4.0 Investigation Results

4.1 Categorization Factor Findings: New Areas Identified by EBS Investigation

No new potential areas of hazardous substance use, storage, disposal, or release were identified for Hospital Hill or POL Hill during the preparation of this EBS.

4.2 Categorization Factor Findings: Previously Identified Sites

Previously identified areas for Hospital Hill and POL Hill are summarized below.

4.2.1 Petroleum Use and Storage

4.2.1.1 Hospital Hill

The Hospital Hill area contained two wooden 750-gallon underground diesel fuel storage tanks, one at Building 510 and the other at Building 521 (IT, 2000) (Table 4-1). These tanks supplied diesel fuel to boiler room operations in each building.

TABLE 4-1
List of Fuel Storage Tanks at Hospital Hill

Building	Tank Type	Tank Size (gal)	Contents	Current Status
510	UST	750	Diesel fuel	Removed April 1997
521	UST	750	Diesel fuel	Removed January 1997

As described in Section 4.2.2, petroleum releases to soil were identified during tank removal and investigation activities. Remediation of the contaminated soil is summarized in Section 4.2.3.

4.2.1.2 POL Hill

The primary references for the information provided below are Engineering Science, Inc. (ESI), 1993; HLA, 1991; IT, 1987; IT, 1997a,b; IT, 1999a; RWQCB, 2000; Woodward-Clyde, 1995a, b.

Table 4-2 provides a list of ASTs and USTs formerly used to store petroleum products at POL Hill.

POL Hill contained one 840,00-gallon above ground storage tank (AST 2) located on the upper hillside bench of POL Hill. The site also contained twenty 25,000-gallon underground storage tanks in a lower tank farm at the base of the hill. The large AST (AST 2) and the twenty USTs contained JP-4 jet fuel. A gravity-fed pipeline connected AST 2 to the lower tank farm.

Two additional ASTs were located at POL Hill, a 25,000-gallon AST that contained "mogas" (automobile fuel) and later JP-4 jet fuel, and a 20,000-gallon AST that contained JP-4 jet fuel. A 750-gallon UST was also located in the tank farm area near the fuel pump house. The contents of this tank are not known. A 600-gallon and 2,500-gallon AST were located near Buildings 737 and 738. Their contents is not known (Weston, 1990). Drums containing waste oil and hydraulic oil were stored in Building 737 (HLA, 1991).

All of the ASTs and USTs at POL Hill have been removed. The 840,000-gallon AST (AST 2), the twenty 25,000-gallon USTs, the 750-gallon UST and the 25,000-gallon AST (formerly containing mogas and JP-4) were all removed by IT Corporation and Atlas Hydraulic in 1986. The 20,000-gallon AST that contained JP-4 jet fuel was later removed by IT Corporation in 1990, according to interviews with IT personnel. The 600 and 2,500-gallon ASTs were removed prior to the construction of the groundwater treatment plant for Landfill 26. Additional details are provided in Section 4.2.3.

TABLE 4-2
List of Fuel Storage Tanks at POL Hill

Number of Tanks	Tank Type	Tank Size (gal)	Contents	Current Status
20	UST	25,000	JP-4 Jet Fuel	Removed 1986
1	AST	25,000	Mogas and JP-4 Jet Fuel	Removed 1986
1	AST	20,000	JP-4 Jet Fuel	Removed 1990
1	UST	750	Not Known	Removed 1986
1	AST	840,000	JP-4 Jet Fuel	Removed 1986
1	AST	600	Historical drawings indicate contents may have been diesel fuel. Reported to be empty in 1990 (Weston, 1990)	Removed prior to construction of LF 26 treatment plant
1	AST	2,500	Historical drawings indicate contents may have been diesel fuel. Reported to be empty in 1990 (Weston 1990)	Removed prior to construction of LF 26 treatment plant

As described in Section 4.2.2, petroleum products were released to soil and groundwater at POL Hill. Remediation activities are described in Section 4.2.3.

4.2.2 Petroleum Release

4.2.2.1 Hospital Hill

During the tank removal activities at Hospital Hill, confirmation sampling was performed to identify the nature and extent of contamination resulting from the storage and use of USTs at Buildings 510 and 521. Details from the tank removal activities and soil and groundwater sampling activities are summarized below.

Confirmation sampling indicated the presence of extractable and purgeable TPH at concentrations above the General Services Administration Phase I residential cleanup goals. However, soil excavation activities were conducted to remove all overlying impacted soils and continued until refusal, due to encountering competent bedrock (IT, 2000).

Although confirmation soil sampling yielded no TPH levels of concern in soil at Building 521, one groundwater sample was collected from the bottom of the excavation. Analysis of this sample indicated that diesel fuel may be present in groundwater. Therefore, three temporary groundwater wells were installed downslope of the Building 521 UST excavation to collect additional groundwater samples to further assess the presence or absence of TPH in the groundwater.

Soil sampling at Building 510 indicated the presence of extractable and purgeable total petroleum hydrocarbons (TPH) at concentrations above the General Services Administration (GSA) Phase I residential cleanup goals (RCGs). Even though water was not encountered at the Building 510 site, three temporary groundwater wells were installed and sampled downslope of the Building 510 UST excavation.

Six groundwater samples were collected from the Building 510 and 521 monitoring wells in March 1998 and analyzed for TPH-extractable, TPH-purgeable lead, and benzene, toluene, ethylbenzene, and xylenes. None of the groundwater samples yielded detectable concentrations of these analytes, with the exception of four detections of unknown extractable hydrocarbons (i.e., TPH-extractable). All four detections (two at Building 510 and two at Building 521) were qualified as estimated values. IT Corporation concluded that the groundwater beneath Hospital Hill was not impacted by leakage from the USTs since these detections were below the GSA Phase I cleanup goal of 1.2 ppm (IT, 2000).

