

# **Crissy Field Operable Unit 4 Implementation Report**

**Presidio of San Francisco,  
California**

**July 2004**

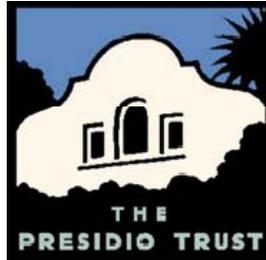
**Prepared for:**

**The Presidio Trust  
San Francisco, California**

**Prepared by:**

**Erler & Kalinowski, Inc.  
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**A0000003.08**



29 July 2004

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Subject: Crissy Field Operable Unit 4 Implementation Report  
Presidio of San Francisco, California  
REQUEST FOR CERTIFICATION

Dear Messrs. Boggs & Ponton:

The Presidio Trust ("Trust") is pleased to submit the enclosed *Crissy Field Operable Unit 4 Implementation Report* ("Implementation Report") for the Crissy Field Area at the Presidio of San Francisco, California. The Implementation Report was prepared to meet the requirements of Section 5.16 of the Consent Agreement with the Department of Toxic Substances Control ("DTSC") and Task 12 of the San Francisco Bay Regional Water Quality Control Board ("RWQCB") Order No. R2-2003-0080.

The Implementation Report documents the completion of remediation requirements (except for on-going groundwater monitoring) at the sites included in the *Final Remedial Action Plan, Crissy Field Area*, dated April 1998. The Crissy Field Area has been designated as Operable Unit 4 in the Consent Agreement. The Implementation Report also addresses other sites within Operable Unit 4, including (a) contingency sites discovered during the construction and restoration of Crissy Field, (b) petroleum sites, and (c) historical records review sites identified in the report entitled *Additional Sites of Potential Environmental Concern: In-Depth Historical Research Results*, prepared by IT Corporation and dated 17 February 1999.

As discussed in Section 5 of this report and summarized in Table 5-1, the Trust is requesting that DTSC and the RWQCB provide closure certification for all sites within

Messrs. Boggs and Ponton  
Crissy Field Operable Unit 4 Implementation Plan  
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the Crissy Field Area Messrs. Boggs and Ponton Crissy Field Operable Unit 4 Implementation Report 29 July 2004 Page 2 (Operable Unit 4) that are under the respective agency's jurisdiction, except for the on-going groundwater monitoring required at the Building 923/937 and Building 979 Areas.

The Trust looks forward to receiving closure certification for the Crissy Field Area. If you have any questions regarding this report, please do not hesitate to call me at 415-561-4259.

Very truly yours,

THE PRESIDIO TRUST

Craig Cooper  
Remediation Program Manager

Enclosure

cc: Brian Ullensvang (National Park Service)  
Mark Youngkin (Restoration Advisory Board)  
Doug Kern (Restoration Advisory Board)

**CRISSY FIELD OPERABLE UNIT 4  
IMPLEMENTATION REPORT**

PRESIDIO OF SAN FRANCISCO, CALIFORNIA

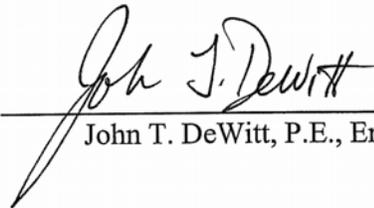
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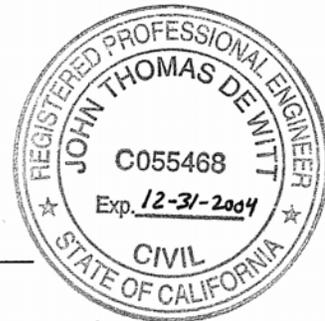
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7/29/2004

Date

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Presidio of San Francisco, California

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# 1. INTRODUCTION

## 1.1 PURPOSE OF REPORT

This Crissy Field Implementation Report (“Implementation Report”), prepared by Erler & Kalinowski, Inc. (“EKI”) on behalf of the Presidio Trust (“Trust”), with input and assistance from the National Park Service (“NPS”), is intended to meet the requirements of Section 5.16 of the Consent Agreement with the Department of Toxic Substances Control (“DTSC,” 1999a) and Task 12 of San Francisco Bay Regional Water Quality Control Board (“RWQCB”) Order No. R2-2003-0080 (RWQCB, 2003a) for the Crissy Field Area Operable Unit (“OU 4”).

Section 5.16 of the DTSC Consent Agreement requires the Trust to submit an Implementation Report that documents the completion of remedial activities performed under the oversight of the DTSC. The Crissy Field Remedial Action Plan (“Crissy Field RAP”) (Army and DTSC, 1998d) and the associated work plan for the Crissy Field RAP (Army, 1998c) were prepared by the Army to implement remedial actions at Crissy Field. The Trust has also conducted remedial actions at Crissy Field. Based on the remedial activities conducted in the Crissy Field RAP Area and as documented by soil and groundwater results, the Trust concludes that no further action is needed at the Crissy Field RAP sites and other associated sites in the Crissy Field RAP Area, except for limited groundwater monitoring at the Building 923/937 Area (groundwater) and the Building 979 Area (groundwater). This Implementation Report is intended to provide the necessary documentation to obtain DTSC closure and certification of completion for the Crissy Field RAP sites as well as additional sites in the Crissy Field RAP Area that are identified in this report.

Task 12 of Order No. R2-2003-0080 (the “Order”) (RWQCB, 2003a) calls for submittal of a technical report that requests closure certification for underground storage tanks (“USTs”), aboveground storage tanks (“ASTs”), and fuel delivery system (“FDS”) pipelines following completion of removal and remedial actions. Based on the remedial activities conducted for the USTs, ASTs, and FDS line within the Crissy Field RAP Area, as documented by soil and groundwater sampling results or based on documentation and historical records reviews, the Trust concludes that cleanup levels and remedial goals have been met for the petroleum sites as documented in this report, unless otherwise indicated in this report.

