

**FINAL
NAVAL AIR STATION ALAMEDA RESTORATION ADVISORY BOARD
MEETING SUMMARY**

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Building 1, Suite 140, Community Conference Center
Alameda Point
Alameda, California

November 3, 2005

The following participants attended the meeting:

Co-Chairs:

Thomas Macchiarella	Base Realignment and Closure (BRAC) Program Management Office (PMO) West, BRAC Environmental Coordinator (BEC), Navy Co-chair
Jean Sweeney	Restoration Advisory Board (RAB) Community Co-chair

Attendees:

Arvind Acharya	Integrated Technical Solutions, Inc. (ITSI)
Doug Biggs	Alameda Point Collaborative Representative
Dan Carroll	Bechtel Environmental, Inc. (Bechtel)
Neil Coe	RAB
Anna-Marie Cook	U.S. Environmental Protection Agency (EPA)
Tommie Jean Damrel	Tetra Tech EM Inc. (Tetra Tech)
Michele Dermer	Bechtel
Claudia Domingo	BRAC PMO-West Remedial Project Manager (RPM)
Steve Edde	ITSI
Jamie Hamm	Sullivan International Group (Sullivan)
Judy Huang	Regional Water Quality Control Board (Water Board)
George Humphreys	RAB
Craig Hunter	Tetra Tech
Elizabeth Johnson	City of Alameda
John Kaiser	Water Board
Joan Konrad	RAB
James D. Leach	RAB
Ken Leonard	ITSI
Patrick Lynch	Community member

Frank Matarrese	Alameda City Council
John McMillan	Shaw Environmental and Infrastructure Inc. (Shaw)
Kurt Peterson	RAB
Kevin Reilly	RAB
Peter Russell	Russell Resources Inc./City of Alameda
Dale Smith	RAB/Sierra Club/Audubon Society
Cathy Stumpenhous	Bechtel
Jim Sweeney	RAB
Luann Tetirick	RAB
Michael John Torrey	RAB/Housing Authority of the City

The meeting agenda is provided in Attachment A.

MEETING SUMMARY

I. Approval of Minutes

Ms. Sweeney called the meeting to order at 6:30 p.m.

Ms. Sweeney asked for comments on the minutes from the RAB meeting held on October 6, 2005. Ms. Huang, Ms. Cook, Mr. Humphreys, Mr. Coe, and Ms. Smith provided the following comments:

Ms. Huang's comment

- Ms. Huang indicated that John Kaiser of the Water Board attended the last meeting and therefore should be added to the list of attendees for the meeting on October 6, 2005.

Ms. Cook's comments

- Page 3 of 9, second paragraph, tenth sentence will be revised to read, "EPA believes that lead and PAH contaminants in soil have similar exposure pathways, and that this document was the closest guidance that might apply to cleanup of PAH."
- Page 3 of 9, second paragraph, fifteenth sentence; "exposure" will be changed to "expose."
- Page 7 of 9, first paragraph, fourth sentence under BCT Activities, "air" will be changed to "groundwater."

Mr. Humphrey's comments

- Page 4 of 9, Section III, third paragraph; the third sentence will be revised to read, "The excavation would leave a hole in the earth that would have to be filled. If clean fill was obtained from the wildlife refuge area, it would leave a depression that might be suited for development as a wetland area. Similarly, if waste was excavated at Site 2, additional wetlands could be created."
- Page 4 of 9, last sentence of the last paragraph, will be revised to read, "Mr. Humphrey's thought that the only way to calculate a reliable cost was a remediation plan for each alternative that

would take into account the amount of contaminated materials, the type of protective gear that field crews will need, the types of tools to be used, how the material will be transported, and where the materials will be disposed of.”

- Page 5 of 9, second full paragraph, seventh sentence will be revised to read, “Mr. Humphreys replied that a wide range of cost estimates was offered during the meeting, ranging from \$20 million to \$6 or \$7 hundred million.”
- Page 7 of 9, third paragraph, second from the last sentence will be revised to read, “...to drain under the galley floor.”
- Page 8 of 9, third paragraph, eighth sentence; percentile will be added after 95th.

Mr. Coe’s comment

- Page 8 of 9, last paragraph under the Community and RAB Comment Period, first sentence will be changed to read, “Mr. Coe asked why the golf course site was not being developed and who would clean up the golf course site so that it could be developed.”

Ms. Smith’s comment

- Page 7 of 9, the word “how” will be deleted from the first sentence on the page.

The RAB approved the minutes based on incorporation of the comments and corrections listed above.

II. Co-Chair Announcements

Mr. Macchiarella distributed a list of significant Navy Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) program documents planned for November and December 2005. This handout is included as Attachment B-1.

He also mentioned that a new proposed plan (PP) for Site 26 was mailed out recently; the public meeting will be held on November 9, 2005. Additionally, the public meeting for the Site 15 PP was held recently, and the comment period is now closed. The Navy received one set of comments on the Site 15 PP by e-mail.

Ms. Smith mentioned that she has trouble obtaining copies of documents for review from Ms. Sweeney. Ms. Smith asked if she could request an additional copy of a specific report since Ms. Sweeney requested at the last RAB meeting to only receive one copy of each remediation report. Ms. Sweeney did not recall a request from Ms. Smith for reports. Mr. Peterson asked Ms. Smith if she could obtain the copies in the Alameda Point repository. Ms. Smith responded that copies are stolen from the library and never returned. Ms. Sweeney clarified that she did not need two copies of the reports for Sites 30 and 31 and it would be fine if she continued receiving two copies for all the other regulatory reports. Mr. Macchiarella was under the impression that she wanted only one copy of each document sent to her. However, he said that Ms. Smith or any other RAB member may request an individual copy of a report before it is produced and the Navy would try to accommodate the request.