4.2.2.2 POL Hill

Between 1985 and 1993, extensive soil and groundwater investigations were conducted at POL Hill. These investigations are summarized below. The primary references for the information provided below are ESI, 1993; HLA, 1991; IT, 1991; IT,1987; IT, 1997a, b; IT, 1999a; RWQCB, 2000; Woodward Clyde, 1995a, b; Weston, 1990.

In 1985, Woodward-Clyde Consultants conducted soil and groundwater investigation sampling prior to removal of any tanks at POL Hill. Eleven monitoring wells were installed in the down gradient location of the tank farm located on the lower bench of POL Hill. Analytical results indicated the presence of hydrocarbons in soil and groundwater beneath the location of AST 2 and in the downgradient vicinity of the tank farm.

In 1986, IT Corporation with Atlas Hydraulic Corporation removed twenty-one 25,000-gallon USTs from the tank farm, one 840,000-gallon AST (AST 2) from the upper bench of POL Hill, one 25,000-gallon AST from a location west of Building 717, and one 750-gallon UST from an area near the pump house. Details regarding removal activities are described in Section 4.2.1.1. Soil samples collected beneath the former tank locations following tank removals indicated the presence of volatile fuel hydrocarbon (vfh) beneath AST 2 and beneath the tank farm area. Groundwater samples collected from monitoring wells also indicated the presence of vfh contamination beneath former AST 2 and near the tank farm area.

In 1987, following the tank removals, IT continued its investigation of POL Hill to evaluate the extent of soil and groundwater contamination by excavating and sampling a series of expanding trenches. As a part of this investigation, IT excavated soil (to the physical extent possible) with TPH diesel concentrations greater than 1,000 ppm. Soil was excavated in the area of the former tank farm and its associated piping systems. According to the Weston Enhanced Preliminary Assessment (Weston, 1990), four of 27 soil samples collected in the AST 2 tank area following soil excavation activities indicated the presence of TPH at concentrations greater than 1,000 ppm. One of the four samples was collected from clay-filled materials in cracks of the fractured bedrock. The specific location of the other three samples exceeding TPH concentrations if 1,000 ppm was not specified. However, the report noted soil in the vicinity of these three samples was not removed prior to backfill with clean material. Interviews with IT personnel confirmed the information provided in the Weston report. The monitoring wells installed by Woodward-Clyde in 1985 were destroyed during the excavation of the former tank farm.

Between 1990 and 1991, IT again investigated areas in the vicinity of the former tank farm and AST 2 that had been identified with hydrocarbon concentrations in soil greater than 100 ppm, a newly established clean up level at that time. In the tank farm area trenches were again excavated and sampled to evaluate the vertical and horizontal extent of contamination. As a result of this investigation, soils with hydrocarbon contamination greater than 100 ppm were removed from the former tank farm on the lower bench of POL Hill. In addition, a 25,000-gallon AST, all the pipeline from the former AST 2 to the former tank farm, and concrete fuel islands were removed from the lower POL bench. The clean fill material placed at AST 2 (following tank removal in 1986) was also removed to expose native soil beneath the fill material. Soil sample locations previously documented with TPH concentrations greater than 100 ppm were then relocated and resampled. Two locations identified TPH concentrations greater than 100 ppm. These locations were excavated. The area was then backfilled to the original grade (IT, 1991).

In 1992, ESI conducted a groundwater sampling program. ESI installed 17 groundwater monitoring wells throughout the POL area. Shallow soil borings were also advanced and sampled to address specific areas of potential concern. The analytical results from the ESI investigation showed that excavations conducted by IT had effectively removed the fuel-contaminated soil and rock from the former tank farm on the lower bench of POL Hill. However, the investigation also showed that residual non-leaded fuel contamination remained at two locations: beneath AST 2, and along the downhill portion of the former pipeline that ran from AST 2 to the former tank farm. Beneath AST 2, TPH contamination was found in both the groundwater and unsaturated bedrock on the ridge beneath the former tank location. Beneath the gravity-fed fuel lines that formerly ran between AST 2 and the tank farm, elevated levels of TPH concentrations were found in the rock and groundwater along the pipeline alignment. The investigation report notes that TPH was only found in two of the seventeen groundwater samples collected (one beneath former AST 2 and one along the gravity-fed pipe line between AST 2 and the tank farm) (ESI 1993). A risk assessment indicated the site posed very low risk to public health for the current and future anticipated use of the site (ESI, 1993).

In response to comments from the regulatory agencies, USACE conducted a supplemental investigation in 1994. One new monitoring well was installed to evaluate potential

migration of contaminants downgradient of AST 2. As part of the supplemental investigation, six of the 17 groundwater monitoring wells previously installed were also sampled. The analytical results indicated that groundwater contamination had not migrated downgradient beyond the upper hillside bench where AST 2 had been located prior to its removal in 1986.

In October 1996, six new monitoring wells were installed by IT to improve the groundwater monitoring network coverage (IT, 1999a). These wells were first sampled in 1997 in conjunction with a groundwater monitoring program developed by USACE. As part of the comprehensive program, groundwater samples were collected from selected wells in February 1997, March / April 1998, September / October 1998, and January 1999 (IT, 1999a). The groundwater data collected during these sampling events continue to support the observations made in 1994 regarding the extent of contamination and, in fact, suggest the plume beneath AST 2 is shrinking. The results obtained between 1997 and 1999 indicated that TPH concentrations in groundwater are highest beneath the former location of AST 2 and decrease to below the residential cleanup goals within a short distance (approximately 100 feet). The TPH concentrations observed in the monitoring wells sampled appear to be gradually decreasing over time. These trends indicate that the concentrations and the size of the plume are declining and that natural attenuation is occurring (IT, 1999a).

