

---

**SAMPLING REPORT  
NORTHWEST ALLEGED DISPOSAL AREA  
HAMILTON ARMY AIRFIELD, CALIFORNIA**

---

## **1.0 INTRODUCTION**

This report presents the findings of the November 2003 soil sampling effort conducted for an investigation of an alleged disposal area located in the northwestern portion of Hamilton Army Airfield (HAAF) property. The Northwest Alleged Disposal Area (NWADA) is located just west of the north end of the former runway. This investigation was conducted to address concerns identified by Mr. Robert T. Foley in a letter dated May 2001. Mr. Foley is a retired military member and a former U.S. Army Command Logistics Evaluation Team, team chief. In his letters, Mr. Foley stated that during his inspection period at HAAF (1987 to 1989), that he was told that the open land located immediately northwest of the end of the former runway was the location of an improper disposal area of hazardous materials (Letters I & II, 2001). The types of materials identified in his letter include paints, cleaning solvents, bleach, petroleum products, radioactive calibration samples, and medical supplies. During a subsequent on site interview, Mr Foley stated that the area in question had no disturbed soil when it was shown to him. Mr Foley assumed from his recollection of the site that the hazardous materials had been poured on the ground and the empty containers were then disposed of in dumpsters or elsewhere.

The primary purpose of this investigation was to gather enough data to evaluate the validity of the allegations. If there were evidence to support the allegations, a subsequent investigation would be initiated at a later date to characterize the nature and extent of contamination, as the intent of the investigation described herein is simply to evaluate the validity of the allegations. A secondary purpose of this investigation was to identify the location of a historic slough that passed through the NWADA. This slough was indicated on topographic maps from 1914 and may have presented a preferential pathway for contaminant transport through the area.

The U.S. Army Corps of Engineers (USACE) had conducted this investigation on behalf of the US Army BRAC Atlanta Field Office Environmental Coordinator. This investigation

involved the collection of soil samples using a direct push technique and laboratory analysis of those samples. The sample locations that were determined in the workplan were agreed to by the Friends of Novato Creek (FNC), the California Department of Toxic Substance Control (DTSC), the Regional Water Quality Control Board (RWQCB) and the Army. Refinement of the sample locations and the determination of sample depth took place in the field in consultation with the FNC geologist. The FNC, RWQCB and the Army were present during the field activities.

### **1.1 Project Location and Site Description**

HAAF is located approximately 20 miles north of San Francisco, California, in the city of Novato, Marin County. Figure 1-1 shows the general project location, HAAF is located along the western coastal range of San Pablo Bay, directly north of and connected to San Francisco Bay. Figure 1-2 shows the location of the NWADA located immediately west of the north end of the former runway and northeast of Landfill 26. The east portion of the NWADA is within the BRAC property and the rest is within the GSA Sale Property.

Presently, the NWADA is a low-lying area covered with low to medium high marsh grasses and experiences seasonal flooding. Topographic maps from 1914 indicate that a slough channel used to exist in the seasonal flooding area within the NWADA.

### **1.2 Site Background**

In the early 1930's, Hamilton air base was built as a bomber installation by the U.S. Army Air Corps on ranches, farmlands, and reclaimed tidal wetlands. Military operations began in 1932 when it served as an airfield for fighter, bomber and transportation aircraft. In 1933, Hamilton air base started housing B-10 and B-12 bombers and, in 1937, phased into B-18s. Because the runway was not long enough to support the new and larger Boeing's B-17, the base became one of West Coast Air Training facilities and staging areas for Pacific Theater Operations. The base was renamed Hamilton Air Force Base (HAFB) in 1947 when it was transferred to the newly created U.S. Air Force.