III. Site 27 Draft Feasibility Study Presentation

Ms. Sweeney introduced Mr. Carroll from Bechtel to provide a presentation on the draft feasibility study (FS) for Installation Restoration (IR) Site 27, the Dock Zone. A handout was provided and is included as

Attachment B-2. Mr. Macchiarella noted that Mr. Baughman is the remedial project manager (RPM) on this site but was not able to attend the meeting because he had just returned from volunteering in New Orleans.

Mr. Carroll introduced himself and thanked the RAB for the opportunity to present the FS. Mr. Carroll said that a presentation for the remedial investigation (RI) was given to the RAB a few months ago and that the draft FS was the next step in the process. Mr. Carroll said that he would cover the background and site history, a summary of the RI, and an outline of the FS, and that he would summarize the alternatives presented in the FS and compare the alternatives.

In 1994, underground storage tanks were removed from Building 15, and Site 27 was established after solvents were detected in a monitoring well. The original size of Site 27 was 2.2 acres and surrounded the former location of the removed tanks. However, the site was expanded to 15.8 acres to encompass more of the solvent plumes. The site is primarily paved, includes buildings, and is bounded on the western side by Seaplane Lagoon. Slide 4 shows an aerial photograph of the base, with the outline of Site 27 highlighted. Slide 5 is a photograph of the northwestern corner of Site 27, facing south, and Slide 6 is a photograph of the southwestern corner of the site, facing east.

The site was part of San Francisco Bay until the 1940s. This area was filled and paved by 1945 using sheetpile bulkhead along Ferry Point Road. Using this technique, sheet piles are driven 20 to 30 feet into the ground and then the area is backfilled. The largest building on the site, Building 168, was constructed in 1946, is 110,000 square feet, and currently is used as a warehouse. The remaining open spaces at the site were used for aircraft parking, equipment and materials staging, and storage. Slide 8 shows a 1937 aerial photograph of Site 27 when it was still part of San Francisco Bay, and an adjacent 1947 photograph depicts the site developed with buildings and conditions similar to the present.

Soil is contaminated by chlorinated volatile organic compounds (VOCs) at concentrations less than preliminary remediation goals. No source of the soil contamination was identified, and no further action has been recommended for soil in the RI. Slide 10 depicts contour lines of groundwater elevations at the site and shows that groundwater flows toward San Francisco Bay. Additionally, depth to groundwater is about 5 feet below ground surface; the wells near the bay are heavily affected by tidal influence and have a high concentration of total dissolved solids (TDS). Ms. Smith was concerned with contaminant detections in the second or lower groundwater aquifer. Ms. Stumpenhaus, with Bechtel, said that there were few detected concentrations in the lower aquifer and that all were below maximum contaminant levels (MCLs). Mr. Carroll pointed out the orange line on the slide that runs under Ferry Point Road. This orange line represents the approximate location of the sheetpile bulkhead. Mr. Carroll hypothesized that the bulkhead is affecting groundwater and contaminant flow.

Slide 11 illustrates a plume of total chlorinated VOCs in groundwater underneath Site 27. The concentrations plotted are the highest detected contaminant levels from the years 2002 through 2004 and do not represent a single all-inclusive sampling event. The highest concentrations are shaded in pink in two separate areas that are considered the source in the FS. However, Mr. Carroll noted that these areas might not have been the exact locations of the sources. Additionally, he pointed out that concentrations in groundwater are significantly reduced after the bulkhead. Mr. Peterson inquired whether Building 168 was the source area. Mr. Carroll noted that there are no records of historical spills on the property but the report concludes that Building 168 or its staging area could be sources. Mr. Humphreys asked if the Older Bay Mud was beneath this site. Mr. Carroll responded that the Merritt Sand formation but no Older Bay Mud is encountered. An aquifer in the Merritt Sand formation is suitable for drinking water; therefore, this site will be cleaned up to drinking water standards. Ms. Stumpenhaus also said that New

Bay Mud was not encountered during drilling and that Older Bay Mud would be located beneath the Merritt Sand layer.

Ms. Smith asked if indoor air had been sampled within Building 168. Mr. Carroll replied that soil gas had been sampled on the property and that calculations based on the data collected did not indicate a significant risk for indoor air intrusion in Building 168. The vapor intrusion pathway was evaluated in the RI and was determined not to be a significant risk for workers at the site. The risk assessment concluded that cancer risk values exceeded the risk management range for two exposure pathways when domestic use of groundwater is assumed. The two exposure pathways are ingestion and dermal contact while showering. The FS concluded that there is no ecological risk at the site.

The FS describes the current and future site uses, general response objectives, assumptions, alternatives, and a comparison of the alternatives. The current use of the site includes warehousing, storage, and roadways. The planned future use of the site is for a marina and inner harbor with commercial, light industrial, residential, and recreational. The general response objectives include protecting the beneficial uses of groundwater, protecting the beneficial uses of surface water (Seaplane Lagoon), and preventing domestic use of groundwater. Slide 16 depicts the area west of the bulkhead along the shoreline that has been designated as Class III groundwater, which is not suitable for drinking water. The remaining portions of the site, including the two source areas, are classified as Class II, which is considered suitable for use as drinking water.