In view of this completion of remedial actions for soil and the submittal of the associated documentation, the Trust asks that the requirements for future Five-Year Status Reports,

described in Section 5.14 of the Consent Agreement and Task 13 of the Order, be waived for all of the sites within the Crissy Field RAP Area, except for the two sites with ongoing groundwater monitoring requirements (Building 923/937 Area (groundwater) and the Building 979 Area (groundwater)).

This Crissy Field Implementation Report was prepared to document remedial actions and request closure certification for the Crissy Field sites. This report also includes an assessment for each of the sites for unrestricted land use.

## **1.2 PRESIDIO BACKGROUND AND LOCATION**

The Presidio of San Francisco (“Presidio”) is located at the northern tip of the San Francisco Peninsula (Figure 1-1). The Presidio, occupying 1,491 acres, is bounded by San Francisco Bay on the north and the Pacific Ocean on the west. The remaining boundaries are with the City of San Francisco.

The Department of the Defense, Department of the Army (“Army”) operated the Presidio as a military post from 1848 to 1994. It served as a coastal defense fortification and a mobilization and embarkation point.

The Presidio lies within the Golden Gate National Recreation Area (“GGNRA”), created by Congress in 1972. The GGNRA legislation specified that, if the military could no longer use the Presidio, jurisdiction would be transferred to the Department of the Interior, National Park Service (“NPS”). In 1972, the Army transferred Baker Beach, part of Crissy Field, and the Fort Point National Historic Site to the NPS. In 1989, the Army announced that the Presidio would close as part of the Base Realignment and Closure Act (“BRAC”). The Army transferred the remaining portion of the Presidio to the NPS in 1994.

In 1996, Congress enacted the Presidio Trust Act (Section 103 of the Omnibus Parks and Public Lands Management Act of 1996, Public Law 104-333, 110 Stat. 4097) creating the Presidio Trust and giving the Trust jurisdiction over the 1,168-acre inland area of the Presidio known as Area B. The NPS continues to manage the shoreline area known as Area A. See Figure 1-2 for the Area A/Area B boundary.

In 1990, in anticipation of the transfer by the Army, the NPS began planning the conversion of the Presidio from a military post to a national park. The planning effort culminated in the General Management Plan Amendment (“GMPA”) prepared by the NPS (NPS, 1994). The GMPA guides the overall management and improvement of the Presidio, and is the governing plan for Area A. The Trust prepared the *Presidio Trust Management Plan* (“PTMP”) (Presidio Trust, 2002) setting forth the Trust’s land use

policies and general management framework for Area B. The Trust manages the Presidio in accordance with the PTMP, the general objectives of the GMPA, and in such a way as to protect the Presidio from development and uses that would destroy the scenic beauty, historic and natural characteristics of the area, and cultural and recreational resources. The Crissy Field RAP Area is located in both Area A and Area B.

### **1.3 TRANSFER OF ENVIRONMENTAL CLEANUP RESPONSIBILITY**

Subsequent to the transfer of the Presidio to NPS and the Trust, it was apparent that park preservation and reuse could be realized more quickly and efficiently and cleanup would be more effective if the Trust controlled and managed the environmental restoration of the Presidio. With certain exceptions identified in Section 1.5, the Trust assumed responsibility for remediation of both Areas A and B of the Presidio by signing the *Memorandum of Agreement Regarding Environmental Remediation at the Presidio of San Francisco* among the Trust, Army, and NPS (“Presidio MOA”) (Trust, Army, and NPS, 1999) and the *Memorandum of Agreement for Environmental Remediation of Presidio of San Francisco “Area A” Property* between the Trust and NPS (“Area A MOA”) (Trust and NPS, 1999).

### **1.4 OVERVIEW OF THE CONSENT AGREEMENT**

The Trust entered into a Consent Agreement with the California Environmental Protection Agency, Department of Toxic Substances Control (“DTSC”) and NPS on 30 August 1999 (DTSC, 1999a). The Consent Agreement establishes responsibilities and procedures for cleanup of releases of hazardous substances and hazardous waste at the Presidio under the Comprehensive Environmental Response, Compensation, and Liability Act (“CERCLA”) and Resource Conservation and Recovery Act (“RCRA”). The Consent Agreement specifically identifies the following nine Operable Units (“OUs”):

OU 1 Public Health Service Hospital (“PHSH”)

OU 2 Main Installation

OU 3 Firing Ranges

OU 4 Crissy Field Area

OU 5 Directorate of Engineering and Housing (“DEH”) Area

OU 6 Miscellaneous Sites

OU 7 Basewide Cumulative Effects

OU 8 Golden Gate Bridge Highway and Transportation District (“GGBHTD”) Site

OU 9 California Department of Transportation (“Caltrans”) Site

OU 4 is the focus of this implementation report. The Trust has submitted the DEH Area (OU 5) Implementation Report for certification by DTSC (Mactec, 2003; Treadwell & Rollo, 2004a)

It should be recognized that CERCLA governs only the cleanup of a release or threatened release of a hazardous substance into the environment, which incorporates substances, elements, compounds, solutions, or mixtures regulated under RCRA, Clean Water Act (“CWA”), Clean Air Act (“CAA”), or Toxic Substances Control Act (“TSCA”). The definition of hazardous substances excludes petroleum hydrocarbons. The National Oil and Hazardous Substances Pollution Contingency Plan (“NCP”) at Title 40 of the Code of Federal Regulations (“CFR”), Part 300.5 states that the term hazardous substances:

...does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance in the first sentence of this paragraph, and the term does not include natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas).

