that submission with the enclosed replacement pages. The Storm Water Pollution Prevention Plan, which is Appendix A, was previously submitted under separate cover. Therefore this submission does not include Appendix A.

This document is submitted in accordance with Board Order No. R2-2003-0076 Site Cleanup Requirements (SCR) – Hamilton Army Airfield. This submittal satisfies SCR Task 2a for the Unlined Perimeter Drainage Ditch and Task 5b for the South of the Runway DDT hotspot.

This document is being submitted to the RWQCB in accordance with SCR provision C8. It is also being distributed in accordance with SCR provision C9 for information.

To support fieldwork this fall, I request your response by September 20, 2004. If you have any questions, please contact me at (415) 883-6386.

Sincerely,

Edward Keller, P.E.
BRAC Environmental Coordinator
Hamilton Army Airfield

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Work Plan Remedial Action Excavate Unlined Perimeter Drainage Ditch, Excavate South of the Runway DDT Hotspot, Demolish Revetments
Hamilton Army Airfield, Novato, CA

August 2004

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Work Plan Remedial Action Excavate Unlined Perimeter Drainage Ditch, Excavate South of the Runway DDT Hotspot, Demolish Revetments
Hamilton Army Airfield, Novato, CA

August 2004

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WORK PLAN

Hamilton Army Airfield Main Airfield Inboard Sites

**Excavate Unlined Perimeter Drainage Ditch
Excavate South of the Runway DDT Hotspot
Demolish Revetments**



REMEDIAL ACTION FOR HAMILTON ARMY AIRFIELD NOVATO, CALIFORNIA

August, 2004

Prepared by:
SACRAMENTO USACE
Environmental Engineering Branch
1325 J Street
Sacramento, CA



U. S. Army Corps
of Engineers
Sacramento District



WORK PLAN

**Hamilton Army Airfield
Main Airfield Inboard Sites**

**Excavate Unlined Perimeter Drainage Ditch
Excavate South of the Runway DDT Hotspot
Demolish Revetments**

REMEDIAL ACTION

**FOR
HAMILTON ARMY AIRFIELD
NOVATO, CALIFORNIA**

SACRAMENTO USACE

August 2004

Prepared by:

**USACE
Environmental Engineering Branch
1325 J Street
Sacramento, CA**

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LIST OF ACRONYMS

BEC	BRAC Environmental Coordinator
BRAC	Base Realignment and Closure
CY	Cubic Yard
CSM	Coastal Salt Marsh
4,4'-DDD	4,4'-Dichlorodiphenyldichloroethane
4,4'-DDE	4,4'-Dichlorodiphenyldichloroethylene
4,4'-DDT	4,4'-Dichlorodiphenyltrichloroethane
DoD	Department of Defense
DQO	Data Quality Objectives
DTSC	Department of Toxic Substance Control
FADL	Field Activity Daily Log
FSP	Field Sampling Plan
GPS	Global Positioning System
HAAF	Hamilton Army Airfield
HDPE	High-Density Polyethylene
IT	IT Corporation
ODD	Outfall Drainage Ditch
PCB	Polychlorinated Biphenyls
PDD	Perimeter Drainage Ditch
PPE	Personal Protective Equipment
QAPP	Quality Assurance Project Plan
ROD/RAP	Record of Decision/Remedial Action Plan
RWQCB	San Francisco Regional Water Control Board
SAP	Sampling and Analysis Plan
SSHSP	Site Specific Health and Safety Plan
SOP	Standard Operating Procedure
SRW	South of the Runway DDT Hotspot
SVOC	Semi-volatile Organic Compound
SW3P	Storm Water Pollution Prevention Plan
UPDD	Unlined Perimeter Drainage Ditch
TPH	Total Petroleum Hydrocarbon
TSD	Total Dissolved Solids
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
VOC	Volatile Organic Compounds
WP	Work Plan

1.0 INTRODUCTION

Through previous sampling events at the South of the Runway DDT Hotspot and Unlined Perimeter Drainage Ditch sites within the main airfield inboard area at Hamilton Army Airfield (HAAF), locations of DDT contamination (with Total DDTs concentrations greater than 1 mg/kg) have been identified. In accordance with the Main Airfield Parcel Record of Decision/Remedial Action Plan (Army, DTSC, RWQCB 2003), soil on the former HAAF property that contains greater than 1 mg/kg Total DDTs must be excavated and disposed of off-site. The project will validate the removal of soil with known or suspected DDT concentrations in excess of 1 mg/kg at the two sites.