Slide 17 and 18 depict the remedial alternatives evaluated during the FS. When an alternative is divided into a sub-part A and B, sub-part A refers to source treatment, while sub-part B refers to site-wide treatment. Alternative 1 is listed as the mandatory no-action alternative, which must be evaluated. Alternative 2 would consist only of institutional controls (ICs), which would prohibit groundwater extraction and would be a temporary solution until response action objectives are reached. ICs are also included where monitored natural attenuation (MNA) is recommended to ensure that the public is not exposed to groundwater while it is undergoing MNA. Alternative 3 includes ICs and MNA. VOC concentrations across the site have generally been decreasing over time; however, the rate of MNA varies across the site. Slide 21 depicts groundwater plumes for vinyl chloride across the site. Slide 22 depicts VOC concentrations at monitoring well 27MW06, located in the source area near Building 168. Slide 23 depicts VOC concentrations at monitoring well 15-MW1 from 1995 through 2004. The graph shows a decreasing trend of cis-1,2-dichloroethene that is degrading into vinyl chloride, consequently the vinyl chloride is trending upward on the graph as cis-1,2-dichloroethene degrades. Ms. Cook pointed out that treatment of the vinyl chloride will need an additive to facilitate biodegradation. Ms. Smith questioned whether vinyl chloride is migrating into Seaplane Lagoon and its impact on benthic species. She said that other consultants have told the RAB that benthic species in Seaplane Lagoon are not being affected, and she does not understand how these species would not be impaired if vinyl chloride is migrating into the lagoon. Ms. Stumpenhaus said that there are no studies or criteria that can be used to compare the impact of vinyl chloride on aquatic receptors. Mr. Carroll said that the cleanup goals for the shoreline are driven by the ecological risk values, which are much higher than the concentrations at the site. Ms. Smith said that a benthic species immersed in a VOC would die, so she does not understand how vinyl chloride cannot be an ecological risk.

Alternative 4A involves in situ biodegradation source area treatment using molasses, corn syrup, butane sparging, or hydrogen release compound (HRC), and implementation of MNA and ICs. Alternative 4B, which involves these same processes over a site-wide scenario, has been screened out because it would not be effective. Alternative 5 — which involves air sparging, source area treatment, MNA and ICs — was also screened out because it might increase the risk that solvent vapors would be released into the atmosphere and possibly affect the public or environment. Alternative 6A involves in situ chemical

oxidation (ISCO) source area treatment, MNA, and ICs. This alternative is a source area treatment strategy, which is also currently being used at Site 9. Alternative 6B would be site-wide implementation of ISCO and groundwater confirmation sampling. Alternative 6B was the only site-wide alternative that passed the screening process. It is estimated that cleanup goals would be reached in 2 years, and 570 direct-push injection points would be advanced.

Alternative 7 would employ a relatively new technology of dynamic subsurface circulation and ICs. Dynamic subsurface circulation combines in-well stripping and sparging as well as soil vapor extraction. The radius of influence for each well is 50 to 100 feet; this method has been shown to be effective in permeable, uniform soils. Slide 28 depicts a dynamic circulation well and the processes that occur in the well to remove VOCs. Alternative 8 would involve source area treatment using zero-valent iron, MNA, and IC; however, this option was screened out because of the shallow groundwater levels at the site.

Slide 29 depicts a National Contingency Plan (NCP) comparison of the alternatives that evaluates each viable alternative against the criteria of long-term effectiveness and permanence; reduction of toxicity, mobility, and volume; short-term effectiveness; implementability, and cost. Slide 30 depicts the cost and duration of treatment for each of the alternatives. Mr. Carroll finished his presentation by discussing the schedule for the FS. Public and agency comments are due by December 23, 2005; the draft final FS will be issued on February 21, 2006, and followed by the final feasibility study on March 23, 2006.

Mr. Matarrese questioned how much of the costs for each alternative is represented by sampling. Mr. Carroll said that there is an approximate \$850,000 difference in a comparison between Alternative 2 (ICs) to Alternative 3 (MNA and ICs). Ms. Cook said that Alternative 2 should be screened out because it does not meet the threshold criteria for the MCLs. Ms. Smith said that the RAB is more interested in accurate financial data and wants to hold Bechtel accountable for the estimates in the FS. Additionally, she said that the Audubon Society and Sierra Club will have an issue with contaminants migrating into Seaplane Lagoon. Mr. Humphreys noted that at Site 25, the Coast Guard housing, consultants for the Navy used chemical oxidation but did not account for the naturally occurring organic compounds in the soil and so more reagents than was assumed in the cost estimates were injected.

IV. Basewide Groundwater Monitoring Report Presentation

Ms. Domingo introduced Mr. Acharya and Mr. Leonard, both of ITSI, to provide a presentation on the basewide groundwater monitoring report. Mr. Acharya said that the purpose of the basewide groundwater monitoring program is to provide analytical data that are used in conjunction with other information generated by ongoing site investigations and RIs to better define the nature and extent of contamination in groundwater. The objective of the report is to inventory, assess, and evaluate the adequacy of the existing basewide monitoring well network. The 2005 annual groundwater monitoring report included information from groundwater monitoring events performed in 2002 (summer, fall, and winter), 2003 (spring, summer, fall, and winter), 2004 (spring, summer, fall, and winter) and 2005 (spring and summer). The Groundwater Monitoring Frequency and Analyte Reduction Decision Process Manual guide each new round of data collection.

The annual report contains background information on geology, hydrogeology, and tidal influence. The report also summarizes the 2004 through 2005 groundwater monitoring field activities and site-specific information (broken down by site), which includes groundwater flow direction and gradient, contaminant distribution, a comparison of current data with historical data, trends in groundwater elevation data, trends in contaminant concentrations, and conclusions and recommendations for each site. The report also includes a basewide groundwater well location map. Slides 6 through 10 provide examples of site-specific information for Site 2 and include a site and well location map (Slide 6), analytical results that

show the wells on the left side and the analytes across the top (Slide 7 and 8), the distribution of aromatic hydrocarbons in the first water bearing zone (Slide 9), and aromatic hydrocarbons over time at selected wells (Slide 10). Shading on the analytical result tables indicates values above MCLs in yellow and blue shading shows concentrations above the ambient water quality criteria (AWQC). Values that are above both MCLs and AWQC are depicted in pink.