Accordingly, the Trust addresses releases of petroleum hydrocarbons at the Presidio under its petroleum program overseen by the RWQCB.

As this Crissy Field Implementation Report includes the Army and Trust’s measures to address CERCLA issues overseen by the DTSC and petroleum sites overseen by the RWQCB, the Trust is simultaneously submitting this report to the DTSC and RWQCB and requesting both agencies to provide closure certification for sites within their respective jurisdiction.

## **1.5 ENVIRONMENTAL CLEANUP RESPONSIBILITIES RETAINED BY ARMY AND OTHERS**

Under the Presidio MOA, the Army agrees to retain responsibility for cleanup of the following sites or types of contaminants:

- Contamination caused by the Army’s operations, if any, that remains unidentified as of the effective date of the Presidio MOA (i.e., unknown contamination).

- Radiological materials, chemical and biologic warfare agents, and unexploded ordnance, if any, that may be disposed of at the Presidio.
- Contamination present in off-shore sites, if any, due to use of the Crissy Field Skeet Range and Rifle Institute, or associated with any other activity attributable to the Army. Off-shore sites are defined in the Presidio MOA as being those locations “seaward of the Presidio’s Mean Lower Low Water elevation line at zero (0) feet, equal to the National Geodetic Vertical Datum of 1929 (NGVD29) at minus two point eight four (-2.84) feet.”

In addition, the Army retains responsibility for the cleanup of the following sites, to the extent that the responsible party does not remediate the site in accordance with applicable law:

- GGBHTD site
- Caltrans site
- Former Fort Point United States Coast Guard (“Coast Guard”) site.

As lead state agency, DTSC acknowledges the Army’s responsibility for remediation of the above sites and contaminants. GGBHTD, Caltrans, and the U.S. Coast Guard are participating in cleanup of contamination caused by their operations at OU 8, OU 9, and the former Coast Guard site, respectively. DTSC is overseeing remediation of OU 8 and OU 9 because these sites involve releases of hazardous substances. DTSC has entered into separate voluntary cleanup agreements with GGBHTD and Caltrans for cleanup of OU 8 and OU 9. DTSC has also been overseeing investigations of the former Coast Guard site, although the Coast Guard does not have a formal agreement with DTSC.

## 2. BACKGROUND OF THE CRISSY FIELD RAP AREA

Crissy Field was primarily used as an airfield, for aircraft and vehicle maintenance, storage, refueling, and other light industrial activities to support the Army. As shown on Figure 2-1, the Crissy Field Area is located along the northern boundary of the Presidio of San Francisco. The Army conducted a remedial investigation and feasibility study (Dames & Moore, 1997b, 1997a) that included sites in the Main Installation (OU 2), Crissy Field (OU 4), and DEH (OU 5). The Army also completed a site investigation of the Small Arms Firing Ranges (OU 3), which included two sites in the Crissy Field RAP Area (Montgomery Watson, 1997b). The Army prepared the Crissy Field Remedial Action Plan (“RAP”) (Army and DTSC, 1998d), which outlined the remedial actions for several specific Crissy Field sites. The Crissy Field RAP was prepared to fulfill the requirements of the California Health and Safety Code Section 25356.1 as well as the substantive technical requirements for remedy selection in the NCP (40 CFR Part 300).

The Army also prepared the *Remedial Action Work Plan, Crissy Field Area, Presidio of San Francisco* (Army, 1998c) to guide the implementation of the Crissy Field RAP. The Army conducted expedited remedial actions at the DEH and Crissy Field sites to allow for the restoration of a 100-acre shoreline park within the GGNRA. The Army removed more than 87,000 tons of hazardous fill material between 1998-1999, followed closely by the restoration contractor’s removal of seventy acres of asphalt and concrete. The landscape was reshaped to create an 18-acre tidal marsh, a 28-acre grassy field (the restored “airfield”), several picnic areas, and a promenade that is part of the 400-mile Bay Trail. The \$34 million project was funded in large part by private donations, and relied a great deal on community involvement and volunteer efforts. The Golden Gate National Parks Conservancy, the non-profit support partner of the GGNRA, sponsored the restoration project.

This Crissy Field Implementation Report addresses the sites included in the Crissy Field RAP and other associated sites as identified in Table 2-1. Sites only believed to be contaminated with petroleum hydrocarbons (non-CERCLA sites) were generally not included in the Crissy Field RAP; however, aboveground storage tanks (“ASTs”) and underground storage tanks (“USTs”) located in the areas addressed by the Crissy Field RAP are included in this report such that certification and closure for the majority of the Crissy Field area can be achieved simultaneously. Other sites near or within Crissy Field included in the Army’s RI and FS that are not included in this report have been or are being addressed by the Trust under other programs. In particular, the Army addressed remedial actions at the DEH under the DEH RAP (Army and DTSC, 1997).

## 2.1 CRISSY FIELD RAP AREA SITES

The background and nature and extent of the various sites in the Crissy Field RAP Area are described in a number of past Army- and Trust-prepared documents, which are included in the reference list of this report (Section 7). The approach of this Implementation Report is to bring together and summarize the remedial actions performed and documented in many of these reports and, in a coordinated effort, to address all of the known contamination related issues in the Crissy Field RAP Area. Table 2-1 and Figure 2-1 identify the sites within and near the Crissy Field RAP Area. The Crissy Field RAP Area does not directly match the GMPA Crissy Field Planning Area (NPS, 1994) or the Trust's PTMP Crissy Field Planning District (Trust, 2002). Sites included within and adjacent to the Crissy Field RAP Area are shown on Figure 2-1.