During the construction of the groundwater treatment plant for Landfill 26, soil contamination was also detected at POL Hill in the vicinity of former buildings 736, 737, and 738 (the 600-gallon and 2,500-gallon ASTs were located in this general area). Soil samples were collected within and adjacent to the footprint of the planned treatment plant. Soil with hydrocarbon concentrations in excess of 100 ppm was removed within the footprint to the extent practical (i.e., to bedrock) (IT, 1999a). As part of a remedial investigation conducted by IT in 1996, five soil borings were advanced around the Landfill 26 groundwater treatment facility. The purpose of the borings was to evaluate the extent of petroleum hydrocarbon contamination that may have been left in place following removal of contaminated soil discovered during plant construction in 1993 (IT, 1999a). Soil samples were collected in each boring at approximately 2.5-foot intervals. With one exception, all soil sample results for TPH compounds in the borings were below 200 ppm. An unknown hydrocarbon was detected in one boring at 260 ppm at a depth of 2 feet. The sample from the next depth interval in the boring did not detect contamination (IT, 1999a).

The results of a human health and environmental risk assessment relating to POL Hill were presented in the Final Environmental Investigation Report (ESI, 1993). Based on the available information, POL Hill did not pose an unacceptable level of risk to either humans or ecological receptors. Remediation activities for POL Hill are discussed in Section 4.2.3.2.

In 1994, the Army selected natural attenuation and groundwater monitoring as a final remedy to address the residual contamination beneath former AST 2 and in the vicinity of the former gravity fed pipeline at the base of POL Hill. The Army submitted a closure report for POL Hill to the RWQCB in December 1999. The closure report documented the Army's selection of natural attenuation and monitoring as the final remedy. The Army is currently preparing a Closure Report for the tank farm area documenting that no further action is needed in this area. The Army is also preparing a Corrective Action plan documenting monitored natural attenuation as the selected remedy for the former AST 2 area. No

remedial activities were deemed necessary for the area or soil excavated prior to the construction of the Landfill 26 groundwater treatment plant.

4.2.3 Petroleum Remediation

4.2.3.1 Hospital Hill

The following remedial investigation activities were conducted at Hospital Hill (IT, 2000):

- Condemned Buildings 510, 511, 512, 521, and 525
- Demolished Buildings 510 and 521 (Building 511 was demolished by the New Hamilton Partnership)
- Performed exploratory trenching and soils sampling at Buildings 512, 515, and 520, which confirmed the absence of underground storage tanks (USTs). Only trenching was conducted at Building 511, which confirmed the absence of a UST
- Excavated and removed USTs at Buildings 510 and 521
- Each UST investigation included:
  - Potholing to evaluate the extent of potential TPH contamination
  - Removal of a wooden 750-gallon UST and associated piping
  - Sampling the soils beneath and in the vicinity of the removed UST
  - Removal of the soils identified as contaminated, approximately 960 cy
  - Confirmation soil sampling following soil removal
  - Backfilling excavation with clean soil
- Assessed east and west portions of the main sanitary sewer line (SS line) on Hospital Hill for impact
- Collected and analyzed
  - Soil samples at Buildings 510 and 521 to evaluate the extent of potential chemicals of concern in subsurface soils
  - A water sample from an open trench at Building 521
  - A whole rock sample at the base of the excavation at Building 521
  - A sediment sample from the east SS line downgradient of Building 520
- Installed six temporary groundwater monitoring wells (three each at Building 510 and Building 521), collecting and analyzing one groundwater sample from each monitoring well
- Removed 12 transformers at Buildings 510 and 515
  - Transformer liquid samples collected
  - Visual inspections to identify leaking transformers and oil staining
  - Containment pad cleaning at Buildings 510 and 515
  - Wipe samples at each containment pad at Buildings 510 and 515

– Removal, transport off site, and disposal of transformers

These activities were conducted to meet the scope of the remedial investigation, and to aid in the closure of the site. On August 18, 2000, the RWQCB issued a closure letter providing concurrence that no further action related to the underground storage tank releases at Building 510 and 521 was required.

4.2.3.2 POL Hill

In conjunction with the investigation activities conducted at POL Hill between 1985 and 1993, extensive remedial activities were also conducted. Many of the remedial activities conducted at POL Hill are described above as part of the site investigation discussion. However, a summary of remedial actions is provided below.

In 1986, IT Corporation with Atlas Hydraulic Corporation removed twenty-one 25,000-gallon USTs from the tank farm, one 840,000-gallon AST (AST 2) from the upper bench of POL Hill, one 25,000-gallon AST from a location west of Building 717, and one 750-gallon UST from an area near the pump house. At this time, IT also removed most of the associated fuel lines, pumping systems and associated equipment from the tank farm area. Before removing the tanks, IT removed the water control pit, the water separator house (Building 717) and the concrete vaults and piping located above the twenty underground tanks.

During investigative trenching and sampling activities in 1987, IT removed all soil containing hydrocarbon in excess of 1,000 ppm (the established cleanup level at the time). Soil with TPH concentrations greater than 1,000 ppm was removed from the former tank farm area and from the former location of AST 2. As described in Section 4.2.2.2 some soil with TPH concentrations above 1,000 ppm was left in place in the vicinity of AST 2. Approximately 13,000 cubic yards of contaminated soil were excavated and removed to a Class I landfill and approximately 4,000 cubic yards were aerated and re-used as non-contaminated backfill (IT, 1997b). Additional piping, fuel islands, and concrete structures were also removed.