Mr. Peterson asked about the location of the definition of the first water bearing zone on the table presented. Mr. Leonard replied that the first water bearing zone is defined in the footnote to the table and that both the first and second water bearing zones are depicted on the tables in the report. Additionally, the first water bearing zones ranges from 3 to 5 feet below ground surface, depending on the site. Mr. Biggs asked why data more recent than 2004 were not available for some sampling locations. Mr. Leonard replied that not every well is sampled quarterly. Some are sampled semi-annually, depending on previous results from that well. Mr. Humphreys said that trends in contaminant concentrations are opposite of the levels expected. Mr. Leonard replied that seasonal variation trends are not predictable for a basewide analysis. Ms. Sweeney noted that at certain wells natural attenuation does not seem to be operating, and Mr. Leonard agreed, but also noted that the lack of natural attenuation may not be the case site-wide. Ms. Sweeney said that she remembers a sampling event where three sites in the spring of 2002 exhibited high levels of aluminum. Mr. Leonard replied that about 10 samples contained high levels of aluminum in the summer 2002 sampling event; however, all subsequent rounds of sampling did not show these same high levels of aluminum. After these data had been evaluated, Mr. Leonard concluded that the data were suspect. However, ITSI was not in charge of groundwater sampling at that time. Ms. Sweeney asked about benzene in the Site 3 area. Mr. Leonard said that this plume is described in the current 2005 annual groundwater monitoring report. Ms. Cook said that ITSI began preparing the annual groundwater report in 2004 and 2005 and that previous benzene plumes at this site might have been omitted by the prior consultant.

V. BCT Activities

Ms. Huang said that the BRAC Cleanup Team (BCT) has meet twice since the last RAB meeting: the monthly BCT meeting, and the public meeting for Site 15 PP. However, there were no public participants who attended the Site 15 public meeting. The BCT meeting focused on how to calculate background values for Alameda Point. The BCT reviewed the methodology because there was some discontinuity within the data set used to calculate the background values. The result of the discussion will be a flow chart or summary of the process for deriving background values, which will be prepared by the Navy and will allow the agencies to comment on this summary after it has been emailed to the regulatory agencies. Ms. Cook added that, the BCT discussed how risk assessments are being completed given the lack of any background concentration values for the last year. The risk assessments are calculated so that all chemicals are carried through the risk assessment process rather than screening out chemicals attributed to background concentrations. Additionally, the EPA program Pro-UCL is used to calculate the 95th percent upper confidence limit (UCL), which serves as the exposure point concentration (EPC) in the human health risk assessment. The meeting concluded that additional evaluation of the background data set is needed, although the background data values are not used much in the RI reports.

VI. RAB Community Co-Chair Nominations

Mr. Macchiarella said that one purpose of this meeting was to obtain a list of prospective RAB community co-chairs. Ms. Smith nominated Mr. Humphreys, and Mr. Torrey seconded. Ms. Smith also nominated Mr. Coe, who declined the nomination for health reasons. There were no other nominations, and it was decided that the vice community co-chair would be decided during the December meeting.

Mr. Humphreys said that he did not want all of the documents that are commonly provided to the community co-chair and suggested that they be sent directly to the library. Ms. Smith noted that it was important that the documents went to the RAB co-chair because they are not always in the library and documents are not allowed to be removed from the library. Ms. Hamm clarified that a check-out book is located in the repository.

VII. Community and RAB Comment Period

Mr. Lynch said that the document checkout procedure could be resolved by providing the documents on line, similar to the practice at the Concord Naval Weapons Station. He also commented that the Marsh Crust which still must undergo a 5-year review under the CERCLA process would raise several serious issues with the remedy selected at this site. He said that the clean fill cap is contaminated with the same polyaromatic hydrocarbon (PAH) contamination as the underlying Marsh Crust. He would like additional investigation into the surface soils to study whether the contaminated Marsh Crust is contaminating surface soil. He also said that the FS presentation showed that alternatives for Site 27 indicate that 40 years would be required to clean up the site; he therefore suggested that the more expensive alternatives should be used to clean sites up more quickly.

Mr. Matarrese agreed with Mr. Lynch's statement about the time required to clean up sites and suggested the RAB log a formal opinion on the alternative they would prefer as members of the community. He wants the RAB to take a formal position on the RI alternatives and the timetable that accompanies them. He would rather see the contamination on Site 27 cleaned up in 2 years rather than 70 years.

Ms. Sweeney asked if there is a motion for the RAB members to vote regarding cleanup timetables. Mr. Macchiarella said that the comment period on the Site 27 FS is still open; he added that the Navy is willing to assemble a focus group that would address the concerns of the RAB members. Ms. Smith proposed a private meeting with Mr. Matarrese and other RAB members after the meeting without involvement by the regulators or the Navy so that they can draft formal comments to the Navy. She said that documentation in the minutes does not mean that the Navy will address their concerns. She has felt that the RAB is forced to defer to the Navy more than she would like, which she attributes to lack of support from the regulators.

Ms. Sweeney noted there is a concerns that letters from focus group meetings, which are included in the administrative record for Alameda Point; do not have an impact on the Navy's decision for individual sites. Mr. Torrey questioned when and if comments presented by the RAB would be addressed or implemented by the Navy. Ms. Smith said that the Navy is not required to implement RAB concerns or decisions. Mr. Macchiarella said in response to Mr. Torrey's comment that the Navy usually prepares response to comments tables or discusses the responses at RAB meetings. Mr. Macchiarella added that unified comments from a motion at a RAB meeting are rare, and that he would encourage a formal vote or stance from the RAB on their position.

Mr. Coe made a motion in agreement with Mr. Mataresse's previous statement that it would be better to clean up sites on a shorter schedule. Ms. Konrad seconded this motion. Mr. Humphreys called for the question. Ms. Smith said that the RAB could discuss the issue before the question is called. Mr. Humphreys commented that the present value estimates use a 6 percent interest rate, which he believes is too high because this represents the differences between investment rates and the rates of cost escalation. He continued that the present value of future costs become insignificant after 30 years. Mr. Humphreys agreed in favor of voting for the short-term solution. Ms. Sweeney called for a vote; all RAB members were in favor, with none opposed or abstaining. Mr. Macchiarella pointed out to Ms. Sweeney that it appeared to him that the motion was not clear. He thought that some members thought the vote

was related to Site 27 while others thought it was relative to the entire facility. The co-chairs agreed to clarify this issue at the next meeting. [Please refer to the December 1, 2005 RAB meeting minutes for clarification on this motion.]