As a requirement of the Crissy Field RAP, the Army prepared a Contingency Action Plan to address odorous or other potentially chemically-impacted soil and other potentially hazardous debris that were likely to be encountered during restoration activities (Army, 1998b). The Contingency Action Plan provided guidelines for responding to sites issues that were unknown prior to the restoration and were encountered during the construction process. While these contingency sites were not specifically identified in the Crissy Field RAP, the Army and the Trust addressed several contingency sites that were discovered during the restoration of Crissy Field. These contingency sites are also listed in Table 2-1.

In addition, several petroleum sites are located within the Crissy Field RAP Area. These sites are discussed in more detail in Section 3.2. In order to meet a DTSC request that all environmental remediation issues (including closure of petroleum sites) be addressed before certifying a site for closure, this Crissy Field Implementation Report includes information for closure on the tanks listed in Table 2-1. In Section 5, this Crissy Field Implementation Report requests closure and no further action certification from the RWQCB for these petroleum sites within the Crissy Field RAP Area.

Table 2-1 also includes a category of sites entitled "Historic Records Review Sites within Crissy Field." These sites were identified in the report entitled *Additional Sites of Potential Environmental Concern: In-Depth Historical Research Results* (IT, 1999g). While these sites are not included in the Crissy Field RAP, they have been included in this document to fulfill the Trust's goal of comprehensive closures for all sites within the Crissy Field RAP Area. These sites are discussed in more detail in Section 3.3.

There are sites adjacent to or partially within the Crissy Field RAP Area that are not addressed in the Crissy Field RAP or this Crissy Field Implementation Report (e.g., DEH, Building 637, Building 207/231, the Commissary/Post Exchange Study Area, and

the Building 633 Firing Range). These sites are identified in Table 2-1. The program and associated documents describing the remedial actions at the sites are listed in Table 2-1. These sites are also shown on Figure 2-1. As these sites are not addressed in the Crissy Field RAP, they are not carried further through this report.

## **2.2 APPLICABLE CLEANUP LEVELS**

Most of the cleanup levels for the Crissy Field RAP Area were based on recreational human health and ecological risk assessments conducted by the Army in the Presidio RI (Dames & Moore, 1997b) and modified by comments (EKI, 1997) on the Draft RAP. Cleanup levels for petroleum hydrocarbons were based on RWQCB Order No. 96-070 (RWQCB, 1996). The Crissy Field RAP contains a table listing each site identified as requiring remedial action, the specific chemicals of concern to be addressed, and the respective cleanup level associated with the chemicals. A copy of this table is included in Appendix A. The tables in Section 3 include a comparison of the verification sampling results to the Crissy Field RAP cleanup levels in order to demonstrate that the remedial actions performed meet the applicable cleanup levels.

### **3. SATISFACTION OF THE CRISSY FIELD RAP REQUIREMENTS**

The Crissy Field RAP addressed known, potentially contaminated sites within the Crissy Field RAP Area (Army and DTSC, 1998d), as shown on Figure 2-1 and listed in Table 3-1. As discussed in Section 2, this Crissy Field Implementation Report also addresses other sites located within the Crissy Field RAP Area (e.g., tank sites, FDS, and historical records review sites).

#### **3.1 SITES ADDRESSED UNDER THE CRISSY FIELD RAP AND ASSOCIATED MEMORANDA FOR THE RECORD**

Table 3-1 summarizes a variety of pertinent site issues at each of the sites included in the Crissy Field RAP or Associated Memoranda for the Record (Army, 1998e, 1998f, 1998g, 1998h). The following types of sites that have been remediated by the Trust or Army are included in Table 3-1:

- Sites for which remedial actions identified in the Crissy Field RAP have been implemented (sites designated as no further action in the Crissy Field RAP are not included in Table 3-1);
- Sites that were not formally included in the Crissy Field RAP, but were included in the Associated Memoranda for the Record (i.e., Former Buildings 901 through 919 and removal of tidal marsh storm drains and sediments);
- Crissy Field Contingency Sites addressed by the Army or Trust during restoration work at the site; and
- Fuel Distribution System (“FDS”) segments located in the Crissy Field RAP Area.

The columns in Table 3-1 include the site name, a description of remedial actions conducted at the site, a description of variations from the planned work, a summary of results of the remedial actions, a comparison to residential cleanup levels, a listing of future work at the site, and references to specifically applicable reports and regulatory agency responses for the site. Remedial actions in the Crissy Field RAP generally included excavation and off-site disposal. In some instances, pre-remediation soil sampling was included as part of the remedy. The detailed summaries of remedial actions conducted (often including amount of soil removed), whether the remedial actions achieved the applicable cleanup levels, the exceptions to the Crissy Field RAP cleanup

levels, and the rationale for the on-going protectiveness at such sites are provided in Table 3-1 and are not duplicated in the text. In the few instances when the Crissy Field RAP cleanup levels were not achieved, the main reason was the inability to excavate residual material above cleanup levels, due to the presence of an existing (often historic) structure (see Table 3-1).

Figure 3-1 depicts the remediation areas for each of the Crissy Field RAP sites. Appendix B includes detailed figures for each of the sites that show the verification sampling locations and extents of excavations. Figures for the FDS segments and Contingency Sites for which formal figures were not available are not included in Appendix B. Electronic copies of analytical data tables for each of the Crissy Field RAP Sites listed in Table 3-1 are provided on a compact disk in Adobe Acrobat® PDF file format in Appendix C. Data for contingency sites where data was not collected or the site is being incorporated into the Commissary/PX Corrective Action Plan (“CAP”) (i.e., Site 111098-1100 and Site 171199-1100) are not included in Appendix C.

Sites identified as no action in the Crissy Field RAP are not included in Table 3-1 because no remedial actions were implemented at these sites. These no action sites include the DEH Firing Range and Fill Site 7 Groundwater.