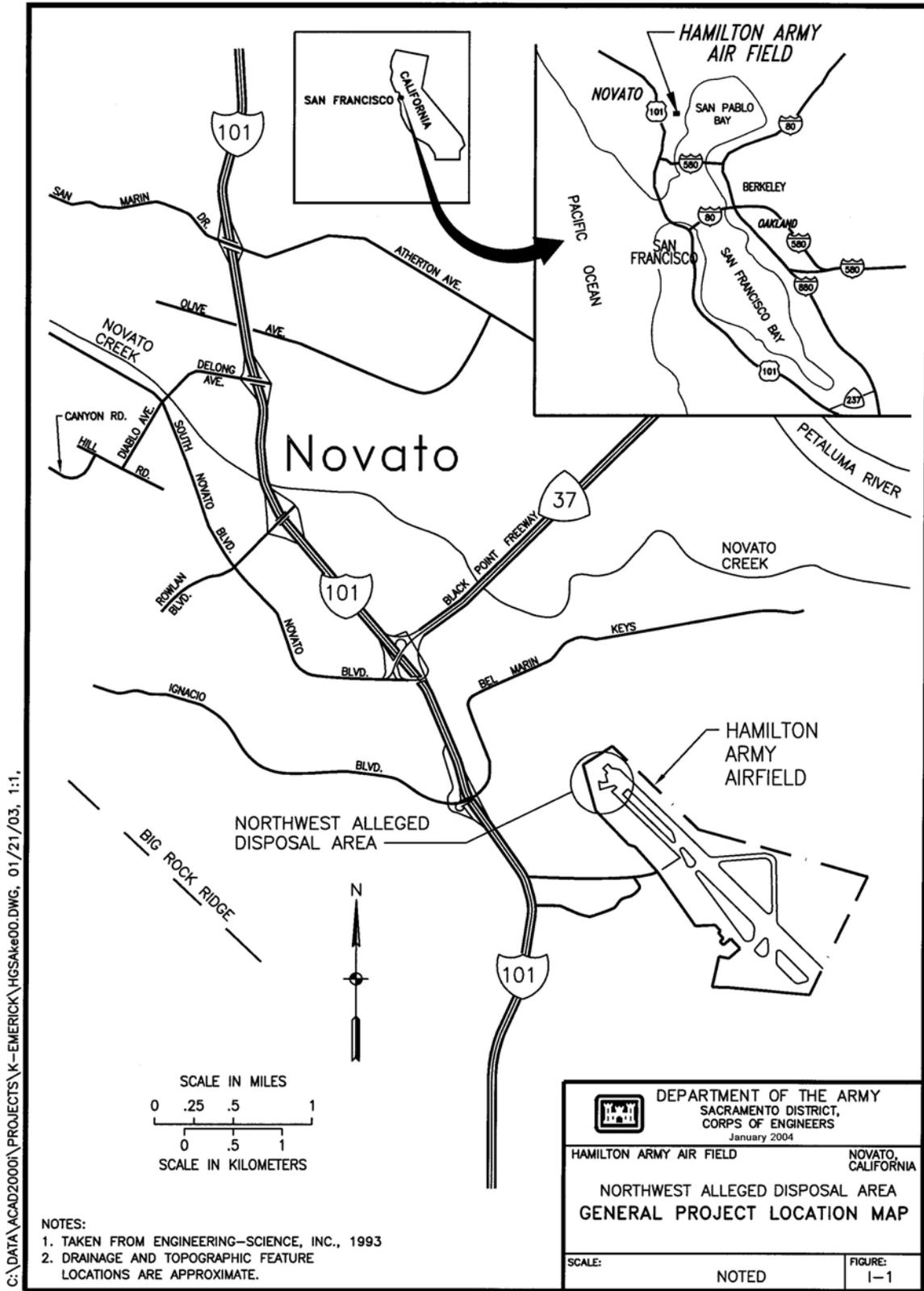
The U.S. Air Force ended military operation at the base in 1976. At the same time, the Army began aircraft operations at the airfield and supporting facilities with permission from the

U.S. Air Force. In time, the State of California claimed title to lands subject to tidal action of the San Pablo Bay. In 1984, some portions of the base were transferred to the U.S. Army and renamed Hamilton Army Airfield (HAAF). The base was declared surplus property under the Base Realignment And Closure Act (BRAC) of 1988. Aircraft operations were discontinued in March 1994.

