TETRA TECH EM INC.

July 18, 2006

Dear RAB Members,

On behalf of the Navy, enclosed please find the June 7, 2006 final RAB meeting minutes for your information and records.

If there are any questions regarding the enclosed minutes, please contact Carolyn Hunter at (415) 222-8297 or Carolyn.hunter@ttemi.com.

Sincerely,

Carolyn Hunter
Community Relations Specialist
Tetra Tech EMI

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Tel 415.543.4880 Fax 415.543.5480
www.ttemi.com

FINAL

MEETING MINUTES
RESTORATION ADVISORY BOARD
NAVAL WEAPONS STATION SEAL BEACH DETACHMENT CONCORD
CONCORD, CALIFORNIA
JUNE 7, 2006

These minutes reflect general issues raised, agreements reached, and action items identified at the Restoration Advisory Board (RAB) meeting for Naval Weapons Station Seal Beach Detachment Concord (NAVWPNSTA Seal Beach Det Concord), California. The meeting was held from 6:30 p.m. to 8:30 p.m. on June 7, 2006, at the City of Concord Police Department Community Room in Concord, California. Agreements and action items are described by topic under Sections I through VII and are summarized in Section VIII. A list of participants and their affiliations is included as Attachment A, and the meeting agenda is included as Attachment B.

I. WELCOME, INTRODUCTIONS, PUBLIC COMMENT, AND AGENDA APPROVAL

Welcome and Introductions

The RAB Community Co-Chair, Mary Lou Williams (Concord resident) called the RAB meeting to order and initiated a round of introductions for attendees.

John Montagh (City of Concord) announced that Ric Notini will be taking over his position at the City of Concord. Mr. Notini will now be attending the RAB on a regular basis as the City of Concord representative.

Rick Weissenborn (U.S. Navy Project Management Office West Base Realignment and Closure [BRAC] Environmental Coordinator [BEC]) introduced himself and stated that he will be the BEC for the NAVWPNSTA Seal Beach Det Concord Inland Area.

Public Comments

Ms. Williams opened the floor to public comments. Beth Byrne (Concord resident) stated that she attended the City of Concord reuse community outreach fair in May 2006. Ms. Byrne was happy to see many Concord residents in attendance at the community outreach fair.

July 2006 RAB Agenda Approval

Kim Jacobsen (U.S. Navy [Navy] RAB Co-chair) reviewed the proposed agenda for the RAB meeting on July 5, 2006. The Navy plans to provide three presentations for the June 2006 RAB meeting which include:

- Litigation Area Year 1 Monitoring Tech Memo
- Solid Waste Management Units 2, 5, 7, and 18 Treatability Study Work plan
- Update on Sites 2, 9, and 11

Ms. Jacobsen asked the RAB to approve the July 2006 agenda. The RAB approved the agenda.

II. MARCH, APRIL, AND MAY 2006 RAB MEETING MINUTES APPROVAL

Ms. Jacobsen asked the RAB for comments on the minutes from the meetings held on March 1, 2006, April 5, 2006 and May 3, 2006. The RAB voted to approve all three sets of meeting minutes.

Action Item

1. The Navy will finalize and distribute the March 1, 2006, April 5, 2006 and May 3, 2006 RAB meeting minutes.

III. COMMITTEE REPORTS AND ANNOUNCEMENTS

Ms. Williams opened the floor for committee reports and announcements. Ms. Williams distributed RAB applications that were submitted by two interested community members. Ms. Williams introduced the two candidates and requested that they provide a brief update on their background and why they are interested in joining the RAB.

Cindy Welles (Clyde resident) has been a resident of Clyde, California for the past 30 years. Ms. Welles is interested in learning more about the water from the base flowing into the Mount Diablo/Seal Creek.

On behalf of Scott McConnell (Clyde resident), Ms. Welles provided a brief background on him as he was unable to attend the RAB meeting. Mr. McConnell has been a resident of Clyde, California for the past 18 years. Mr. McConnell is interested in receiving more information on Mount Diablo/Seal Creek and how the facility impacts creek cleanup efforts.

The RAB members took a vote on the two new RAB applicants during the break of the meeting and voted to approve both applicants. Ms. Williams welcomed Ms. Welles and Mr. McConnell onto the RAB.

IV. REMEDIAL PROJECT MANAGER (RPM) UPDATE

Navy Update
Ms. Jacobsen reviewed the Navy RPM update (Attachment C).

Environmental Protection Agency (EPA) Update
Phillip Ramsey (EPA) reviewed the EPA RPM update (Attachment C).