As summarized in Table 3-1, the remedial activities performed at the sites listed in the table (which includes all of the Crissy Field RAP sites and associated sites) support the following conclusions:

- Post-excavation verification sampling was sufficient to assess the effectiveness of the remedial activities performed;
- Chemical concentrations detected in the verification soil samples are below the soil cleanup levels in the RAP (or, in the few instances where concentrations exceed the cleanup levels, the residual chemical concentrations should not pose an adverse risk to human and ecological receptors); and
- On the basis of the remedial activities and verification sampling results, no further remedial actions are required at the sites in Table 3-1 to satisfy the objectives and requirements of the Crissy Field RAP and the associated Work Plan, except for limited groundwater monitoring (see Section 6).

### **3.2 PETROLEUM SITES ADDRESSED IN THE CRISSY FIELD RAP AREA**

Petroleum sites located within the Crissy Field RAP Area are shown on Figure 3-2 and listed in Table 3-2. These sites include former ASTs and USTs located within the

Building 900s Area of Crissy Field. CAP sites that fall partially within the Crissy Field RAP Area (i.e., Commissary/PX Area, Building 637 Area, Building 207/231 Area) are not included in this document. The background, history, investigations, and remedial actions at the petroleum sites are described in a number of past Army- and Trust-prepared documents. As discussed previously, the approach of the Crissy Field Implementation Report is to bring together available information from earlier reports and investigations and, in a coordinated effort, to address the known or potential contamination-related issues at the sites.

Table 3-2, which is intended to be the Case Closure Summary required under Section 12 of the Order (RWQCB, 2003a), summarizes the investigation, remediation activities, and verification sampling results at these petroleum sites. In some cases, the tanks were found not to exist. For such sites, the Case Closure Summary (Table 3-2) provides the known information about the tank site and summarizes investigation and remediation activities performed in the vicinity of the tank site. Together, that information is used to support the Trust's request for closure certification. Where investigation or verification sampling data are available, chemical concentrations are compared to the cleanup levels in Order No. R2-2003-0080. The Trust is requesting closure from the RWQCB for all of the petroleum sites in Table 3-2 in accordance with Section 12 of the Order (see Section 5). In addition, for the tank sites under DTSC oversight (either specifically identified in the Consent Agreement (DTSC, 1999a) or tanks that contained or may have contained potentially hazardous substances regulated under CERCLA), the Trust is requesting closure from the DTSC for those sites under DTSC oversight, in accordance with Section 5.16 of the Consent Agreement.

### **3.3 HISTORIC RECORDS REVIEW SITES IN THE CRISSY FIELD RAP AREA**

At the request of community members of the Restoration Advisory Board ("RAB"), the Army conducted a records review of former and existing Presidio buildings to evaluate if historic building uses may have resulted in contamination of the buildings or surrounding environment (IT, 1999g) ("Historical Records Report"). Sites within the Crissy Field RAP Area that were reviewed by the Army for the Historical Records Report are shown on Figure 3-3 and listed in Table 3-3. This table includes information such as the site name, the category assigned to the site by the Army base on the available information,<sup>1</sup> a

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<sup>1</sup> Based on the Army Memorandum (IT, 1999g), the Site Categories are:  
A – Army research suggests that additional information may be needed for site closure.  
B – Army indicated that site was included in previous or ongoing investigation/remediation.  
C – Army research did not reveal known or potential environmental concerns at site.  
D – Site are outside the jurisdiction of the National Park Service or Presidio Trust.

brief site description, a description of investigations or remedial actions performed at or in the vicinity of the site, a conclusion regarding the potential environmental concern for each site, a listing of future work at the site, and pertinent references. The Trust augmented the information provided in the Historical Records Report by evaluating available data from the Army's remedial investigation, verification sampling results from nearby remediation activities, and groundwater monitoring. Based on these results, no further action is recommended for all of the sites included in Table 3-3. As such, in accordance with Section 5.16 of the Consent Agreement and Section 12 of the Order, as appropriate (see Section 5), the Trust is requesting closure for the historic records review sites in the Crissy Field RAP Area.

### **3.4 GROUNDWATER MONITORING DATA**

Groundwater remedial actions in the Crissy Field RAP included groundwater monitoring in the Building 923/937 Area and the Building 979 Area (collectively "the Building 900s Area") to confirm that source removal at these sites (see Table 3-1) were effective at reducing chemical concentrations to levels below the applicable saltwater quality standards through the study sites. The RAP requires that groundwater monitoring be performed for five years. The primary chemicals in groundwater at these sites include chlorinated solvents (trichloroethene ("TCE"), cis- and trans-1,2-dichloroethene ("c-1,2-DCE" and "t-1,2-DCE"), and vinyl chloride) and petroleum hydrocarbons and related constituents (benzene, toluene, ethylbenzene, and xylenes ("BTEX")). These chemicals are identified as the chemicals of concern ("COCs") in groundwater at the Building 900s Area.

Figure 3-4 shows previous and existing groundwater monitoring wells in the Building 900s Area. Potentiometric surface maps for the Crissy Field Area sites from which groundwater monitoring data is collected on a regular basis are included in Appendix D. Table 3-4 summarizes the groundwater data and trends at the Building 900s Area, including comparison with Crissy Field RAP cleanup levels. As described in Table 3-1, the Trust has completed 2.5 years of groundwater monitoring in the Building 900s Area. Although the RAP requires 5 years of monitoring, COC concentrations are significantly less than the RAP cleanup levels. Therefore, the Trust performed a trend analysis using the Mann-Kendall non-parametric test (Gilbert, 1987) to assess whether the available data show a stable, decreasing, or increasing trend in a given well. The Mann-Kendall test could only be performed for wells with detected COCs. Results of the trend analysis are presented in Table 3-4. As shown in Table 3-4, COCs have not been detected in many of the wells. Of the 270 trend analyses for the 10 detected chemicals in the 27 wells summarized in Table 3-4, only five wells had a chemical or two that exhibited

statistically significant upward trend of volatile organic compound (“VOC”) concentrations over time (i.e., approximately two percent of detected chemicals). All other chemicals in the wells exhibited stable or decreasing trends in chemical concentrations over time. Moreover, the maximum concentrations of the upward trending chemicals are well below Crissy Field RAP cleanup levels.