Approximately 669 acres encompassing the runway and associated buildings were closed under the Army BRAC process and are termed as the U.S. Army BRAC Property. The remainder of the facility consists of the GSA Sale Property, the U.S. Coast Guard area, and the U.S. Navy housing area.

### **1.3 Geologic Setting**

The project site is located within California's geologically and seismically active coastal range province. The province is characterized by a series of northwest-trending faults, mountain ranges, and valleys. Two geomorphic zones are distinct to HAAF; the Bay Plain zone and the Franciscan Upland zone (see Figure 1-3). The Bay Plain zone extends from the edge of San Pablo Bay to the foothills immediately west of HAAF adjacent to San Pablo Bay. The Franciscan Upland zone consists of the hills west of HAAF that are formed of sandstone and shale of the Franciscan Formation, which weathers to form a light sandy or silty soil that is moderately well drained; deposition by the local streams has created accumulations of clay, silt, sand, gravel, in the west-central portion of HAAF (J&SA, 1998).



C:\DATA\ACAD2000\PROJECTS\K-EMERICK\HGS\Ae00.DWG, 01/21/03, 1:1,

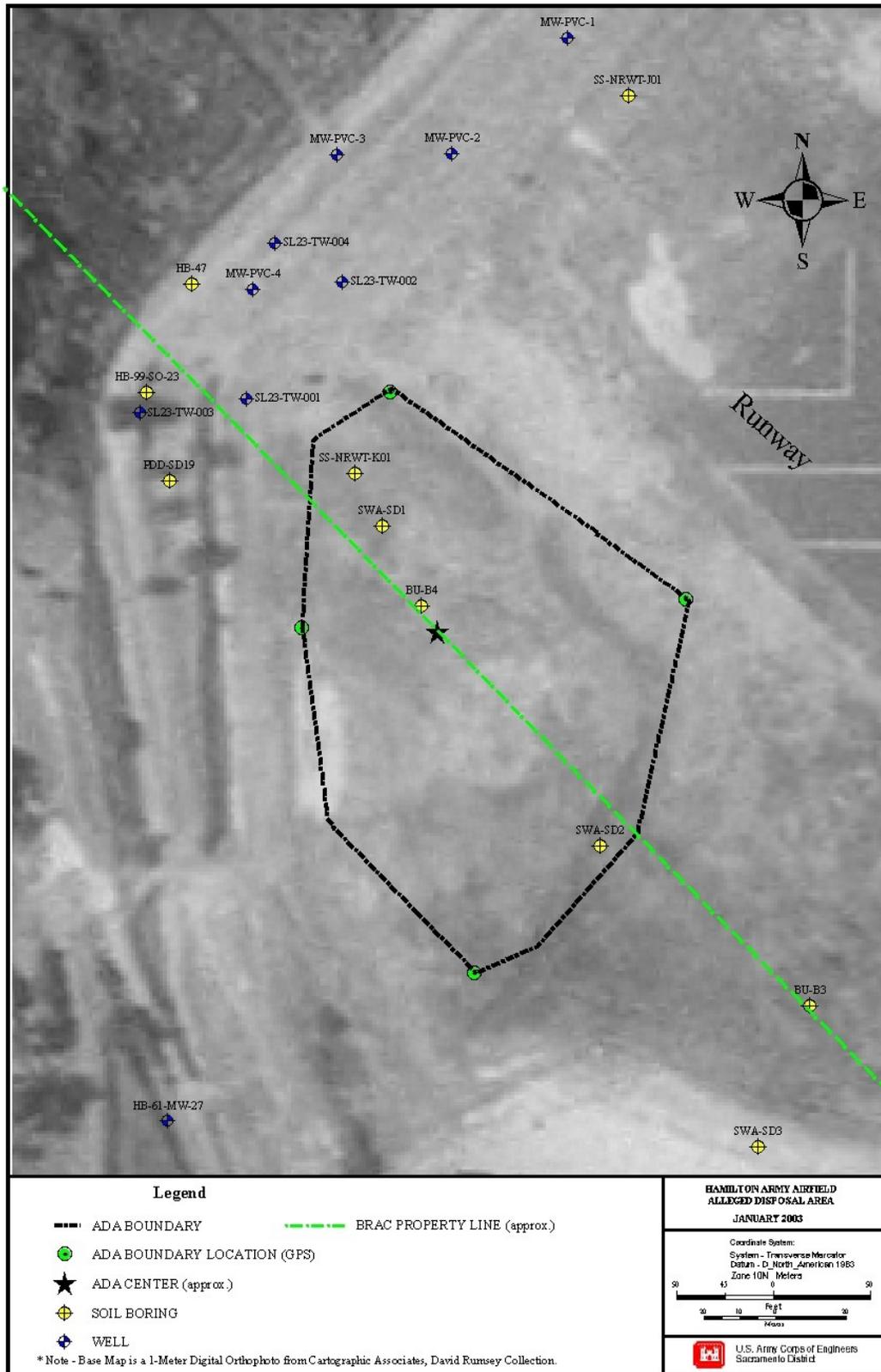


Figure 1-2. Alleged Disposal Area Location with Previous Investigation Data Points.

#### **1.4 Site Geomorphology**

The nearly level site consists of former mudflats and marshlands that have been separated from tidal action by dikes and levees since the early 1900's; the site had been drained by a system of trenches and pumps. As the site dried out and the soil became desiccated after being removed from tidal inundation, it began to settle below its original elevation. The water table is typically several feet below the surface and varies by season. The project site is located on a thin near-surface crust overlaying soft marine clays. The crust is composed of desiccated bay mud, and in some areas, consist of several feet of granular fill in the former runway and taxiway areas. Artificial fill (consisting of rock, soil, and other materials) was deposited on top of the bay mud to permit construction of the runway (J&SA, 1998).

Bay Mud consists of thick deposits of soft, unconsolidated, water-saturated, silty clays containing vegetative remains and is up to 70 feet thick. This soil type exhibits high compressibility, low shear strength, and generally low permeability and it is underlain by much stronger and less compressible soils.

#### **1.5 Hydrogeology**

The shallow groundwater at the HAAF has high salinity because of the historic influence of San Pablo Bay. Groundwater is of poor quality and is not used as a potable water source. The general direction of groundwater flow is to the east (WCC, 1985). However, low transmissivity of Bay Mud greatly reduces the movement of shallow groundwater into the San Pablo Bay.