There were no further comments, and the meeting was adjourned at 8:40 p.m.

ATTACHMENT A

**NAVAL AIR STATION ALAMEDA
RESTORATION ADVISORY BOARD MEETING AGENDA
November 3, 2005**

(One Page)

RESTORATION ADVISORY BOARD

NAVAL AIR STATION, ALAMEDA

AGENDA

NOVEMBER 3, 2005, 6:30 PM

ALAMEDA POINT – BUILDING 1 – SUITE 140

COMMUNITY CONFERENCE ROOM

(FROM PARKING LOT ON W MIDWAY AVE, ENTER THROUGH MIDDLE WING)

<u>TIME</u>	<u>SUBJECT</u>	<u>PRESENTER</u>
6:30 - 6:45	Approval of Minutes	Ms. Jean Sweeney
6:45 - 7:00	Co-Chair Announcements	Co-Chairs
7:00 – 7:30	Site 27 Draft Feasibility Study Presentation	Mr. Dan Carroll (Bechtel)
7:30 – 7:55	Basewide Groundwater Monitoring Report Presentation	Ms. Claudia Domingo & Innovative Technical Solutions, Inc. (ITSI)
7:55 – 8:05	BCT Activities	Ms. Marcia Liao
8:05 – 8:15	RAB Community Co-Chair Nominations in preparation for December's Vote	Mr. Thomas Macchiarella
8:15 – 8:30	Community & RAB Comment Period	Community & RAB
8:30	RAB Meeting Adjournment	

ATTACHMENT B

NAVAL AIR STATION ALAMEDA RESTORATION ADVISORY BOARD MEETING HANDOUT MATERIALS

- B-1 List of significant Navy CERCLA program documents for November/December 2005, presented by Thomas Macchiarella, BRAC PMO-West. November 3, 2005. (1 page)
- B-2 Draft Feasibility Study for IR Site 27, Dock Zone, presented by Dan Carroll, Bechtel. November 3, 2005. (16 pages)
- B-3 Basewide Groundwater Monitoring Report, presented by Arvind Acharya and Ken Leonard (ITSI). November 3, 2005. (6 pages)

ATTACHMENT B-1
LIST OF SIGNIFICANT NAVY CERCLA PROGRAM DOCUMENTS FOR
NOVEMBER/DECEMBER 2005

(One page)

**Alameda Point Restoration Advisory Board Meeting
November 3, 2005**

*Significant Navy CERCLA program documents planned for
November/December 2005*

- Site 35 (West Housing Area) Draft-Final Remedial Investigation Work Plan
- Site 1 (1943 – 1956 Disposal Area) Draft-Final Feasibility Study Report
- Site 2 (West Beach Landfill) Draft Remedial Investigation Report
- Site 34 (Former Northwest Shop Area) Final Workplan
- ECD 3 Draft Final Site Inspection Report
- PBC 1A Draft Final Site Inspection Report

ATTACHMENT B-2
DRAFT FEASIBILITY STUDY PRESENTATION FOR SITE 27
(Sixteen Pages)



Draft Feasibility Study for IR Site 27, Dock Zone Alameda Point

Restoration Advisory Board Meeting
November 3, 2005



Agenda

- Background and site history
- Remedial investigation summary
- Feasibility study outline
- Summary of alternatives
- Comparison of alternatives



ALAMEDA POINT

BRAC
PMO WEST

Location

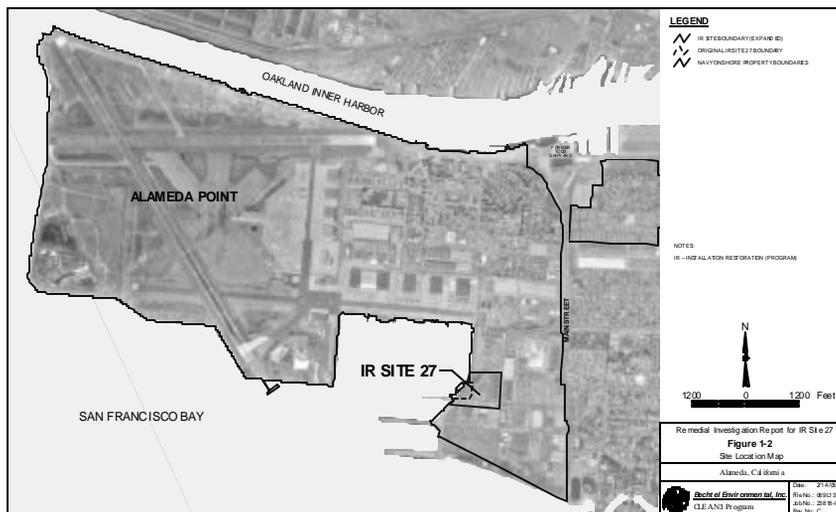
- Underground tanks removed at Building 15 in 1994
- IR Site 27 established after solvents detected in monitoring well
- Original size 2.2 acres at former location of removed tanks
- Expanded Site 27 size: 15.8 acres
- Bounded by Seaplane Lagoon to west
- Primarily paved (>75%) with buildings, structures, and storage