This work plan presents the project scope, regulatory authorities, project objectives, work, sampling procedures, and quality control requirements.

1.1 OBJECTIVE

The activities described herein will be performed to advance the environmental closure and Record of Decision/Remedial Action Plan (ROD/RAP) alternative provisions for residual pesticides following the transfer of HAAF. These activities are specific to environmental and ecological interests and are designed to achieve the objective of removing contamination levels that are above established cleanup goals. The concrete revetment pads are being removed to allow for future characterization sampling of the soil beneath them.

1.2 SCOPE OF WORK

This remedial action will be performed under a U.S. Army Corps of Engineers (USACE) contract. This Work Plan describes the construction-related activities required to meet the objective stated above for the Unlined Perimeter Drainage Ditch (UPDD), the South of the Runway DDT Hotspot (SRW) and the revetment pad sites at HAAF.

A site specific Storm Water Pollution Prevention Plan (SW3P) is required and is included as Appendix A. Appendix B is a Field Sampling Plan/Quality Assurance Project Plan (FSP/QAPP) describing the sampling and analytical procedures for the project. Site-specific activities are detailed in Section 2.0. Locations and details of the construction activities are shown on Figures 2-1 through 2-11. The schedule for construction is discussed in Section 4.2.

The primary scope covered by this work plan are summarized below:

Unlined Perimeter Drainage Ditch- Excavation and offsite disposal of soil containing DDT with levels above the cleanup goal of 1 mg/kg.

South of the Runway DDT Hotspot- Excavation and offsite disposal of soil containing DDT with levels above the cleanup goal of 1mg/kg.

Revetments – Demolish concrete revetment pads and dispose of concrete debris in the designated on-site location, figure 2-7.

The general scope of work for each site includes:

- Site mobilization and preparation including survey delineation of excavation horizontal and vertical boundaries, vegetation clearing, and utility location;
- Soil excavation and stockpiling (not applicable to revetment demo);
- Collection and analysis of confirmation samples during excavation activities (by Government);
- Off-site disposal of excavated soils;
- Relocation of concrete debris to a specified on-site disposal location (revetment sites only)
- Minor site restoration by smooth contour restoration

1.3 REGULATORY AUTHORITIES

The San Francisco Bay Area Regional Water Quality Control Board (RWQCB) shall administer primary regulatory oversight. The WP and final report for all activities shall be provided to the RWQCB for review and comment.

1.4 CHEMICALS OF CONCERN

The chemicals of concern for this sampling are Total DDTs. Soil with Total DDTs concentrations in excess of 1 mg/kg must be excavated and disposed of off-site.

1.5 DATA QUALITY OBJECTIVES

Preparation and documentation of project-specific data quality objectives (DQOs) is essential for assuring successful project execution. The DQOs are described in Section 2.0 of the FSP/QAPP.

1.6 BRIEF INSTALLATION HISTORY

Hamilton Army Airfield was constructed on reclaimed tidal wetlands by the U.S. Army Air Corps in 1932. The site, previously known as Marin Meadows, had been used as ranch and farm land since the Mexican Land Grant. Military operations began in December 1932, first as a base for bombers and, later, as a base for transport and fighter aircraft. The base played a major role in World War II as a training field and staging area for Pacific Theater operations. During the war, the base hospital served as an acute care and rehabilitation facility for thousands of war casualties each month. The base was renamed Hamilton Air Force Base in 1947 when it was transferred to the newly created U.S. Air Force. The U.S. Air Force ended military operations at Hamilton in 1976, and the property was declared surplus by the Department of Defense (DoD).

In 1976, the Army began using the runway and ancillary facilities and several other buildings for regular Army and Army Reserve operations. In 1984, the State of California claimed title to lands subject to tidal action, including portions directly adjacent to the levees that constitute the north and east boundaries of the BRAC property, North Antenna Field and the CSM.

In 1984, the remaining portions of the base were transferred to the Army and renamed Hamilton Army Airfield. The base was declared surplus property under the Base Closure and Realignment Act of 1988. Aircraft operations were discontinued in March 1994. In September 1994, the BRAC property was placed under the administrative management of U.S. Army I Corps at Fort Lewis, Washington (Army, 2001).

2.0 DESCRIPTION OF WORK

This section describes the planned approach for the removal actions for three sites, 1. Unlined Perimeter Drainage Ditch (UPDD) 2. South of the Runway DDT Hotspot (SRW) and 3. Revetment Pad area. All sites are located on the inboard airfield area at the former HAAF.