These findings suggest that on-going quarterly groundwater monitoring for an additional 2.5 years is not necessary. Therefore, the Trust is proposing a reduced monitoring program of selected groundwater monitoring wells in the Building 900s Area for the remaining 2.5 years. The proposed future groundwater monitoring program is described in Section 6.2.

### **3.5 PROTECTIVENESS STATEMENT AND CASE CLOSURE SUMMARY FOR PETROLEUM SITES**

Tables 3-1 through 3-3 provide summaries of the remedial actions taken to address known environmental issues at the Crissy Field RAP Area sites, petroleum sites, and historical records review sites. Appendices B and C include figures and data tables from reports as documentation of remedial actions that have been performed at Crissy Field RAP sites. Together, Tables 3-1 through 3-3 and the information in the appendices demonstrate that the requirements of the Crissy Field RAP have been substantially met for these sites within the Crissy Field RAP Area.

Task 12 of the RWQCB Order states that requests for closure certification are to include a case closure summary with confirmation sampling results to demonstrate compliance with the Order. Table 3-2 is intended to serve as the Case Closure Summary for petroleum sites addressed in the Crissy Field RAP Area. The Case Closure Summary for FDS lines is included in Table 3-1.

As shown in Tables 3-1, 3-2, 3-3, and 3-4, the available data demonstrate that the implemented remedies at the Crissy Field Area have substantially achieved the level of cleanup and protection specified in the Crissy Field RAP for all exposure pathways, including recreational and terrestrial receptors within the Crissy Field Area and aquatic receptors at the Crissy Field wetlands. As such, with the exception of groundwater monitoring in the Building 900s Area discussed in Section 6.2, no further response actions are needed to protect human health or the environment within the Crissy Field Operable Unit.

## 4. ASSESSMENT FOR UNRESTRICTED USE

The available soil data from the remedial investigation, other investigation data, and verification sampling that are representative of concentrations remaining in residual soil at the Crissy Field Area after implementation of the Crissy Field RAP were compared with the residential cleanup levels in the Presidio-wide Cleanup Level document for nonpetroleum constituents (EKI, 2002) and the Order for petroleum hydrocarbons and related constituents. A similar comparison was made for groundwater concentrations with drinking water maximum contaminant levels (“MCLs”). These cleanup levels are included as Appendix A.

This section discusses the results of the comparisons to residential land use cleanup levels and presents an assessment of unrestricted land use. Crissy Field RAP sites, petroleum sites, and historic records review sites are each discussed below. For those sites that require a land use restriction, the process to implement such restrictions is discussed in Section 6.3

### 4.1 CRISSY FIELD RAP SITES

As indicated in Table 3-1, chemical concentrations at the following list of sites are less than the residential cleanup levels, and thus were found to meet unrestricted use standards, including residential. The jurisdictional area of the site (Area A or B) is noted in parentheses.

- East of Mason (Area A);
- Fill Site 7 (Area A);
- Building 640/643 Area (Area B);
- Former Buildings 901 through 919 (former Crissy Field barracks) (Area A);
- Building 924 Firing Range (Area B);
- Building 950 Area (Area A);
- Building 979 Area (Area A);
- Fuel Distribution System Line at Crissy Field (Areas A and B);
- Removal of Tidal Marsh Storm Drains and Sediments (Area A);
- Contingency Sites:
  - Site 081898-1400 (Area A);
  - Site 092198-1030 (Area A);

- Site 121898-1400 (Area A);
- Crissy Field Hydraulic Cylinders (Area A); and
- Site 020201-1000 (Area A).

As indicated in Table 3-1, chemical concentrations at the following sites are greater than the residential cleanup levels, and thus land use restrictions prohibiting residential land use or use of groundwater for potable supply are anticipated to be required. Again, the jurisdictional area of the site (Area A or B) is noted in parentheses.

- Crissy Field Rifle Institute and Skeet Ranges (onshore) (Area A);
- Building 923/937 Area (soil) (Area B);
- Building 923/937 (Groundwater) (Areas A and B); and
- Building 979 Area (Groundwater) (Area A).

As indicated in Table 3-1, analytical data are not available for the following sites:

- Contingency Sites:
  - Possible UXO (unexploded ordnance) (Area A);
  - Small Riveted-Steel Tanks (Area A); and
  - Potential FDS Line (Area A).

Although no data are available to evaluate if a land restriction is required, assessment of these contingency sites (e.g., possible UXO, tanks, FDS line) was resolved without the need for sampling. There is no reason to believe chemicals would be present that would require a land use restriction. Therefore, no land use restrictions are applicable to these sites.

## **4.2 PETROLEUM SITES**

As indicated in Table 3-2, chemical concentrations at the following petroleum tank sites are less than the residential cleanup levels, and thus were found to meet unrestricted use standards, including residential. Again, the jurisdictional area of the site (Area A or B) is noted in parentheses.

- 933.1, 933.2, 933.3, 933.4, and 933.5 (Area A);
- 937.3 (Area A);
- 976.1 and 976.2 (Area A); and
- 979.1, 979.2, 979.3, 979.4, 979.5, 979.6, and 979.7 (Area A).