Mr. Ramsey stated that EPA received the Final Remedial Action Work Plan and Design documents for the Tidal Area Site 1 Landfill. EPA provided a letter to the Navy confirming that the proposed Tidal Area Site 1 Landfill design change significance as minor. EPA's letter discussing the proposed design change as minor will be added to the NAVWPNSTA Seal Beach Det Concord Administrative Record.

Mr. Ramsey stated that EPA attended a meeting with managers from the Navy, Department of Toxic Substances Control (DTSC), San Francisco Bay Regional Water Quality Control Board (Water Board), and City of Concord to begin communication on the NAVWPNSTA Seal Beach Det Concord Inland Area transfer and reuse on May 19, 2006.

Mr. Ramsey stated that EPA attended a Site 29 scoping meeting for the soil and groundwater remedial investigation on May 31, 2006.

Water Board Update
Alan Friedman (Water Board) attended the RPM meeting discussing the NAVWPNSTA Seal Beach Det Concord underground storage tank (UST) program on May 4, 2006. Currently the Water Board is recommending 4 UST closures. Mr. Friedman will be issuing a letter to the Navy recommending the 4 tank closures.

Mr. Friedman attended the managers meeting with the City of Concord discussing the transfer and reuse of the NAVWPNSTA Seal Beach Det Concord Inland Area on May 19, 2006.

Mr. Friedman attended the Site 29 scoping meeting for the soil and groundwater remedial investigation on May 31, 2006. The RPMs discussed the metal contamination of the groundwater and soil in the Site 29 septic tank system.

Mr. Friedman attended the monthly RPM meeting on June 7, 2006. The RPMs discussed the Draft Final Supplemental FS for the Litigation Area Sites.

Jessica Hamburger (Contra Costa Resource Conservancy Department) asked for an update on what was discussed during the May 19, 2006 managers meeting. Mr. Friedman stated that the meeting went over the history of the Inland Area cleanup program. Some of the Inland Area might be transferred to Federal Agencies. This was the first of several meetings that will occur in the future. Arsenic at Site 22 was also discussed. Mr. Ramsey stated that there is a time constraint to the reuse plans and the possibility of early transfer of portions of the Inland Area. Ms. Hamburger stated that the Concord City Council is sending out messages to the community that the Navy is not going to cleanup the site prior to transfer. Mr. Ramsey stated that the reuse of the land is going to be reviewed prior to determining the best plan for cleanup. The Inland Area cleanup can be done prior to the transfer or also once the property is transferred during the redevelopment process. Mr. Montagh stated that there is also the option for a third party developer that could perform the cleanup during the reuse construction process. Sarah Ann Moore (Navy Deputy Base Closure Manager) stated that there are several types of disposition methods. Federal screening is currently being conducted. The Navy has not made the final determination of surplus or determined the transfer strategy for the base. The Navy and the City of Concord have a good working relationship and regularly discuss the environmental program and BRAC progress. Lisa Anich (Friends of Mount Diablo Creek) asked how the public can get involved in the decision making process of the cleanup and transfer. There have been rumors that the City of Concord may build an energy plant or a prison in the Inland Area. Mr. Montagh stated that the Navy cannot begin the cleanup until the City of Concord determines their reuse plan. Ms. Moore stated that the Navy has not stopped their environmental work at the base. One way the public can get involved is by providing their opinion to the City on the reuse of the base. Mr. Ramsey stated that the agencies want to make sure that the Navy continues with their cleanup of the Inland Area while the City of Concord develops the reuse plan.

Mr. Montagh stated that the City of Concord is going to be hosting many community outreach activities to get feedback on the Inland Area reuse plan. The City of Concord will be hosting a community outreach event on June 10, 2006 at the Senior Center to solicit feedback from the public on the goals and processes for establishing the reuse plan for the NAVWPNSTA Seal Beach Det Concord Inland Area.

The City of Concord will host separate events for the community to provide input on the reuse of the Inland Area. The RAB is a forum for the community to receive information on the Navy's environmental cleanup of NAVWPNSTA Seal Beach Det Concord, and is not the appropriate forum to discuss the reuse

plan.

VI. BUDGET AND SITE MANAGEMENT PLAN (SMP) FOR THE TIDAL AND INLAND AREAS

Ms. Jacobsen provided a presentation on the budget and SMP for the Tidal and Inland Areas. The presentation is included as Attachment D.