3



ALAMEDA POINT

BRAC
PMO WEST



4



ALAMEDA POINT

BRAC
PMO WEST

Near NW corner of Site 27, Facing South



5



ALAMEDA POINT

BRAC
PMO WEST

SW Corner of Site 27, Facing East



6



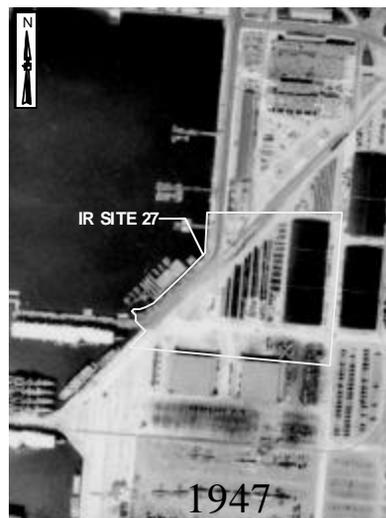
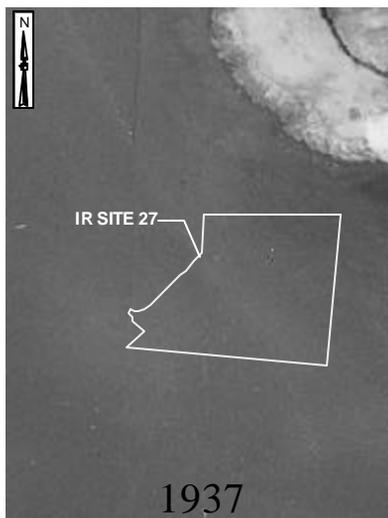
Site History

- Part of San Francisco Bay prior to 1940s
- Filled and paved by 1945
- Sheet pile bulkhead along Ferry Point Road
- Building 168 constructed in 1946; 110,000 sq.ft. warehouse currently in use
- Open space historically used by Navy for aircraft parking, equipment and materials staging and storage
- Open space currently used by tenants for equipment and materials staging and storage

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Historical Aerial Photos



8



ALAMEDA POINT

BRAC
PMO WEST

Nature and Extent - Soil

- Chlorinated volatile organic compounds (VOCs): concentrations less than preliminary remediation goals, no source identified
- No further action recommended for soil in remedial investigation

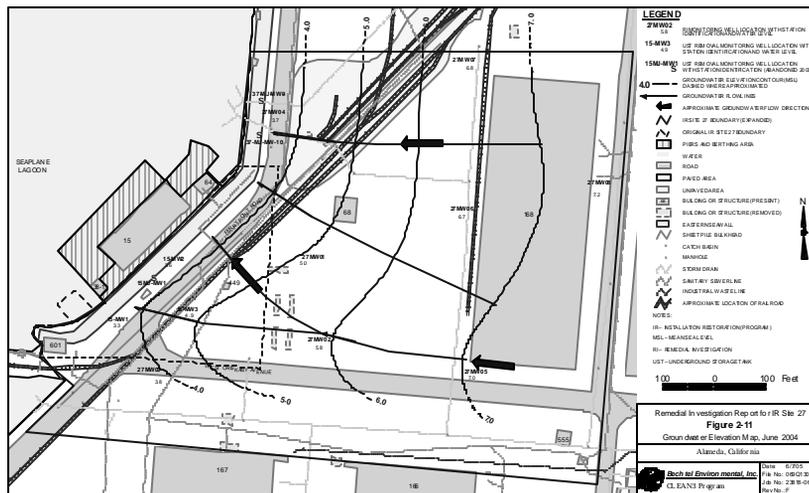
9



ALAMEDA POINT

BRAC
PMO WEST

Groundwater Elevation - FWBZ



10



FS Outline

- Current and future site uses
- General response objectives
- FS assumptions
- Alternatives
- Comparison of alternatives



Current and Future Site Uses

- Warehousing and storage
- Roadways
- Planned future use – marina and inner harbor with commercial, light industrial, residential, and recreational



ALAMEDA POINT

BRAC
PMO WEST

General Response Objectives

- Protect beneficial uses of groundwater
- Protect beneficial uses of surface water (Seaplane Lagoon)
- Prevent domestic use of groundwater

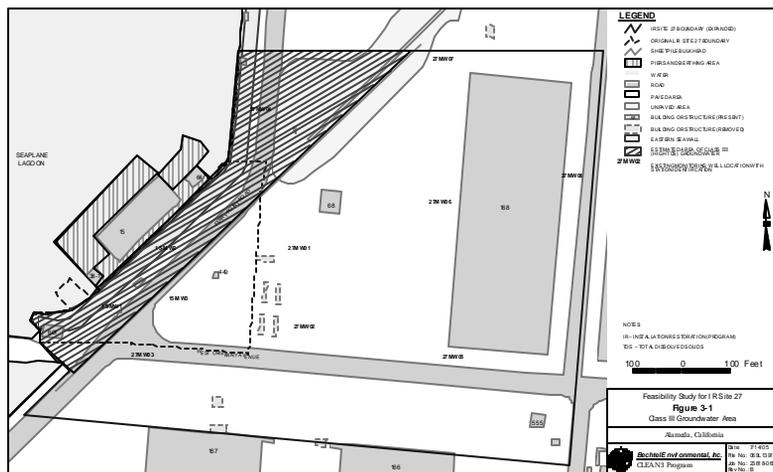
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ALAMEDA POINT

BRAC
PMO WEST

Class II and III Groundwater Areas



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FS Alternatives

- 1 No Action
- 2 ICs only
 - protect our groundwater wells & remedial systems
 - allow continued access for the Navy and regulatory agencies
- 3 MNA and ICs
- 4A ISB Source Area Treatment, MNA and ICs
- 4B Sitewide ISB, MNA and ICs (screened out)

ICs – institutional controls

MNA – monitored natural attenuation

ISB – *in situ* bioremediation

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FS Alternatives

- 5 Air Sparging Source Area Treatment, MNA and ICs (screened out)
- 6A ISCO Source Area Treatment, MNA and ICs
- 6B Site-wide ISCO and Groundwater Confirmation Sampling
- 7 Dynamic Circulation Source Area Treatment, MNA and ICs
- 8 ZVI Source Area Treatment, MNA and ICs (screened out)

ISCO – *in situ* chemical oxidation

ZVI – zero-valent iron

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Alt. 2 – ICs

- Would prohibit groundwater extraction
- Temporary until response action objectives are reached
- Included with all MNA alternatives