As indicated in Table 3-2, a land use restriction limiting residential land use is anticipated to be required for the following list of sites:

- 923 (Area B);
- 924.1 and 924.2 (Area B);
- 926.1, 926.2, 926.3, 926.4, and 926.5 (Area B);
- 930.1 and 930.2 (Area B);
- 931 (Area B);
- 934 (Area B); and
- 937.1, 937.2, and 937.H (Area B).

As indicated in Table 3-2, chemical concentrations measured in samples from tank sites 937.1 and 937.2 are greater than the residential cleanup levels; therefore, a land use restriction prohibiting residential use at these sites will be implemented. Although chemical data from samples collected at tank sites 930.1, 930.2, 931, 934, and 937.H are less than the applicable residential cleanup levels, these sites are located in the Building 923/937 Area where chemicals are present above residential cleanup levels. Therefore, a land use restriction prohibiting residential use at these sites will be implemented. Similarly, no chemical data specifically for tank sites 923, 924.1, 924.2, 926.1, 926.2, 926.3, 926.4, and 926.5 are available, and there is no reason to believe these sites contain chemicals above residential cleanup levels. However, these sites are also located in the Building 923/937 Area. Therefore, a land use restriction prohibiting residential use at these sites will be implemented.

In addition, in 1998, the Army backfilled the excavation at the northeastern corner of Building 937 with low temperature thermal desorption (“LTTD”) treated soil to a depth of approximately 1.5 feet bgs. The remaining portion of the excavation was filled with imported aggregate base and finished with concrete. In accordance with the Order, this area will be included in the Trust’s LTTD soil tracking program.

### **4.3 HISTORIC RECORDS REVIEW SITES**

As indicated in Table 3-3, none of the historic records review sites are considered to be an environmental concern. No further action is recommended for all of these sites. Land use restrictions are only recommended for the historical records review sites that fall within the boundaries of other areas that will have land use restrictions. These sites include former Building 675 (Crissy Field Rifle Institute and Skeet Ranges), which is located in Area A, and Former Building 922, Former Building 928, Former Old Building 942, Building 942 (Building 923/937 Area), which are located in Area B. Land use

restrictions should not be necessary at the remaining historical records review sites (Former Buildings 233, Former Building 251, Former Building 901 Area, Former Building 904, Former Building 908, Former Building 909, Former Building 938, Former Building 947/965, Former Building 974 Area, Former Building 979 Area, Former Building 981, and Former Building 982) because these sites are not believed to contain chemicals of concern above residential cleanup levels.

## **5. REQUEST FOR CONSTRUCTION COMPLETION AND SITE CLOSURE CERTIFICATION**

Table 5-1 lists the individual sites within the Crissy Field Area that the Trust is requesting the DTSC and RWQCB to certify. The Crissy Field RAP was approved by the DTSC. Section 5.16 of the Consent Agreement between the Trust, NPS, and DTSC, dated 30 August 1999, identifies the requirements for regulatory certification that a site is adequately remediated (DTSC, 1999a). Task 12 of the Order also requires a case closure summary for each site. This Completion Report is intended to provide the necessary documentation for such regulatory certification from both DTSC and RWQCB.

As shown in Section 4 and Appendix C, the data indicate that most of the sites meet residential human health cleanup levels. These sites are identified with a “Yes” in the “Unrestricted Use” column of Table 5-1. The column titled “Construction Completion” identifies the sites where remedial actions have been completed.

The three DTSC columns are certification statements from DTSC’s Official Policy/Procedure guidance for Remedial Action Certification (DTSC, 1989). The three classes of site certifications from the DTSC guidance are as follows: (1) sites where remedial actions have been implemented and no further action is required; (2) sites where after investigation or site characterization no remedial actions were required; and (3) sites where remedial actions have been implemented and ongoing monitoring is required. The Trust has marked the column in Table 5-1 that matches the Trusts understanding of the appropriate certification statement wording for each site.

In the RWQCB column, sites within RWQCB jurisdiction are identified for closure certification with no further action.

This document requests DTSC and RWQCB’s certification for unrestricted land use, including residential, for the sites within the Crissy Field Area indicated in Table 5-1. Further, as indicated in Table 5-1, the Trust is requesting that DTSC provide for each marked site a Letter of Construction Completion, as appropriate, and a Letter of Closure Certification. This Implementation Report also formally requests Closure Certification with No Further Action from the RWQCB for the sites identified in Table 5-1, consistent with Task 12 of the Order.

For the convenience of the DTSC and RWQCB, Table 5-1 has a signature line for each agency, to formally confirm these certifications after its review of this document. The Trust requests that the DTSC and RWQCB review, and, if satisfactory, sign and return a

copy of Table 5-1 to the Trust to confirm that the requested certifications listed above have been accepted by the appropriate regulatory agencies.

Remaining actions at Crissy Field sites are identified in the Section 6.

## **6. IDENTIFICATION OF FUTURE ACTIONS**

### **6.1 WAIVER OF FIVE-YEAR STATUS REPORT FOR CLOSED AND NO FURTHER ACTION SITES**

For the sites identified for closure certification and no further action in Table 5-1, the Trust requests that the requirements for a Five-Year Status Report, described in Section 5.14 of the Consent Agreement and in Task 13 of the Order, be waived. After receipt of the closure certifications, the Trust will properly decommission remaining groundwater monitoring wells in the Crissy Field Area that are not identified for further work.