2.1 ECOLOGICAL PROTECTION PLAN

Minimization measures will be implemented to protect the local flora and fauna from the effects of the remedial actions.

Minimization measures include:

- 1) Limiting heavy equipment and truck travel to within the haul road and excavation site boundary;
- 2) Personal vehicle use restricted to the minimum required for travel to and from work areas.

The ecological protection plan and all construction activities will be accomplished subject to the guidelines set forth by USFWS (Section 7 consultation), California Department of Fish and Game (Incidental Take Permit), Regulatory Branch of the U.S. Army Corps of Engineers (Clean Water Act Section 404 Permits for Dredge and Fill Material, State Lands Commission Access Agreement Letter, California Coastal Commission, National Marine Fisheries Service, Regional Water Quality Control Board, and pertinent local regulations where applicable.

2.2 PRE-CONSTRUCTION ACTIVITIES

Pre-construction activities include obtaining required permits, mobilizing to the site, marking the planned excavation limits, establishing exclusion zones, inspecting for underground utilities, and clearing vegetation from the excavation area. The following sections describe the activities that will be performed in preparation for the excavation work.

2.2.1 Government Investigative Sampling

Sampling has been conducted by the USACE to define the extent, depth and geometry of the excavation necessary for each site in order to optimize the likelihood that all contaminated soil exceeding cleanup criteria will be removed.

2.2.2 Preparatory Meeting, Mobilization and Contractor Quality Control

A pre-construction meeting will be held between the USACE and the contractor. The meeting will address the scope of work, contract requirements, health and safety issues, and schedule.

Personnel, equipment, materials, and temporary facilities necessary to execute the project will be mobilized as needed to HAAF. Receipt and inspection of equipment and material will be documented on daily project logs. The contractor will have a quality control program to assure errors and deficiencies are minimal.

2.2.3 Permitting

Required state, federal and local permits will be obtained prior to the commencement of fieldwork. The Contractor will provide notification to the Bay Area Air Quality Management District (Regulation 8, Rule 40) that contaminated soil will be excavated. The local Department of Occupational Safety and Health will be notified at least two weeks prior to commencing excavation activities.

2.2.4 Utilities

No excavation will be performed until site identifiable utilities have been field located. A utility locator subcontractor will inspect for and identify locations of existing underground piping, utilities, or other types of metallic underground structures within and around the planned excavation areas. The utilities will be marked on the ground. Underground Services Alert will be notified at least 48 hours prior to the start of intrusive activities. Utilities encountered that were not previously shown or otherwise located will not be disturbed. Project personnel will perform a visual reconnaissance to locate and identify all utilities in the vicinity of the work areas.

2.2.5 Clearing

Clearing will be performed as needed at each of the specific work areas established to provide adequate work clearance while limiting impact to vegetation in proximity of the work areas. The clearing limits are to allow for access and generally agree with the proposed excavation boundaries for specific work areas (Figures 2-8 and 2-10).

2.2.6 Excavation Location Surveying

A licensed California land surveyor will establish a baseline and take profiles prior to, during, and after excavation of contaminated material. The surveyor is to certify that the final grade has been obtained by excavation and that the volume and location of contaminated material removed matches the required volume and location to be excavated as shown on figures 2-8 and 2-10. The survey crew will stake the field to delineate the exact depth required for the excavation.

2.2.7 Waste Management

Contaminated materials generated by work activities will be stored in Department of Transportation-approved 55-gallon drums. Drums will be placed on pallets underlain with a lined and bermed cell to contain any potential spills. The drums will be clearly labeled to indicate specific type of stored material, the date of its containerization, the project number and the project point of contact. Investigation-derived waste inventory forms will be prepared to track containers and the contents of each. Drums will be stored in a centrally located area on the site inboard of the levee to await disposal. Disposal of hazardous wastes will occur within 90 days of the date of generation.

Miscellaneous waste, such as polyethylene sheeting and general trash, will be stored in dumpsters or roll-off bins. This material will be disposed of as non-hazardous waste at an approved landfill or off-site recycling facility.

2.2.8 Site Specific Health and Safety

A Site Specific Health and Safety Plan (SSHSP) will be prepared. The SSHSP will be reviewed at the initial site safety orientation and by anyone that enters an exclusion zone. Work will be conducted in accordance with the SSHSP. The SSHSP contains an activity hazard analysis, personal protective equipment (PPE) requirements and emergency evacuation and reporting requirements.

2.2.9 Water Inflow Prevention

Inflow of water into excavations at each site will be controlled using the following measures:

- Field work has been planned based on time of year (sites are nearly dry during the summer months)
- Provisions will be made for temporary berms and pumps for water control. The storm water pump station will be operated as needed to reduce the amount of water in the ditch.