In 1991, IT conducted further remediation and excavated soil with hydrocarbon concentrations in excess of 100 ppm from the former tank farm area and AST 2. At this time, IT removed approximately 24,000 cubic yards of contaminated soil and replaced the soil with clean borrow material (ESI, 1993). IT also removed a former water sump and the active 20,000-gallon JP-4 fuel tank at this time. The excavated areas were backfilled with clean fill.

The drums labeled waste oil and hydraulic oil, and waste solvent in Building 737 and the 600-gallon AST and 2,500-gallon AST observed in the vicinity of former buildings 736, 737 and 738 (Weston 1990, HLA 1991) were removed from the POL area prior to construction of the Landfill 26 groundwater treatment plant. No documentation was found during the preparation of the EBS to track the specific removal of the drums or tanks. However, none of these items was observed during the EBS site visit and interviews confirmed these items were not present at the time the treatment plant was constructed. The 1990 Weston report notes that drums that had accumulated in the POL area were removed on an annual basis by a contract administered by the Presidio of San Francisco (Weston, 1990).

As described in Section 4.2.2.2, petroleum (hydrocarbon) contamination was detected in soil in the vicinity of former buildings 736, 737, and 738 during the construction of the groundwater treatment plant for Landfill 26. Soil samples were collected along a grid system surrounding the footprint of the treatment plant. Soil with hydrocarbon concentrations in excess of 100 ppm was removed to the extent practical (i.e. to bedrock). Subsequent soil boring samples indicated contamination was not a concern.

4.2.4 Hazardous Substances Use and Storage

4.2.4.1 Hospital Hill

The CERFA Report (Earth Tech., 1994) suggests that medical supplies such as alcohol, acetone, peroxide, active acid, and disinfectants and cleaners were probably stored in all of the buildings at Hospital Hill. No records were available to document the quantities or specific type of substances stored. There is no documentation of hazardous substance disposal release at Hospital Hill.

4.2.4.2 POL Hill

Drums labeled waste oil, hydraulic oil and waste solvent were observed in Building 737 by HLA in 1991 (HLA, 1991). HLA reported the drums appeared empty. HLA also reported an 8-inch concrete berm and 12-inch “spill trench” were located around the perimeter of the drum storage area (HLA, 1991). Three cylinder type transformers were also located in the drum storage area. The transformers had been placed in metal or plastic containers (HLA, 1991). Four drums labeled as containing PCBs were located in a closed portion of Building 737 (HLA, 1991).

Transformers that had been located in the soil remediation area at POL Hill were removed and stored in the Building 737 garage prior to the demolition of the building. (Woodward-Clyde, 1995a). The containers present at Building 737 were removed by a hazardous waste disposal company prior to demolition (Woodward-Clyde, 1995a). There is no documentation of releases or spills of hazardous substances from POL Hill.

4.2.5 Hazardous Substances Release

4.2.5.1 Hospital Hill

No hazardous substance releases are known to have occurred at Hospital Hill.

4.2.5.2 POL Hill

No hazardous substance releases are known to have occurred at POL Hill.

4.2.6 Hazardous Substances Remediation

4.2.6.1 Hospital Hill

No hazardous substance remediation occurred at Hospital Hill.

4.2.6.1 POL Hill

No hazardous substance remediation occurred at POL Hill.

4.3 Adjacent or Surrounding Property Sources

VSIs were conducted for the adjacent properties surrounding Hospital Hill and POL Hill on September 7, 2000. These observations included both those properties immediately adjacent to the Hospital Hill and POL Hill fencelines and properties beyond the adjacent property parcels. These inspections were performed to identify sources of contamination that might have migrated or could migrate and impact Hospital Hill or POL Hill. Pertinent information obtained through the VSIs is also included in this EBS where appropriate.

4.3.1 Visual Site Inspection Findings

4.3.1.1 Hospital Hill

Hospital Hill lies within the uplands portion of HAAF, west of the General Services Administration Sale Area and former Outparcel A-2 (Figure 1-1). Today, residential housing and commercial facilities have been constructed north of Hospital Hill on property that has been previously transferred. A recreational area consisting of an open park and an amphitheater are present east of Hospital Hill. Base Housing is located to the south of Hospital Hill and is currently occupied by the Coast Guard. Administrative office buildings lie to the west of Hospital Hill.

4.3.1.2 POL Hill

POL Hill is located on the northern end of Reservoir Hill. Historically POL Hill was bordered by the main runway to the east and northeast, the jet engine test facility and open space to the south east, open space to the south and south west, and Landfill 26 to the north and northwest. Today the surrounding land use is similar, however, residential housing developments have been (or are being) constructed southwest and northeast of POL Hill on property that has been previously transferred. In addition, the jet engine test facility was completely removed and remediated to make room for the new residences.

4.3.2 Record Search Findings

As a part of this EBS, a records search using electronic database services provided by VISTA was conducted. The search encompassed an area located within a 4.0-mile radius around a point located centrally between Hospital Hill and POL Hill at HAAF. A complete listing of the records searched by VISTA is summarized in Section 2.2. The databases searched by VISTA that identified potential areas of environmental concern within a 1.0-mile radius from Hospital Hill and POL Hill are listed below.

- US EPA CERCLIS / NFRAP (Comprehensive Environmental Response, Compensation and Liability Information System / No Further Remedial Action Planned) List,
- SWLF (Solid Waste Inventory System),
- SPILLS identified by ERNS (Emergency Response Notification System),
- State of California Leaking Underground Storage Tanks (LUST),
- GNRTR (Generator) identified as a RCRIS-SQG (Resource Conservation and Recovery Information System – Small Quantity Generators), and

- State of California Registered Underground Storage Tanks (UST).

The potential areas of environmental concern identified by the database search are listed in Table 4-3. A summary of the VISTA report is provided in Appendix B.