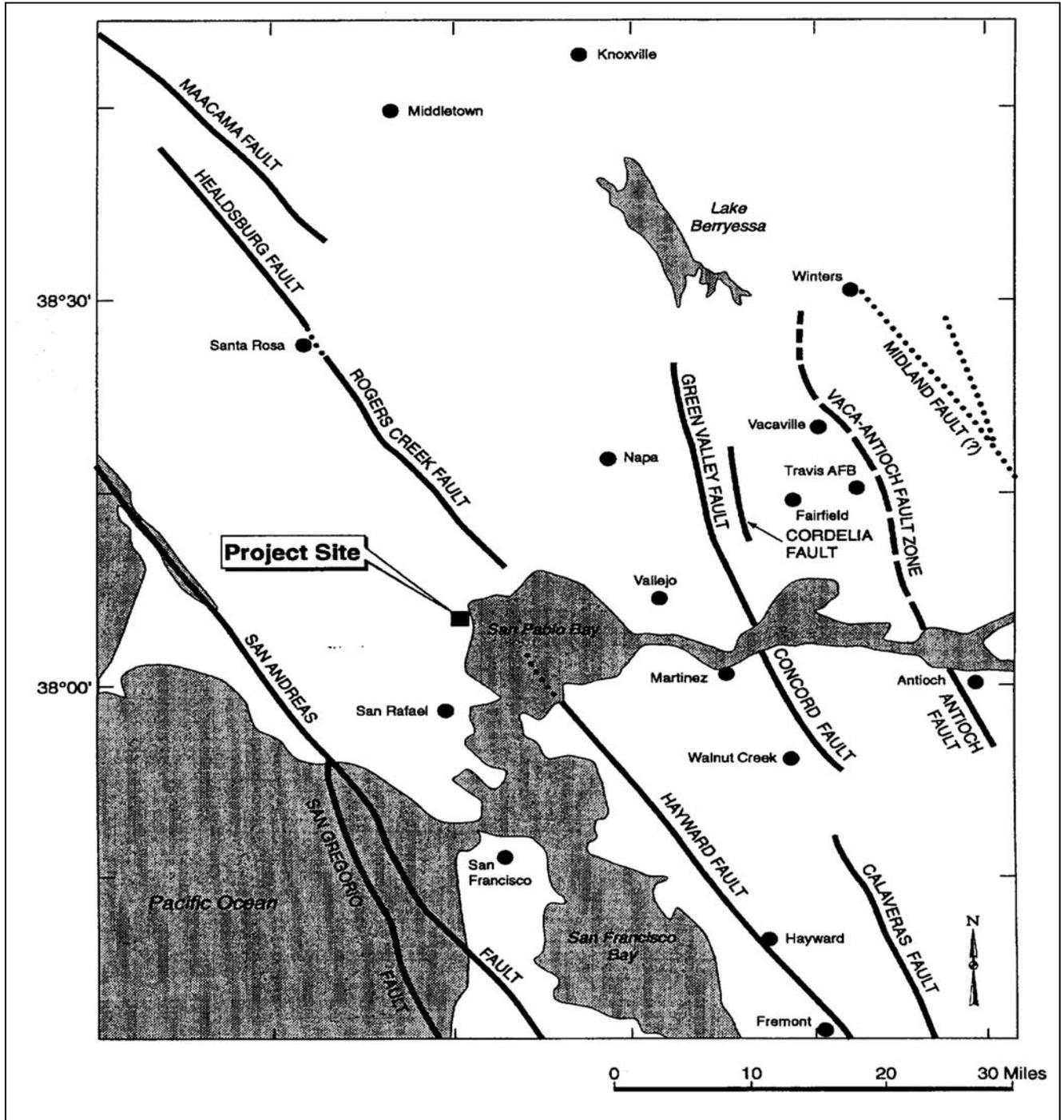


Figure 1-3. Geologic Setting.

## 1.6 Previous Investigations

The Northwest Alleged Disposal Area (NWADA) has not been investigated as an area of concern. However, the NWADA and the surrounding areas have been assessed and investigated numerous times under base-wide investigations conducted at HAAF (Figure 1-2, NWADA location with Previous Investigation Data Points).