2.2.10 Temporary Facilities and Site Security

The HAAF BEC will approve equipment and material storage and staging areas. Decontamination and waste storage areas will be set up as described in Sections 2.3.6 and 2.3.7, respectively.

Site control requires the establishment of regulated areas and site security. Site controls will be established to protect the public from construction hazards (i.e., heavy equipment and open excavations). To maintain security during non-working hours, the contractor shall secure the site prior to leaving and all equipment and supplies stored in locked facilities.

Portable toilets and refuse containers will be set up near the work areas. Traffic control devices, such as barricades, cones, delineators, and signage, will be employed as necessary to manage pedestrian and vehicular traffic. Truck traffic between work areas will be set up as one-way looped haul roads.

2.2.11 Spill Response Materials

Appropriate spill response materials will be present to include containers, adsorbents, shovels, and personal protective equipment.

2.2.12 Pre-Excavation Survey and Marking Planned Excavation Limits

A licensed California land surveyor will develop the layout and mark planned excavation limits prior to the mobilization of the construction crew and equipment. The area of excavation will be field-located using appropriate surveying techniques. Excavation limits for each of the sites are shown on Figures 2-1 and 2-2 and again in more detail on 2-8 and 2-10.

2.3 EXCAVATION ACTIVITIES

The following sections describe the excavation and restoration of the two Main Airfield sites described in this work plan.

2.3.1 Excavation

Prior to excavation, the ground surface at the location of each planned excavation site will be cleared of vegetation, asphalt, and concrete. Steps will be taken to ensure that vegetation clearance is held to the minimum needed for the job. Excavation areas, volumes and depths are shown on Figures 2-8 and 2-10. Excavation areas will be clearly staked and will not be over-excavated. The grading plan is shown on the excavation maps. See figures 2-8 and 2-10. Each plot is color coded to indicate depth of excavation within each plot.

The soil will be excavated in as little as one-half foot cuts using appropriate equipment for the proper control of accuracy and efficiency such as an excavator, scraper, backhoe and/or front-end loader based on the size and configuration of the excavation. Excavated soil will be stockpiled at locations as indicated in Figure 2-4 and 2-5. Further details on temporary stockpiling and subsequent off-site disposal of contaminated soil are described in Section 2.4.

Prompt notification of all interested parties will occur and proper steps will be taken before further excavation at the particular location should contaminated material be discovered that has not been previously identified or if other discrepancies between data provided and actual field conditions are discovered.

Excavation will be performed in a controlled manner that will limit potential for spills and the potential for contaminated material to be mixed with uncontaminated material. Safety tape and warning signs shall be posted and maintained in accordance with Occupational Safety and Health Administration regulations.

The total estimated area and volume of the excavations for each site is as follows:

Table 2-1: Estimated Area, Volume, and Depth of Excavations

Site	Planned Excavation*			Ingress and Egress Area (ft ²)
	Estimated Area (ft ²)	Estimated Volume (CY)	Depth (ft)	
UPDD DDT [Figure 2-8]	10,800	700	0.5 to 2	15,000
SRW DDT Hotspot [Figure 2-11]	151,900	5,605	1 to 4	0
TOTAL		6,305	NA	15,000

*Amounts are estimated and actual amounts may vary due to field conditions and final confirmation samples clearance.

In no case will critical structures be disturbed during excavation. Critical structures may include levees, roads, drainage ditches, pipelines, some buried utilities, and poles for overhead power and telephone lines. Personnel and equipment will not enter the excavation without prior approval of the Site Safety and Health Officer.

If necessary, soil and bunker rock may be taken from on-site locations such as existing stockpile C4D5 to use as temporary ramps for vehicles. A government representative will specify such locations in the field.

2.3.2 Dewatering

Prior to the beginning of the excavation at the UPDD, the ditch will be pumped down by using the storm water pump station to reduce the amount of water in the ditch. The elevation of the water in the ditch will be maintained at a lower level during this excavation to minimize the need for dewatering the excavation site. Dewatering may still be required at the UPDD bank side and bottom. Standing water in the ditch bottom may be pumped down stream to minimize handling and adding saturated soil to the UPDD stockpile. Dewatering will be limited to that necessary to assure adequate access, a safe excavation and the prevention of the spread of contamination.