Igor Skaredoff (Martinez resident) asked if the construction of the Tidal Area Site 1 Landfill will be completed in 2007. Ms. Jacobsen stated that the Navy is still on schedule for completion of the landfill cap by the end of 2007. Doug Bielskis (Engineering/Remediation Resources Group, Inc. [EERG) stated that the Navy is going to complete the design before beginning the landfill cap construction. Mr. Skaredoff stated that he would be interested in seeing what the Navy's priority projects are for the Tidal Area. Ms. Jacobsen stated that the Navy's priorities are the Site 30, Sites 2, 9, and 11, groundwater monitoring and the Site 1 Landfill cap construction projects. Ms. Jacobsen stated that the Navy is also currently kicking off the military munitions response program for which funding is slated for fiscal year 2014.

Ms. Jacobsen stated that the Navy is currently working with the U.S. Army to determine when they will be taking over the cleanup of the Tidal Area. The Tidal Area transfer to the Army is slated for 2008.

VII. DRAFT FINAL SUPPLEMENTAL FS FOR THE LITIGATION AREA SITES

Steve Delhomme (TtEMI) provided a presentation on the Draft Final Supplemental FS for the Litigation Area Sites. The presentation is included as Attachment E.

Ms. Welles asked what the proprietary compound used for Lost Slough Alternative 5. Mr. Delhomme stated the proprietary stabilizing agent has not been determined, but provided Eco Bond as an example of compound that could be used. The proposed technique is to crystallize the contaminants in the soil which reduces bioavailability and protects the surface water at the site.

Mr. Skaredoff stated that there have been other local slough's that the Navy should review that have been successfully relocated.

Ms. Anich asked what type of material is used to make an AquaBlok™ and if it is safe from erosion. Mr. Delhomme stated that the AquaBlok™ is a clay material that expands to three times its size once it is put in place. Mr. Skaedoff asked how the AquaBlok™ alternative rates so high on the scale if it will destroy the sites habitat. Mr. Delhomme stated AquaBlok™ rates high on the scale because it eliminates the risk at the site. Cindi Rose (TtEMI) stated that if a habitat is destroyed by a cleanup alternative, the Navy is responsible for creating a habitat to replace it. Ms. Anich asked whether phytoremediation was considered as a cleanup alternative. Mr. Delhomme stated that the water flow velocities in the slough prevent the establishment of vegetation in the bottom of the slough, so phytoremediation was not evaluated.

Mr. Skaredoff asked if the Contra Costa Mosquito Abatement District wants to keep the mosquito abatement ditches at the site. Mr. Delhomme stated that the mosquito abatement ditches are currently inactive but the Contra Costa Abatement District does want to keep them ready for use if they need them.

Ms. Hamburger asked if the Navy has looked into developing a culvert in the Litigation Area. Mr. Delhomme stated that a man made culvert is not a viable option for the Litigation Area.
Mr. Skaredoff asked how the Navy will determine the best alternative in the proposed plan phase of the Litigation Area project. Ms. Jacobsen stated that the Navy will work with the agencies to come up with an alternative that everyone agrees on.

Mr. Skaredoff asked if the Navy is currently looking into the Remedial Action Subsite 3 sediment contamination. Mr. Delhomme stated that the Navy is looking into excavating and stabilizing the habitat.

Ms. Hamburger asked if the Navy is looking into uncontaminated areas near the Litigation Area to relocate the slough. Mr. Delhomme stated that if the Navy decides to relocate the slough, the location will be determined during the remedial design phase.

VIII. NEXT MEETING AND ACTION ITEMS

The next RAB meeting is scheduled for 6:30 to 8:30 p.m. on Wednesday, July 5, 2006 at the Concord Police Department Community Room.

The following action item was generated during the RAB meeting on June 7, 2006:

No.	Action Item	Target Date for Completion	Completion Date (or Status)
1	The Navy will finalize and distribute the March 1, 2006, April 5, 2006 and May 3, 2006 RAB meeting minutes.	7/5/06	Completed on 6/29/06

ATTACHMENT A

ATTENDEES AND AFFILIATIONS
RESTORATION ADVISORY BOARD MEETING
NAVAL WEAPONS STATION SEAL BEACH DETACHMENT CONCORD, CALIFORNIA

JUNE 7, 2006
(One Page)

ATTENDEES AND AFFILIATIONS
RESTORATION ADVISORY BOARD MEETING
NAVAL WEAPONS STATION SEAL BEACH DETACHMENT CONCORD, CALIFORNIA