The Trust will continue to perform Five-Year Reviews for the ongoing groundwater monitoring described in Section 6.2

### **6.2 FUTURE ACTIONS**

Ongoing groundwater monitoring at the Building 900s area (specifically, Building 923/937 Area and Building 979 Area) is the only necessary future action in the Crissy Field RAP Area. The RAP requires five years of monitoring to confirm that source removal was effective at reducing chemical concentrations to below the applicable saltwater aquatic standards. At this point, the Trust has completed approximately 2.5 years of monitoring.

Although groundwater monitoring has not been completed for the full five years required by the Crissy Field RAP, the data indicate that chemical concentrations are significantly less than the applicable cleanup levels to protect saltwater aquatic organisms. Moreover, COCs are not detected in groundwater samples from most of the wells. As such, the Trust recommends decreasing the groundwater monitoring frequency to annually in the five wells where an increasing trend has been observed (937GW35, 937GW102, 937GW106, 950GW108, and 979GW114) and in the associated “nested” wells (i.e., the cluster of 937GW35 and 950GW108; the cluster of 937GW101, 937GW102, and 937GW103; the cluster of 937GW106 and 937GW107; and the cluster of 979GW113 and 979GW114). The Trust also recommends ceasing the groundwater monitoring in all remaining Building 900s Area wells.

When five years of data for these four clusters has been collected (anticipated to be after the monitoring event in the summer of 2006), the Trust plans to review the groundwater data. Assuming the groundwater data continue to meet the requirements of the RAP, the

Trust will apply for closure certification for these remaining areas and destroy all the remaining groundwater monitoring wells once the closure certification is received.

### **6.3 LAND USE RESTRICTIONS**

#### **6.3.1 Introduction**

For areas that do not meet unrestricted land use requirements, land use controls will be implemented. Land use controls are appropriate for sites where remedial actions achieve the cleanup levels for the land use designation identified in the Trust's PTMP (Trust, 2002) for Area B and, for Area A the NPS' GMPA (NPS, 1994) and the NPS Crissy Field Plan (Jones & Stokes, 1996), but do not achieve the more stringent residential cleanup level. The PTMP, the GMPA, and the Crissy Field Plan effectively act as zoning ordinances for land use in the Crissy Field Operable Unit 4.

#### **6.3.2 Trust Area B Land Use Controls**

The PTMP, in conjunction with the Area B Land Use Controls Master Reference Report ("LUCMRR") and Site-specific addenda to the LUCMRR, are being used to enforce land use controls or Land Use Covenants as defined by DTSC in Area B.

Land use controls, the primary institutional control that may be used at the Presidio, will be implemented by the Trust through its planning and project review programs<sup>2</sup> and with an Area B LUCMRR. Existing and planned land uses in Area B are guided by requirements set forth in the PTMP. In effect, the PTMP is the "zoning" document that establishes the designated land uses and associated applicable cleanup levels throughout Area B. Notwithstanding the PTMP, the Trust will prepare an Area B LUCMRR that will establish protocols for the general implementation and Presidio-wide enforcement of land use controls.

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<sup>2</sup> The Trust's land use compliance process (i.e., project review programs) is a first step to insure that Trust staff are aware of known contamination in the vicinity of project sites with land use controls. The Trust's N<sub>2</sub> process is used for compliance with the National Environmental Policy Act ("NEPA"), the National Historic Preservation Act ("NHPA"), and other such regulations. Every project in Area B at the Presidio (e.g., fence post installation, tree trimming, native plant restoration, building renovation, and building demolition) is screened through the Trust's N<sub>2</sub> process. This review process can be used to alert Trust staff to known and remediated chemical release sites. In addition, for any Area B project involving excavation or subsurface work, the Trust requires a "dig permit." The Trust will also use the "dig permit" process to notify and require adherence by excavation project proponents of the LUC restrictions and requirements.

A site-specific addendum to the LUCMRR will be prepared to supplement the Area B LUCMRR<sup>3</sup>. These site-specific addenda will include a figure depicting the site location and area and will summarize the specific COCs encountered at a site, the actions taken to remediate the site, and the levels of COCs remaining at the site that required the implementation of land use controls. In addition, these site-specific addenda will discuss unallowed land uses at the site and any special requirements if residual chemicals or wastes are left in place in an inaccessible area (e.g., health and safety requirements if the area is disturbed in the future). Sites that require a site-specific addendum are identified in Table 5-1 with a “No” in the “Unrestricted Use” column.

This process will be followed as described above for sites in Area B that require a land use control.

### 6.3.3 NPS Area A Land Use Controls

Where necessary, land use controls will be implemented by the NPS in Area A through its federal government facility master plan, in accordance with 22 C.C.R. § 67391.1(e)(2) (allowing DTSC and the federal government to use other mechanisms to ensure that future land use will be compatible with the levels of hazardous substances which remain on the property). The GMPA and the Crissy Field Plan are the applicable federal facility master plans within the Area A portion of the Crissy Field Operable Unit 4. All of the remediation activities have met or exceeded the land use designations established in the GMPA and the Crissy Field Plan. The only portion of the Crissy Field Operable Unit 4 within Area A that did not achieve residential cleanup levels is the Rifle Institute and Skeet Ranges area (including associated former Building 675) along the shoreline. That area achieved the recreational cleanup standard that was established for the planned use of that area, consistent with the GMPA and the Crissy Field Plan. Compliance with the non-residential use requirement is met by the GMPA and the Crissy Field Plan. Residential use in that area is not authorized by the GMPA or the Crissy Field Plan (GMPA, pp. 88-93; Crissy Field Plan, pp. 2-2 to 2-28). These plans may not change without additional National Environmental Policy Act compliance, including public and regulatory input.

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<sup>3</sup> The Trust intends to add each site-specific addendum as an attachment to the Area B LUCMRR. As such, the LUCMRR will effectively be a “working document”, supplemented with additional information as it becomes available.

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