TABLE 4-3
Potential Areas of Environmental Concern Identified by Records Review

Site	Address	Environmental Concern	VISTA Map ID[1]	Location[2]
Hamilton Air Force Base	Hamilton Air Force Base	CERCLIS/ NFRAP	1	Within 1.0 mile of Hospital Hill and POL Hill
Hamilton Air Force Base	Hamilton Air Force Base, Landfill #26	SWLF	1	Within 1.0 mile of Hospital Hill and POL Hill
Hamilton Air Force Base	Hamilton Air Force Base	SPILLS	1	Within 1.0 mile of Hospital Hill and POL Hill
Morrison Imports	5498 Redwood Highway	LUST	2	Within 1.0 mile of Hospital Hill and POL Hill
Cal Trans Materials Lab, District 4	5440 Redwood Highway	GNRTR	2	Within 1.0 mile of Hospital Hill and POL Hill
Super 7	5778 Redwood Highway	LUST	3	Within 1.0 mile of Hospital Hill and POL Hill
Chevron	5810 Redwood Highway	LUST	3	Within 1.0 mile of Hospital Hill and POL Hill
Shell Station	5821 Redwood Highway	GNRTR	3	Within 1.0 mile of Hospital Hill and POL Hill
Country Club Shell	5821 Nave	LUST/UST	3	Within 1.0 mile of Hospital Hill and POL Hill
Frank's Dry Cleaners	526 Alameda Del Prado	GNRTR	3	Within 1.0 mile of Hospital Hill and POL Hill
Pacific Bell C/O Allen UUC135	350 Alameda Del Prado	GNRTR	5	Within 1.0 mile of Hospital Hill and POL Hill
Pacific Bell (WC-135)	350 Alameda Del Prado	UST	5	Within 1.0 mile of Hospital Hill and POL Hill

[1] See Appendix B
[2] Based on VISTA Report (September 19, 2000)

A summary of the VISTA report for information on HAAF is provided below. Information regarding other sites located within 1 mile of Hospital Hill and POL Hill is provided in Appendix B. A review of the VISTA report indicates that none of the other sites is likely to have an adverse impact on the environmental conditions of Hospital Hill or POL Hill. These sites are not likely to affect Hospital Hill or POL Hill due to either limited nature and extent of contamination at the sites, the general nature of activities at the sites, and/or the distance between these sites and Hospital Hill and POL Hill.

The VISTA report indicated that HAAF was listed on the U.S. Environmental Protection Agency (US EPA) CERCLIS NFRAP list. The CERCLIS database is a comprehensive listing of known or suspected hazardous waste sites. These sites have either been investigated or

are currently being investigated by EPA. Sites on the CERCLIS NFRAP (No Further Remedial Action Planned) list have been removed from the CERCLIS database because no contamination was found, contamination was not serious enough to require federal Superfund action, or the contamination was removed quickly. The VISTA report shows HAAF is not on the National Priorities List (NPL). The report also identifies the presence of Landfill 26, a solid waste disposal facility and lists the landfill status as closed, un-permitted and unlicensed. The VISTA report also shows a spill was reported of possible diesel oil at HAAF in January 1988. The location of the spill was not reported. No other details are available in the report.

Based on the land use surrounding POL Hill, Landfill 26 is the only potential area of concern with respect to the potential presence and migration of contaminants to POL Hill. Landfill 26 was closed in 1995 following a Record of Decision (ROD) signed in August 1989. Based on the ROD and a 1992 Explanation of Significant Differences (ESD) a modified remedy consisting of a RCRA-type landfill cap was designed and constructed. Extensive data are available from Landfill 26 from a broad range of studies and investigations performed since 1995. Groundwater has been monitored at the landfill since 1993 in accordance with RWQCB waste discharge requirements. Concentrations and groundwater elevation trends are well established for the landfill. Contaminant concentrations in groundwater have not varied significantly since 1993. Previous investigations concluded that Landfill 26 had an impact on groundwater and, possibly surface water and sediment, but that these impacts were not found outside the Landfill 26 boundary. (CH2M HILL, 1999). Because the impacts to groundwater and potentially surface water and sediments are limited to the boundary of the landfill, Landfill 26 is not likely to have an adverse impact on POL Hill.

4.4 Disclosure of Non-CERCLA Issues

This section discloses the non-CERCLA environmental hazard and safety issues identified during the records review and / or visual site inspection.

4.4.1 Asbestos

4.4.1.1 Hospital Hill

The presence of asbestos-containing material in the Hospital Hill buildings was identified in asbestos surveys conducted at Buildings 510, 511, 512, 515, 520, 521, and 525 in 1998 and 1991 (Occusafe, 1989 and HLA, 1991a, b). Building 516 was not surveyed; however, there was no visual evidence of asbestos-containing materials (ACM) in this building (HLA, 1991a). The asbestos materials were removed from buildings 510, 511, and 521 as part of the building demolition process (ITSI, 1998) (Table 4-4).

4.4.1.2 POL Hill

In 1989 Occusafe conducted an asbestos survey of building 736, 737 and 738 (Occusafe, 1989). In 1991 Harding Lawson and Associates (HLA) conducted an additional investigation of asbestos at Buildings 736, 737, and 738 (HLA 1991b).

Building 715 was surveyed during UST removal activities conducted by IT Corporation. The asbestos materials were removed from these buildings as part of the building demolition process. No asbestos was identified in Building 737 (Table 4-5). No asbestos is known to be present in the groundwater treatment facility, which was constructed in 1993.