2.3.3 Disposition of Utilities and Structures

If utilities or structures other than those discussed in this plan are encountered during excavation work, the HAAF BEC will be consulted to determine if the utility is currently in service or if future use is planned. In general, if a utility is in service or planned for service, it will be braced and protected or relocated during excavation and backfilling activities. If a utility is out of service, it may be removed, or abandoned, at the discretion of the USACE and HAAF BEC

2.3.4 Sidewall Sloping

Gradual sidewall sloping of excavations greater than one foot to minimize abrupt drops (i.e. safety hazards) and sloughing will be employed after the excavation has been validated by the survey.

2.3.5 Soil Confirmation Samples

A USACE representative will be present to inspect removal of contaminated material from each site. Once the excavation depth has been reached, samples will be collected as described in the FSP, Appendix B. One half of each sample will be analyzed using field test kits. If that sample contains Total DDTs greater than 1mg/kg excavation will continue. If the sample results are less than 1mg/kg, it will be sent to a certified lab for verification. The locations of these samples will be recorded using GPS equipment and will be included in the summary report.

2.3.6 Generated Waste

Liquid generated from decontamination procedures will be temporarily stored in watertight containers such as 55-gallon barrels or holding tanks. Containers will be clearly labeled to indicate specific source, type of material, date of containerization, project contact, telephone number, and project number. Disposal will occur within 90 days of the date that the liquid is containerized.

Non-hazardous miscellaneous waste, such as construction debris, polyethylene sheeting, general trash, asphalt, and concrete, will be stored in dumpsters or roll-off bins and removed from the site.

Air emissions will be monitored and controlled.

2.3.7 Decontamination After Remedial Action

A decontamination area for heavy equipment will be set up. The decontamination area will include a polypropylene lined, bermed cell with a sump for water collection and holding tank. A water source (or water truck) and water-collection tank will be located near each decontamination area.

Heavy equipment, including backhoes, excavators, and front-end loaders, will be decontaminated prior to moving to a different site and/or exclusion zone. The tires, or tracks, of equipment that have traveled on contaminated soil will be cleaned by dry methods using pry bars, shovels and brooms before the equipment leaves each site.

A small decontamination area will be set up prior to the start of any sampling event. This area will be situated upwind of dirt work activity to reduce danger of recontamination. Reusable sampling equipment that will come in direct contact with soil, including trowels and bowls, will be thoroughly decontaminated. Personnel decontamination areas will be established at work areas as required in the SSHSP.

Wastes collected during decontamination activities will be disposed as described in Section 2.3.6. At the end of each workday, wastes from decontamination activities will be stored in the designated storage areas until final disposal.

2.3.8 Post-Excavation Survey

A licensed California land surveyor will prepare a survey of the limits of each excavation. Survey data will be documented in the summary report.

2.3.9 Sampling of Stored Material

Analyses for contaminated material to be taken to an approved receiving facility will conform to local, state, and federal criteria as well as to the requirements of the facility.

2.3.10 Site Restoration

The excavated areas will be handled as follows:

- After the post-excavation survey the sidewalls for the UPDD and the SRW DDT Hotspot will be knocked down and gradually sloped to match the general contours of the surrounding area.
- No concrete, asphalt, aggregate base or fencing work will be performed;
- Power pole replacement or relocation will not be performed. Inactive power poles that interfere with the concrete demolition/soil removal will be removed and disposed of;
- As-built documentation of excavations will be based on the survey to be performed by a licensed surveyor and a complete set of survey data will be provided as part of the documentation in the summary report; and
- Underground utility repairs in the scope and will not be performed without authorization.

When field activities are completed, the decontamination areas will be removed, and the area will be restored as much as possible to the original conditions.

Unlined Perimeter Drainage Ditch- – The excavation will be graded to the general contours of the surrounding area allowing rainwater to drain in the same fashion it did before disturbing the site.

South of the Runway DDT Hotspot - The excavation will be graded to the general contours of the surrounding area allowing rainwater to drain in the same fashion it did before disturbing the site.

2.3.11 Spills

In the event of a spill or release of a hazardous substance, pollutant, contaminant, or oil the Contractor will notify the BEC and USACE immediately. If the spill exceeds the reporting threshold, the Contractor will follow the pre-established procedures as described in the SSHSP

for immediate reporting and containment. Immediate containment actions will be taken to minimize the effect of any spill or leak. Cleanup will be in accordance with applicable federal, state, and local regulations.

2.4 STOCKPILING AND DISPOSAL

Upon excavation, contaminated soil will be moved to an on-site location and stockpiled while awaiting disposal waste profile test results. When results are available a decision will be made as to the proper disposal landfill. Work by the contractor in this project will adhere to the haul routes depicted in Figure 2-3 unless mutually agreed upon alternates are required in order to coordinate traffic flow with other ongoing activities that may be underway by other contractors.