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Alt. 3 – MNA and ICs

- VOC concentrations decreasing
- Rate of MNA varies across site (2002-2004)
 - 50% VOC reduction at 27MW06 (near Bldg. 168)
 - Little VOC reduction at 15MW03 (east of Ferry Point Road)
 - 90% VOC reduction at 15MW01 (near shoreline)
- BIOCHLOR model used to predict endpoint
- Enhancements and source area treatments

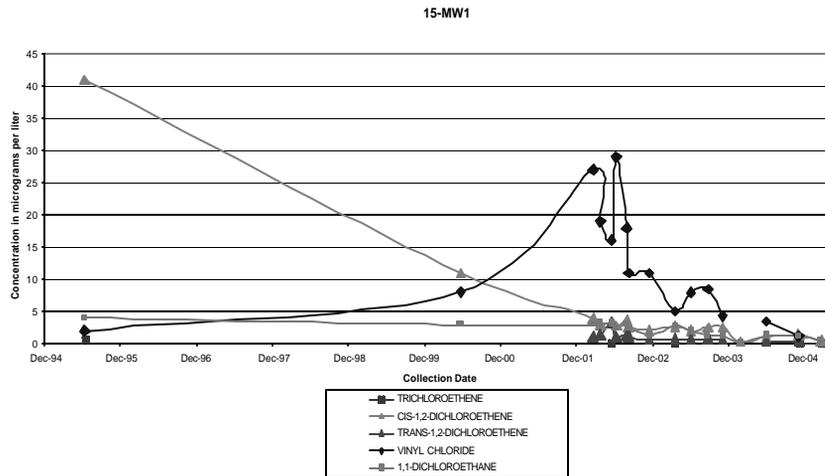
20



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VOC Concentrations at 15-MW1 (Shoreline)



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Alt. 4A – ISB Source Area Treatment, MNA and ICs

- Molasses
- Corn syrup
- Butane sparging
- Hydrogen release compound (HRC)
- Select HRC as representative process option for FS purposes



Alt. 6A - ISCO Source Area Treatment, MNA and ICs

- Source area treatment strategy
- Chemical oxidation process
- Modified Fenton's reaction
- Dilute hydrogen peroxide injection
- After peroxide, iron catalyst injected
- Used at neighboring IR Site 9 successfully

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Alt. 6B – Sitewide ISCO and Groundwater Confirmation Sampling

- Expansion of Alternative 6A
- Only site-wide alternative evaluated
- Estimate completion within 2 years
- Up to 570 direct-push injection points

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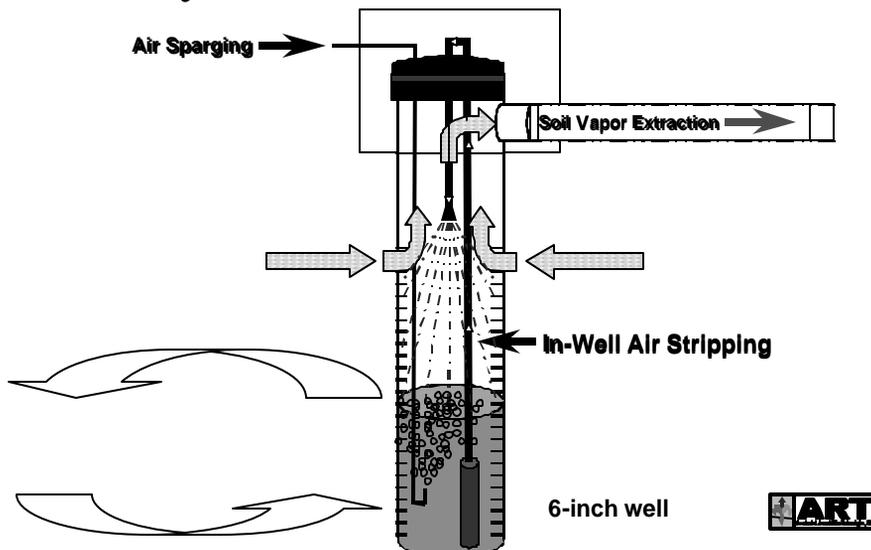
Alt. 7 - Dynamic Subsurface Circulation and ICs

- Proprietary well design
- Source area treatment strategy
- Combines in-well stripping and sparging
- Soil vapor extraction
- Radius of influence typically 50 to 100 feet
- Suitable in permeable, uniform soils

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Dynamic Circulation Well





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**National Contingency Plan (NCP)
Comparison of Alternatives**

Alt. #	Long-Term effective. and permanence	Red. of tox, mobility, volume	Short-term effectiveness	Implement-ability	Cost
2 (ICs)	medium	low	high	medium	low
3 (MNA and ICs)	medium	low	high	high	medium
4A (ISB, MNA, ICs)	high	medium	medium	high	high
6A (ISCO, MNA, ICs)	high	medium	medium	high	medium
6B (Site-wide ISCO)	high	high	medium	low	high
7 (Dynamic circulation)	medium	medium	low	medium	high



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Alternative Costs and Duration

Alternative	Comparative NPV Cost	Duration
2 (ICs)	\$554,000	70 years
3 (MNA and ICs)	\$1,407,000	70 years
4A (ISB, MNA, ICs)	\$1,962,000	60 years
6A (ISCO, MNA, ICs)	\$1,532,000	45 years
6B (Site-wide ISCO)	\$2,026,000	2 years
7 (Dynamic circulation)	\$2,082,000	55 years

NPV – Net Present Value



What's Next ?