TABLE 4-4
Asbestos Findings at Hospital Hill

Building	Built Prior to 1985	Survey Results	Building Status	Notes
Hospital Hill				
510	✓	Contained asbestos	Demolished	Asbestos removed prior to building demolition by IT Corp. (Innovative Technical Solutions, Inc., 1998). Building debris transported to non-hazardous landfill for disposal in Class II asbestos cell (ITSI, 1998).
511	✓	Contained asbestos	Demolished	Asbestos removed prior to building demolition by New Hamilton Partners.
512	✓	Contains asbestos	Present	Occusafe and HLA identified the following suspect ACM: exterior cement siding, floor tile, hot water tank insulation, fireproof wallboard, and duct tape. Occusafe reported the condition of ACM found in this building ranged from non-friable to moderately friable.
515	✓	Contains asbestos	Present	Occusafe and HLA identified the following suspect ACM: pipe and pipe fitting insulation, floor tile, baseboard, and walk-in cooler. Occusafe reported the condition of ACM found in this building ranged from non-friable to moderately friable.
516	✓	Was not surveyed	Present	No visual evidence of suspect ACM (HLA, 1991a)
520	✓	Contains asbestos	Present	Occusafe and HLA identified the following suspect ACM: exterior cement siding, pipe and pipe fitting insulation, floor tile, cement wallboard, boiler insulation, and cement exhaust flue and spackling. Occusafe reported the condition of ACM found in this building ranged from non-friable to moderately friable.
521	✓	Contained asbestos	Demolished	Asbestos removed prior to building demolition by IT Corp. (Innovative Technical Solutions, Inc., 1998). Building debris transported to non-hazardous landfill for disposal in Class II asbestos cell (ITSI, 1998).
525	✓	Contains asbestos	Present	Occusafe and HLA identified the following suspect ACM: exterior cement siding. Occusafe reported the condition of ACM found in this building ranged from non-friable to low friability.

TABLE 4-5
Asbestos Findings at POL Hill

Building	Built Prior to 1985	Survey Results	Building Status	Notes
POL Hill				
715	✓	Contained asbestos	Demolished	Asbestos removed prior to building demolition by IT Corp.
717	✓	Not surveyed	Demolished	Building removed during POL Hill investigation and remediation by IT Corp.
736	✓	Contained asbestos	Demolished	Occusafe and HLA identified suspect ACM including insulation, flooring materials, adhesives, ceiling tile, sheetrock and roofing material. Occusafe reported the condition of ACM in this building ranged from non-friable to moderately friable. Building removed during Landfill 26 treatment plant construction.
737	✓	Did not contain asbestos	Demolished	Building removed during Landfill 26 treatment plant construction.
738	✓	Contained asbestos	Demolished	Occusafe and HLA identified suspect ACM including insulation, flooring materials, adhesives, ceiling tile, sheetrock and roofing material. Occusafe reported the condition of ACM in this building ranged from non-friable to low friability. Building removed during Landfill 26 treatment plant construction.
Landfill 26 Treatment Plant		Not surveyed	Existing	Built in 1993 – No asbestos

The findings of HLAs investigation for Buildings 736-738 are summarized below:

Building 736

Building 736 was a 1,496 square foot one-story cinderblock structure. In 1991, HLA identified suspect asbestos containing material (ACM) including floor tiles, insulation, ceiling tile, roof material, sheetrock etc. (HLA, 1991b). This building was removed during construction of the Landfill 26 groundwater treatment plant.

Building 737

Building 737 was an 800 square foot one story corrugated steel shed. In 1991, HLA observed the building was used to store 55-gallon drums of petroleum products. No suspected ACM was identified in this building by HLA. (HLA, 1991b).

Building 738

Building 738 was a 2,596 square fool one-story cinderblock structure. In 1991, HLA observed this building was a maintenance garage. HLA identified possible ACM including, pipe insulation, floor tile, and tank insulation. (HLA, 1991b).

4.4.2 Lead-Based Paint

No survey for the presence of a lead-based paint has been conducted at Hospital Hill or POL Hill. Based on the Hamilton Army Airfield real property inventory, all the buildings on BRAC property were constructed prior to 1978. For the purposes of this EBS, structures built prior to 1978 are considered to have the potential for the presence of lead-based paint. (Table 4-6). The building age of structures in BRAC property was determined from the Real Estate Inventory and other documents.

TABLE 4-6
Lead-Based Paint Potential

Building	Built Prior to 1978	Building Status	Notes
Hospital Hill			
510	✓	Demolished	Building demolished by IT.
511	✓	Demolished	Building demolished by the New Hamilton Partners.
512	✓	Present	
515	✓	Present	
516	✓	Present	
520	✓	Present	
521	✓	Demolished	Building demolished by IT.
525	✓	Present	
POL Hill			
715	✓	Demolished	All buildings have been demolished
717	✓	Demolished	All buildings have been demolished
736	✓	Demolished	All buildings have been demolished
737	✓	Demolished	All buildings have been demolished
738	✓	Demolished	All buildings have been demolished
LF 26 Treatment Plant		Existing	Constructed in 1993 – no lead-based paint

4.4.3 PCBs

4.4.3.1 Hospital Hill

Until 1995, 16 transformers, nine at building 510 and seven are building 515, were present at Hospital Hill. In 1995 three transformers in Building 515 (G2, G3, and G4) were removed and replaced with new transformers also labeled as G2, G3, and G4 (Richmond, 1994). In 1997, Building 510 was demolished and all transformers were removed (IT,2000). Today, seven transformers remain at Building 515.

During a transformer investigation conducted in 1994, capacities and PCB concentrations were determined for the transformers at Buildings 510 and 515 (Richmond, 1994). These results are summarized in Table 4-7.