2.4.1 Stockpiling

Stockpiles will be constructed to isolate stored contaminated material from the environment. The maximum stockpile size will be approximately four feet in height and in the locations depicted in Figures 2-4 and 2-5. Stockpiles will be constructed to include:

- a.** A chemically resistant geomembrane liner free of holes and other damage. Non-reinforced geomembrane liners will have a minimum thickness of 0.25 mm. The ground surface on which the geomembrane is to be placed will be free of rocks greater than 0.5 inches in diameter and any other object, which could damage the membrane.
- b.** Geomembrane cover free of holes or other damage to prevent precipitation from entering the stockpile. Non-reinforced geomembrane covers will have a minimum thickness of 0.25 mm. Scrim reinforced geomembrane covers will have a minimum weight of 26 lbs. per 1000 square feet. The cover material will be extended over the berms and anchored or ballasted to prevent it from being removed or damaged by wind.
- c.** Berms surrounding the stockpile will be a minimum of 12 inches in height. Vehicle access points will also have berm material available nearby for use if required. Incorporation of existing berms will be permitted.
- d.** The liner system will be built to contain leachate. Storage and removal of leachate which collects in the stockpile liner will be managed in accordance with the paragraph regarding Liquid Storage

2.4.2 Disposal

Offsite disposal of all contaminated material will be in accordance with all pertinent regulations.

2.4.2.1 Soil

After stockpiling, soil will be transported to and disposed of at an off-site facility permitted to receive the material. Soil will be analyzed for the parameters and by the methods required by the disposal facility. Copies of analytical test results will be provided to the disposal facility as required to obtain disposal permission. Analytical data from waste profile samples will be provided to the USACE for review prior to completion of waste profiling and removal of the soil from the site. Bulk carriers will transport the soil off-site to the licensed disposal facility. The

carriers will be owned and operated by a transporter that is licensed and permitted to transport the waste. Any hazardous waste soil will be transported under a uniform hazardous waste manifest.

2.4.2.2 Liquids

Liquid wastes generated during the soil removal activities may include decontamination rinsate water. These liquids will be collected and stored in drums or portable tanks and transferred directly to a vacuum truck or trailer for transport to a disposal facility, or discharged in accordance with regulatory requirements.

Samples will be collected, as required by the proposed disposal facility, and the water will be characterized for disposal. Previously obtained analytical results will be used to the extent possible in characterizing the wastes. Once permission has been received from the disposal facility and the generator, the water will be transported off-site for treatment/disposal. Any hazardous waste liquid will be transported under a uniform hazardous waste manifest.

2.4.2.3 Debris and Miscellaneous Waste

Debris consisting of non-hazardous combustible and non-combustible wastes resulting from demolition and clearing and grubbing waste will be disposed of off-site according to applicable Federal, State, and local requirements.

Miscellaneous waste such as construction debris, polyethylene sheeting, and general trash, will be disposed of as non-hazardous waste at a generator-approved landfill or an off-site recycling facility.

2.5 **REVTMENT DEMOLITION**

2.5.1 **Revetments**

A revetment is defined as a circular concrete pad formerly used for parking military aircraft. There are six revetments to be demolished at HAAF under this work plan. Approximate thickness is listed in Table 2-2 and their locations shown in Figure 2-6. The revetments are approximately 98 feet in diameter and vary in thickness (Table 2-2). History and current evidence suggest that the concrete that make up these revetments is not reinforced (no rebar).

Table 2-2: Revetments to be Demolished

Revetment Number	14	19	21	22	25	26
Thickness (inches)	14	10	18	11	15	8

2.5.2 **Utilities Clearance**

A check will be made for the existence of any utilities associated with the revetments. If any utilities are located, they will be brought to the attention of the Government field representative.

2.5.3 Revetment Demolition and Monitoring

The contractor will break up the revetments and remove all concrete and steel debris from the revetment area. The concrete will be hauled to the on-site location designated in Figure 2-7 where it will be leveled to not exceed +4 foot above existing grade. The intent is to have a site completely cleared of concrete debris, however some residual concrete particles less than 4-inch diameter may remain.