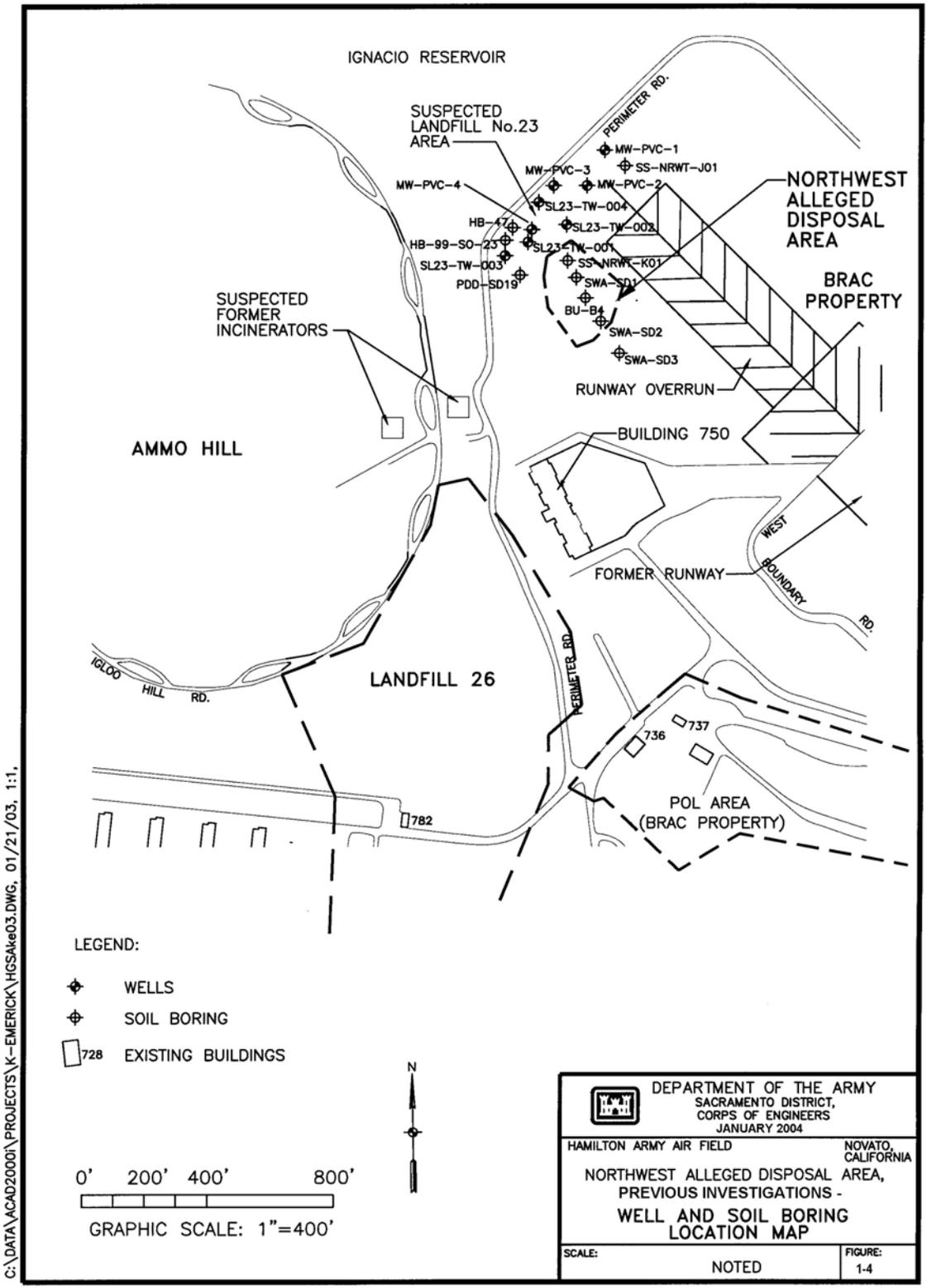
The NWADA is located on seasonal wetland and was investigated at a screening level as a site named the “Seasonal Wetland” as part of the base-wide wetlands investigation: the results of the investigation are reported in the Additional Environmental Investigation Report, BRAC Property, Hamilton Army Airfield (Woodward-Clyde, 1996). As part of the Wetlands investigation, soil sampling was conducted at two locations inside the boundary of the NWADA. Two near-surface soil samples and one soil sample at a depth 1.5 bgs were collected at two sampling locations. Soil samples were analyzed for oil and grease, BTEX, PNAs, TPH as gasoline, diesel and JP-4, herbicides and pesticides. Several metals including lead were detected above the baseline levels but less than twice the baseline values. Low concentration of DDE was also detected; herbicides, PNAs, BTEX, and petroleum hydrocarbons were not detected.

A Preliminary Assessment for the GSA Phase II Sale Area including the NWADA was conducted in 1995 by Woodward-Clyde. The Preliminary Assessment for HAAF GSA Phase II Sale Area (WWC, 1995) provided previous investigations and recommendations for areas of concern in the GSA II Sale Area. The Preliminary Assessment Report and the regulatory community recommended additional investigation activities be conducted at numerous areas including the suspected Landfill 23 (near Northwest Runway Area) and two suspected incinerator locations which are located near the NWADA, however, the NWADA was not identified as an area of concern warranting further investigation. Subsequently, these areas that warranted investigation were investigated by IT Corporation and the results and recommendations were provided in the Site Investigation Report, 800-B and Ammo Hill Parcels, GSA Phase II Sale area, Hamilton Army Airfield, Novato, California (IT Corp, 1997). As part of the investigation of 800-B and Ammo Hill Parcels, GSA Phase II Sale Area, soil samples and

groundwater samples were collected at the suspected Landfill 23 and two suspected incinerator locations.