TABLE 4-7
Transformers Identified at Hospital Hill

Transformer	Estimated Volume (gallons)	PCB Concentration (ppm)	Date Transformer Removed
Building 510			
E2	14	<2	September 22, 1995
E3	14	<2	September 22, 1995
E4	14	<2	September 22, 1995
E5	35	<2	September 23, 1995
E6	35	<2	1997, building demolition date
E7	35	<2	1997, building demolition date
E8	16	<2	1997, building demolition date
E9	16	<2	1997, building demolition date
F1	16	<2	1997, building demolition date
Building 515			
G2	13	196	September 14, 1995
G3	14	125	September 14, 1995
G4	14	589	September 14, 1995
G2 replacement	Not known	<1	Still present
G3 replacement	Not known	<1	Still present
G4 replacement	Not known	<1	Still present
G5	Not known	<2	Still present
G6	Not known	5.39	Still present
G7	Not known	5.05	Still present
G8	Not known	4	Still present

The 1994 Transformer Investigation also determined whether additional evaluation was required for each transformer based on the following criteria (Richmond, 1994):

a. A PCB concentration of 500 ppm, or greater, remove the transformer.

b. A PCB concentration of 50 ppm, or greater, but less than 500 and the transformer is leaking, remove the transformer.

c. A PCB concentration of 50 ppm, or greater, but less than 500 and the transformer is not leaking, no further action.

d. A PCB concentration less than 50 ppm, whether the transformer is leaking or not, no further action.

Based on these criteria and the scheduled demolition of Building 510, all transformers were removed from Building 510.

The 1994 Investigation indicated the concrete beneath transformers G2, G3, and G4 in Building 515 was stained, showing evidence of past leakage. Based on the above criteria, transformers G2, G3, and G4 were removed. The four remaining transformers required no further action according to criteria "d". Three transformers, G2, G3, and G4, in Building 515 were replaced because this building was still required for use, and it was policy to replace transformers that were showing signs of leakage.

All suspected stains on the transformer pads were cleaned and were then tested for PCBs. The results of the pad testing indicated that no further cleaning and/or disposal of the transformer pads was necessary. In addition, no surface work or soil excavation was necessary.

4.4.3.2 POL Hill

Building 737 was reported to contain empty drums labeled PCBs as well as transformers (Corlett Skaer & Devoto, 1992) (HLA, 1991b). Transformers from the soil remediation area at POL Hill were temporarily stored in Building 737 prior to its demolition.

Seven transformers (B7, B8, B9, C1, C2, C3 AND H9) and six electrical switches were removed from the POL Hill area under a Presidio of San Francisco contract prior to the construction of the new waste water treatment plant. The new construction removed "all evidence" of the transformers and switches except for transformer H9. Transformer H9 was located on a concrete slab within a fenced enclosure. There was no evidence of leakage from the transformer (Richmond, 1994).

As part of the VSI for this EBS, visual inspection was conducted to assess the condition of the transformer (H9) located in the fenced area on the ridge to the south of the former tank farm at POL Hill. Three cells that could have been step down transformer banks were visible inside the transformer box. Each cell had windings of cloth. The transformer was observed to be dry (i.e. no cooling oil). The transformer is located on a pad that appeared to be subject footings for a former light standard.

In 1991 Harding Lawson and Associates (HLA) conducted an investigation of PCBs, at Buildings 736, 737, and 738 (HLA 1991). The findings of this investigation are summarized below:

Building 736

In 1991, HLA noted that none of the light ballasts in the building was labeled non-PCB. No other electrical equipment or PCB issues were identified by HLA (HLA, 1991b). This building was removed during construction of the groundwater treatment plant for Landfill 26.

Building 737

No light ballasts or other suspect electrical equipment observed. Forty 55-gallon drums labeled hydraulic oil, waste oil, waste solvent, and other drums not labeled were observed in the building by HLA; all appeared empty. Three cylinder type transformers were observed in the building also. They had been placed in metal or plastic containers. Four 55-gallon drums labeled as containing PCBs were observed. The area in which the

containers were located was bermed with 8-inch concrete berm and 12-inch spill trench. This building was removed during construction of the Landfill 26 groundwater treatment plant. The containers in the building were removed prior to its demolition. There is no documentation to indicate releases of PCBs from this area.

Building 738

In 1991, HLA noted that none of light ballasts in Building 738 were labeled non PCB. HLA noted some may contain PCBs however, none were leaking. No other suspect electrical equipment was identified by HLA. (HLA, 1991b). This building was removed during construction of the Landfill 26 groundwater treatment plant.

4.4.4 Radon

A radon survey has not been conducted on Hamilton Army Airfield BRAC property. The CERFA Report indicates interviews with the Environmental Investigation contractor, a review of applicable environmental documents, and adjacent property radon survey results indicate that radon is not a concern at HAAF (Tetra Tech., 1994). Test data and survey results for the adjacent Navy property (housing) indicated radon below USEPA recommended action levels; information provided by U.S. Geologic Survey representatives indicate that radon is not found in the region due to the geology of the area. Therefore, the CERFA Report concluded radon is not considered to be an environmental concern at Hamilton Army Airfield (Tetra Tech., 1994).

4.4.5 Ordnance

There are no records or evidence of unexploded ordnance at Hospital Hill or POL Hill.

4.4.6 Radionuclides

4.4.6.1 Hospital Hill

Although, Building 515 is currently vacant, medical clinic facilities were formerly located in this building. Clinic personnel used a Kodak RP X-0 Mat Model x-ray machine located in the basement. No radioactive parts are associated with the x-ray machine and it is not considered a radionuclide source.

Records indicate that radioactive commodities were used in Building 515 (basement of the Nuclear Biological and Chemical [NBC] Room and in a safe on the first floor). The commodities were identified as Chemical Agent Alarm Detectors, which contain an americium-241 source, tritium compasses and tritium watches. There is very low potential that radiological contamination resulted from their use and storage. All commodities were transferred with their assigned units (U.S. Army Center for Health Promotion and Preventative Medicine, 1995a).