Some of the soil under and surrounding the revetments is contaminated with low levels of one or more of the following: total petroleum hydrocarbons (TPH), TPH-diesel (TPH-d), TPH-gasoline (TPH-g), polynuclear aromatic hydrocarbons (PAHs), DDT, or metals. The routes of chemical exposure that can be anticipated are inhalation, direct skin contact and incidental ingestion of contaminated materials. It is anticipated that the revetment demolition can be accomplished in Level D PPE. The Contractor will prepare and implement an exposure monitoring/air sampling program to identify and quantify airborne levels of the listed chemicals to assure proper selection of engineering controls, work practices and personal protective equipment. The Contractor will monitor with a PID. Action levels will be established based on the Cal-OSHA permissible exposure limits (PELs) and ACGIH threshold limit values (TLVs). The contractor will avoid potential exposure by minimizing disturbance to the soil under and near the revetments.

There will be an Accident Prevention Plan/Hazard, schedule, complete with a list of subcontractors and responsible persons to support concrete demolition activity. During the revetment portion of the project, if conditions are not as anticipated/described (PID/FID readings exceed action levels, visible free-standing petroleum product, etc.) work will cease and Government representative notified.

There is no size limitation for on-site disposal except the concrete debris will not be piled more than 4 feet above the ground surface and must be within the boundaries as shown in Figure 2-7. The contractor will minimize void spaces during concrete placement within the boundaries. The contractor will remove any excessive soil that is attached to the concrete debris as is practical and leave this soil in place within the former revetment area. It is not necessary to remove the adjacent asphalt/concrete that connects to the circular revetments. Only the circular 98-foot diameter concrete revetments will be demolished and removed from the area. The contractor will minimize soil migration to other areas and brush and sweep all soil off equipment at each revetment to prevent possible cross contamination.

This work requires a Storm Water Pollution Prevention Plan (SW3P) under a NPDES storm water permit since the total area of the haul road and revetments exceeds 1 acre. The Army BRAC Office has submitted a NPDES NOI to the SWRCB to cover this activity. The Appendix A SW3P to this WP addresses the revetment demo activity and the BRAC remedial action sites. An approved SW3P is required prior to commencement of the demolition of the revetments.

The minimum storm water Best Management Practices (BMP) are as follows: The contractor will install a straw wattles on the downstream side of the revetment and on the off-pavement dirt surfaced haul road. Generally, runoff water flows toward the Perimeter Drainage Ditch (PDD).

The government will submit a Notice of Termination and the Annual Compliance Reports to the RWQCB.

2.6 DUST CONTROL

Dust control will be implemented as needed during the field activities associated with the project. If needed, dust control during surface soil excavation will be achieved through application of water. The source of water will be the hydrant on the northwest side of Building 82. Excavation areas subject to dust control will be treated with water dispensed from a water truck or trailer or by water sprayed from pressurized hose. The dust control is to minimize saturation, and to mitigate negative impacts to human health, and the environment. Water will be fogged or sprayed into the dust around the waste and waste surface in minimal volumes to provide dust suppression only.

2.7 DEMOBILIZATION

Demobilization will consist of the removal of heavy equipment, tools, and supplies; and evacuation of the temporary office space. Temporary fence, traffic control devices, tape, signs, storage containers, and refuse containers will be removed from the site. Debris will be properly disposed off-site and work areas will be cleaned and left in condition similar to their condition before commencement of the project activities. A post-construction site walk will be conducted before demobilization is complete. Representatives of USACE will attend this site walk. The purpose of this final site walk is to verify that areas are in satisfactory condition following work completion.

2.8 PHOTO DOCUMENTATION

Photographs will be taken to document the work activities at each site. A photo log will be part of the summary report.

3.0 POST CONSTRUCTION DOCUMENTATION

A summary report that documents work performed will be prepared. The report will include the following information as a minimum:

- a. A cover letter signed by a responsible company official certifying that all services involved have been performed in accordance with the terms and conditions of the contract documents and regulatory requirements.
- b. A narrative report including, but not limited to, the following:
 - (1) site conditions, ground water elevation, and cleanup criteria;
 - (2) excavation logs;
 - (3) field screening readings;

- (4) quantity of materials removed from each area of contamination;
- (5) quantity of water/product removed during dewatering;
- (6) sampling locations and sampling methods;
- (7) sample collection data such as time of collection and method of preservation;
- (8) sample chain-of-custody forms; and
- (9) source of ramp material.

- c. Copies of all chemical and physical test results.
- d. Copies of all manifests and land disposal restriction notifications.
- e. Copies of all certifications of final disposal signed by the responsible disposal facility official.
- f. Waste profile sheets.
- g. Daily Logs

Scale drawings will be included in the summary report that depict limits of each excavation, limits of contamination, known underground utilities within 50 feet of excavation, sample locations, and sample identification numbers. On-site stockpile, storage, treatment, loading, and disposal areas will also be shown on the drawings.