- Draft for Agency/Public review – 10/24/05
- Agency/Public comments due 12/23/05
- Draft Final Feasibility Study – 2/21/06
- Final Feasibility Study – 3/23/06

ATTACHMENT B-3
BASEWIDE GROUNDWATER MONITORING REPORT PRESENTATION
(Six Pages)



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ALAMEDA POINT BASEWIDE GROUNDWATER MONITORING PROGRAM

November 3, 2005



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Purpose and Objectives of the Basewide GW Monitoring Program

- Provides analytical data to be used in conjunction with other information generated by ongoing Site Investigations/Remedial Actions to define the nature and extent of contamination in groundwater
- Designed to inventory, assess and evaluate the adequacy of the existing basewide monitoring well network



GW Monitoring Events Included in the 2005 Annual Report

- **GW Monitoring Events:**
 - *2002 (Summer, Fall, Winter)*
 - *2003 (Spring, Summer, Fall, Winter)*
 - *2004 (Spring, Summer, Fall/Winter)*
 - *2005 (Spring, Summer)*
- **The Groundwater Monitoring Frequency and Analyte Reduction Decision Process guides each new round of data collection**



2005 Annual Report Organization

- **Site Background Information on Geology, Hydrogeology, Tidal Influence**
- **Summary of 2004-2005 Monitoring Field Activities**
- **Site-specific Information (by IR Site) including:**
 - *GW Flow Direction and Gradient*
 - *GW Contaminant Distribution*
 - *Comparison of Current data with Historic chemical data*
 - *Trends in GW Elevation data*
 - *Trends in GW Contaminant Concentrations*
 - *Conclusions and Recommendations*



- Basewide GW Well Location Map



Site-Specific Information for IR Site 2





Table 4-3 Groundwater Sample Analytical Results at IR Site 2: Total Petroleum Hydrocarbons and Volatile Organic Compounds Summer 2002 through Spring 2005

Table with columns for Well Number, Event, Analyte, and Concentration. Includes sub-headers for TPH and Volatile Organic Compounds. Data rows include MW1A, MW1B, MW1C, MW1D, MW1E, MW1F, MW1G, MW1H, MW1I, MW1J, MW1K, MW1L, MW1M, MW1N, MW1O, MW1P, MW1Q, MW1R, MW1S, MW1T, MW1U, MW1V, MW1W, MW1X, MW1Y, MW1Z.

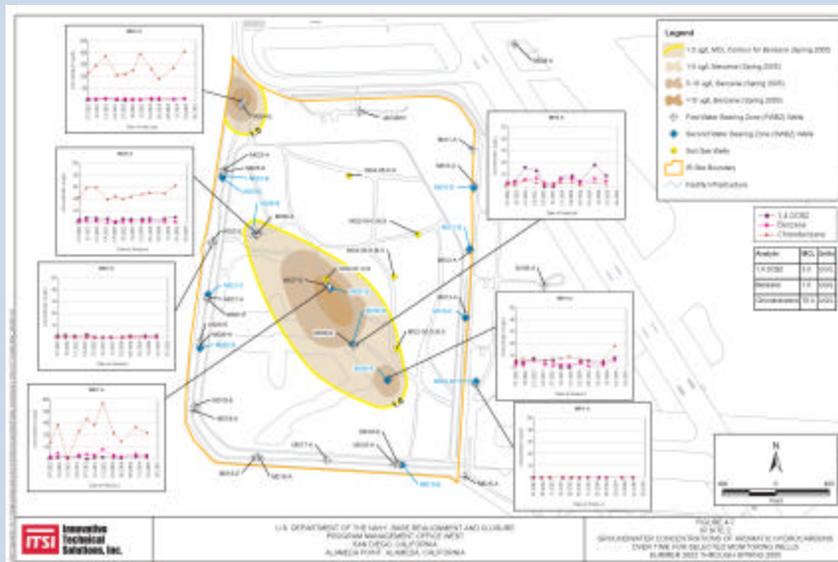
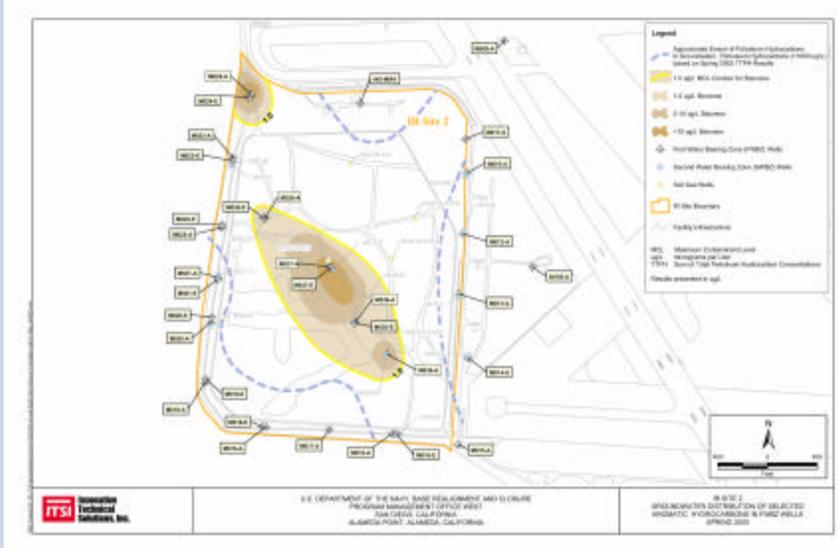
Legend: Result exceeds Maximum Contaminant Level (MCL), Result exceeds Ambient Water Quality Criteria (AWQC), Result exceeds both MCL and AWQC, Bold Text: Detected analyte.



Table 4-4 Groundwater Sample Analytical Results at IR Site 2: Dissolved Metals Summer 2002 through Spring 2005

Table with columns for Well Number, Event, Analyte, and Concentration. Includes sub-headers for Metals of Potential Concern and Common Rock-forming Elements. Data rows include MW1A, MW1B, MW1C, MW1D, MW1E, MW1F, MW1G, MW1H, MW1I, MW1J, MW1K, MW1L, MW1M, MW1N, MW1O, MW1P, MW1Q, MW1R, MW1S, MW1T, MW1U, MW1V, MW1W, MW1X, MW1Y, MW1Z.

Legend: Result exceeds Maximum Contaminant Level (MCL), Result exceeds Ambient Water Quality Criteria (AWQC), Result exceeds both MCL and AWQC, Bold Text: Result exceeds background value (BV).





Questions and Answers