A survey was conducted at Building 515 to verify whether or not residual radioactivity remained after cessation of activities (i.e. the use and storage of radioactive materials) at the hospital Building 515, and if so, whether that residual is in compliance with the Nuclear Regulatory Commission and the State of California regulations and guidelines for decontamination of facilities prior to release for unrestricted use. A review of the survey results indicated that there were no radiological health hazards identified as a result of the use and storage of radioactive commodities in Building 515. The survey recommended that

Building 515 of Hamilton Army Airfield be released for unrestricted use (U.S. Army Center for Health Promotion and Preventive Medicine, 1995).

4.4.6.2 POL Hill

No activities relating to the storage or use of radionuclides are known to have occurred at POL Hill.

4.4.7 Surface Water and Storm Water Issues

Stormwater pumping facilities at Hamilton Army Airfield are still operating; however, none of the pumping facilities are associated with Hospital Hill. A series of drainage channels, levees, and three stormwater pump stations (located on the east side of Hamilton Army Airfield between Perimeter Road and the east levee) remove runoff and groundwater seepage from Hamilton Army Airfield and discharge the stormwater into San Pablo Bay.

The same system that services the airfield portion of the BRAC property, the POL Area, Hospital Hill, Parcels A2 and A3 BRAC properties also provides drainage for the hangar and building complex on the General Services Administration sale parcel, Landfill 26 on the General Services Administration Sale Property and the U.S. Coast Guard parcel (Earth Tech., 1994).

4.4.7.1 Hospital Hill

The Hospital Hill property is in an area that is hydrogeologically active. Soils in the area are sandy and gravelly loams that tend to have a higher hydraulic conductivity than relatively impermeable Bay Mud. However, the Hospital Hill area is located on a minor topographic high. Surface water flow would follow the local surface topography in the area, subsequently flowing away from Hospital Hill property and flowing downhill toward the east and northeast. Drainage of the Hospital Hill BRAC property is via sheet flow to storm catch basins along the hospital access road and along Escolta Avenue.

There are two drop inlets and a storm water line upstream (on the hill) which connect to a manhole and are currently in use. There are drop inlets at the bottom of the parking lot in front of the former hospital (Building 515). The steep gradient of this line flushes the manhole as observed with the sanitary sewer line (IT, 2000).

4.4.7.2 POL Hill

A drainage ditch just outside the northwestern boundary of POL Hill collects groundwater seepage and runoff water that flows northward across the northern portion of the POL Hill area. The ditch originates from the area immediately to the east of POL Hill and drains westward under Aberdeen Road and into the main HAAF perimeter drainage system (Woodward-Clyde, 1995a).

4.4.8 Sanitary Sewer System

The installation sewage treatment plant was located on the east side of Hamilton Army Airfield between Perimeter Road and the east levee. The outfall pipe from the sewage treatment plant extended approximately 600 feet eastward from the levee into the tidal wetlands. The former sewage treatment plant provided primary and secondary treatment of installation generated sewage in aboveground concrete tanks. The former sewage treatment

plant operated until November 1986, after which time all Hamilton Army Airfield sanitary wastes were pumped to the Novato Sanitation District. The plant was demolished in 1987 (Earth Tech., 1994).

4.4.8.1 Hospital Hill

During a screening-level investigation by PRC Environmental in 1996, one sediment sample from the east sanitary sewer line was collected from material attached to a root ball found along the southeastern perimeter of Hospital Hill, downgradient of Building 520. The sediment was collected and analyzed for metals, polychlorinated biphenyls, and TPH measured as extractable and purgeable. Analytical results identified only metals and indicated that no concentrations exceeded the USEPA residential preliminary remediation goals. No sediment was found in the manholes along the sanitary sewer line on the west side of Hospital Hill (IT 2000).

Minimal sediment accumulates in the manholes due to the steep gradient of the lines coming off the hill. The west line, which serviced the main hospital building, is not currently in use (it has been plugged with concrete at the manhole near the toe of the west hill) and any trace of sediment from Base activities 30 years ago are not present. Therefore, the sanitary sewer lines are not believed to be a source of contamination at Hospital Hill (IT, 2000).

4.4.8.2 POL Hill

No sewer services are present at POL Hill. The groundwater treatment plant for Landfill 26 has a self-contained system.

4.4.9 Waste Management

4.4.9.1 Solid Waste Management

No solid waste management activities are known to have occurred at Hospital Hill or POL Hill. Landfill 26, the former installation sanitary landfill, is located approximately 2,000 feet north west of Hospital Hill, adjacent to the southwest of POL Hill between Ammo Hill and Reservoir Hill. The landfill is located in the General Services Administration Phase II sale parcel. Wastes historically generated at Hamilton Army Airfield and disposed onsite included trash and garbage, and construction debris. The landfill has ceased operation and is currently being monitored by the U.S. Army Corps of Engineers. See Section 4.3.2 for discussion of Landfill 26.

4.4.9.2 Mixed Waste

No information was obtained that would indicate that mixed waste was generated or disposed of at Hospital Hill or POL Hill.

4.4 9.3 Medical/Biological Waste

Medical and dental wastes generated at the Hamilton facilities were properly disposed. There was no medical waste incinerator at the installation. The exact off-site disposal method for medical waste from Hamilton was not identified (Earth Tech., 1994).

4.4.10 RCRA Facilities/SWMUs

Hospital Hill and POL Hill have no existing environmental management plans and practices addressing RCRA Facilities / Solid Waste Management Units (SWMUs), permits, and program elements. Hospital Hill and POL Hill have no RCRA-permitted facilities or SWMUs.