- h. Progress Photographs. Color photographs will be used to document progress of the work.

4.0 PROJECT MANAGEMENT AND ORGANIZATION

4.1 PROJECT ORGANIZATION

4.1.1 Project Manager

Mr. Raymond Zimny is the Sacramento District Project Manager (PM). The PM is responsible for the overall organization and management of the work both in-house and contract action. The PM oversees the administration, resource management and coordination among client, contractor, staff and the USACE project delivery team (PDT). Mr. Zimny can be reached at 916/557-6965 or by email at Raymond.E.Zimny@usace.army.mil .

4.1.2 Team Member – Technical Lead

Mr. James Lukasko is the Sacramento District Project Development Environmental Engineer on the PDT. Serves as the technical team leader and is responsible for

development of quality products and is the point of contact for the technical discipline pool. Assists the PM in the development in the scope of service, task duration, cost and resource estimates and commitments.

4.1.3 Team Chemist

Ms. Kathleen Siebenmann is the Sacramento District Project Development Chemist on the PDT. Provide discipline specific task requirements and participate in the development in the scope of service, task duration, cost and resource estimates and commitments. She is responsible for instruction of field personnel, contamination investigation quality control and the timeliness of chemistry contributions to the project delivery effort.

4.1.4 Database Manager – Chemistry Quality Control Manager (CQCM)

Mr. Carleton Fong is the Sacramento District Project Development Database manager on the PDT. He is responsible for the database management for project-related environmental data. He maintains the environmental database that includes sample location coordinates, sample information, and laboratory analysis results. Database Manager will work with the Project Chemist to ensure that all data are collected and reported correctly.

4.1.5 Contract Laboratory

Labs report to the Project Chemist or the CQCM and are responsible for implementing their quality management plan and providing analytical and related services in accordance with the approved QAPP, project work plan, and referenced procedures.

4.1.6 Program Safety and Health Officer

Ms. Donna Maxey is the Sacramento District Project Development Safety and Health Officer. She is responsible for developing and coordinating the in-house health and safety plans as well as reviewing contractor plans for accuracy.

4.1.7 Field Sample Custodian

The field sample custodian reports to the appropriate task manager and is responsible for ensuring the custody of collected samples and associated documentation from collection to receipt by the lab.

4.1.8 Contractor Quality Control System Manager

Mr. Thomas Purbough is the Cerrudo Services PM and as such is responsible for the quality control (QC) for all Contractor related project activities.

4.1.9 BRAC Environmental Coordinator

Mr. Ed Keller is the BRAC Environmental Coordinator and as such is responsible for ensuring BRAC compliance for all Contractor related project activities.

4.2 PROJECT SCHEDULE

A detailed project schedule will be prepared by the contractor and will be updated on a weekly basis.

It is anticipated that revetment removal and DDT excavation activities will occur at the UPDD from September 2004 through November 2004. Due to funding constraints the DDT hotspot excavation south of the runway is an optional task in this project. It is an option that may be exercised as soon as funding is obtained. Therefore, fieldwork on the SW DDT hotspot most likely will not occur until the spring of 2005 after the site is dried out from the winter rains.

5.0 REFERENCES

Army (U.S. Department of the Army), DTSC (California State Department of Toxic Substances Control), RWQCB (California Regional Water Quality Control Board) 2003. *Main Airfield Parcel Record of Decision/Remedial Action Plan, Hamilton Army Airfield, Public Comment Final*, August 2003.

IT Corporation, 1999. *Comprehensive Remedial Investigation Report, BRAC Property, Hamilton Army Airfield*, April 1999.

Foster Wheeler Environmental Corporation, 2000. *Remedial Design Investigation Final Data Report, BRAC Property, Hamilton Army Airfield*, February 2000.

USACE, 2004. *Combined Final Report on Results of the Area-Wide DDT Site Investigation, Hamilton Army Airfield*, March 2004.

USACE 2004. *Work Plan, Miscellaneous Site Investigations, Hamilton Army Airfield, Final*, January 2004.

U.S. Environmental Protection Agency (EPA) 1996. *Test Methods for Evaluating Solid Waste Physical/Chemical Methods, Third Edition*, December 1996.

U.S. Fish and Wildlife Service Biological Opinion and Amending Letter, August 2004 and September 2003.

6.0 APPENDICES

APPENDIX A STORM WATER POLLUTION PREVENTION PLAN

APPENDIX B FSP/QAPP