The Preliminary Assessment Report identified pesticides, TPH, PNAs, VOCs and metals as contaminants of concern at the suspected Landfill 23 (WWC, 1995). The suspected Landfill 23 is located between Ignacio Reservoir Marsh and the NWADA; soil and groundwater sampling locations are located about 75-300 feet from the NWADA (Figure 1-4). Soil samples were collected at three different locations at different depths between 5 feet and 15 feet bgs and analyzed for metals, pesticides, TPH-e, TPH-p, and SVOCs. Ground water samples were collected at seven different locations and at different depths between 6 feet and 12.5 feet bgs.

Newly installed and existing monitoring wells were sampled throughout the GSA Phase II Sale Area and analyzed for TPH, VOCs, and metals. The monitoring wells (SL23-TW-001-004) and MW-PVC-1-4 which are located in the suspected Landfill 23, just north and within 400 feet of the NWADA, were tested for metals, pesticides, TPH, VOCs and SVOCs and reported in IT Corporation's Site Investigation Report, 800-B and Ammo Hill parcels, GSA Phase II sale Area.



C:\DATA\ACAD2000\PROJECTS\K-EMERICK\HGSake03.DWG, 01/21/03, 1:1.

All groundwater contaminant concentration values for contaminants of concern for the NWADA were below the background values except for arsenic. Arsenic was found in three wells above the background level and the maximum value detected was 59 ug/kg (IT Corp., 1997). Analytical results from the base-wide groundwater samples indicated trace metals and volatile organic compounds occur in groundwater within the GSA Phase II Sale Area parcel.

IT Corporation's 1998 Site Investigation report concluded that the Contaminants Of Concerns detected at suspected Landfill 23 do not appear to be indicative of site-related activities and fall within the range of naturally occurring metals and organics. The report concluded that the suspect landfill 23 is most likely not a landfill.

As part of the 800-B and Ammo Hill Parcels, GSA Phase II Sale Area investigation, two incinerator locations were also investigated. According to the SI Report (IT Corp., 1997) no detections of nitroaromatics; a by-product of ammunition incineration was found; the detection of dioxins, furans, and copper appear to be associated with the fill material present, and the elevated levels of mercury appear to be associated with the bedrock.

The SI Report (IT Corp., 1997) summarized as the potential contaminants of concern were detected slightly above the background levels, however, the investigation found no evidence of incinerator material or waste at the suspected incinerator locations and no evidence of landfill wastes at the suspected Landfill 23. The Site Investigation Report concluded that the suspected Landfill 23 and the suspected Incinerator locations were not impacted by the past Army activities (IT Corp., 1997).

The final groundwater sampling for MW-PVC-1 through MW-PVC-4 located in the suspected Landfill 23 (Northwest Runway Area) was conducted in January 2002 and the results are reported in Groundwater Data Report, Final Well Sampling, Hamilton Army Airfield, Marin County, California (USACE, 2002). The groundwater samples were analyzed for Metals, VOCs, SVOCs and pesticides and only copper was detected above the two comparator values: (1) the proposed wetland, the continuous 4-hour Salt Water Aquatic Life Protection water quality goals for Enclosed Bays and Estuaries (Water Quality Goals, California Toxics Rule Criteria, August

2000) and (2) the Residential Cleanup Levels for the General Services Administration property (Woodward-Clyde Federal Services, 1995 Corrective Action Plan Hamilton Army Airfield GSA Phase I Sale Area).

### 1.7 Project Staffing

This study is being designed and implemented by the Environmental Design Section (EDS), USACE Sacramento District, under the general supervision of Rick Meagher, Section Chief. The Project Manager for this project is Ray Zimny, USACE.

The technical design team includes:

<u>Person</u>	<u>Responsibility</u>
Steve Carey	Geologist – Project Lead
Tim Crummett	Geologist – Sampling Team Lead
Kim Emerick	Environmental Engineer – Sampling Team
Carlton Fong	Chemist
Donna Maxey	Industrial Hygienist
Bruce Van Etten	Engineering Technician – Sampling Team
Chemical Laboratory	Applied P&CH Laboratory, Chino, CA. 91710