JUNE 7, 2006

Name	Affiliation	Telephone
Wayne Akiyama	Shaw Environmental, Inc.	(925) 288-2003
Lisa Anich*	Friends of Mount Diablo Creek	(925) 689-2642
Doug Bielskis	Engineering/Remediation Resources Group, Inc. (ERRG)	(925) 969-0750
Beth Byrne	Concord Resident	(925) 686-4815
Harry Byrne	Concord Resident	(925) 686-4815
Joanna Canepa	TtEMI	(425) 673-3652
Ellen Casados	U.S. Navy BRAC PMO West	(619) 532-0968
Lik-See Chung	U.S. Navy IPT West	(650) 746-7469
Steve Delhomme	TtEMI	(832) 251-5163
Alan Friedman	Water Board	(510) 622-2347
Jessica Hamburger*	CCRCD	(925) 672-6522 X118
Carolyn Hunter	TtEMI	(415) 222-8297
Kim Jacobsen	U.S. Navy, NAVFAC Southwest	(619) 532-1448
John Kaiser	Water Board	(510) 622-2368
Matt Lenz	U.S. Navy Resident Officer in Charge f Construction	(510) 755-9889
Terry Martin	U.S. Navy NAVFAC Southwest	(619) 532-4207
John Montagh	City of Concord	(925) 671-3082
Sarah Ann Moore	U.S. Navy BRAC PMO West	(619) 532-0965
Ric Notini	City of Concord	(925) 671-3024
Phillip Ramsey	EPA	(415) 972-3006
Anne Rikkelman	Concord Resident	(925) 689-2662
Cindi Rose	TtEMI	(415) 222-8286
Igor Skaredoff*	Martinez Resident	(925) 229-1371
Steve Tyahla	The Source Group	(925) 944-2856 X306
Cindy Welles*	Clyde Resident	(925) 685-2698
Rick Weissenborn	U.S. Navy BRAC PMO West	(619) 532-0952
Mary Lou Williams*	Concord Resident	(925) 685-1415

Notes:

*	Community Restoration Advisory Board (RAB) Member
CCRCD	Contra Costa Resource Conservancy Department
DTSC	Department of Toxic Substances Control
EPA	U.S. Environmental Protection Agency
IPT West	U.S. Navy Integrated Project Team West, NAVFAC SW
PMO West	U.S. Navy Project Manager Office West
TtEMI	Tetra Tech EM Inc.
Water Board	San Francisco Bay Regional Water Quality Control Board

ATTACHMENT B

AGENDA
RESTORATION ADVISORY BOARD MEETING
NAVAL WEAPONS STATION SEAL BEACH DETACHMENT CONCORD, CALIFORNIA

JUNE 7, 2006

(One Page)

AGENDA

NAVAL WEAPONS STATION SEAL BEACH (NWSSB) DETACHMENT CONCORD
RESTORATION ADVISORY BOARD (RAB) MEETING

Wednesday, June 7, 2006
6:30 p.m. – 8:30 p.m.

Location: Concord Police Department Community Room
1350 Galindo Street, Concord, CA 94520

6:30 – 6:40	Call to Order ➢ Welcome ➢ Introductions ➢ Public Comments ➢ July Agenda Approval Lead: Community Co-chair
6:40 – 6:50	Approval of March, April, and May 2006 Meeting Minutes Review Unresolved Business Lead: Navy Co-chair
6:50 - 7:30	Committee Reports/Announcements ➢ RAB Announcements, Reports or other business ➢ Remedial Project Managers' Update (Navy/EPA/DTSC/RWQCB)
7:30 – 7:35	Break
7:35 – 7:45	Budget and SMP Amendments (Tidal and Inland) Presenter: Navy
7:45 – 8:30	Draft Final Supplemental Feasibility Study for the Litigaition Area Sites Presenter: TTEMI, Steve Delhomme
8:30	Adjourn

NWSSB DETACHMENT CONCORD RAB Meetings are held the first Wednesday of every month, unless changed.
Information regarding the Environmental Restoration program at NWSSB Detachment Concord can be found at:
- Tidal and Inland prior to December 2005 - http://www.sbeach.navy.mil/Programs/Environmental/IR/IR.htm
- Tidal after December 2005 – will be https://portal.navfac.navy.mil/portal/page?_pageid=181,1&_dad=portal&_schema=PORTAL
- Inland after December 2005 - http://www.navybracpmo.org/brac2005/bracbases/ca/concord/default.aspx;
In addition, a public voicemail is available for questions at (925) 246-4333.
NAVFAC Public Affairs Officer: Mr. Lee Saunders, (619) 532-3100, lee.saunders@navy.mil
Lead RPM Tidal Area and Navy RAB Co-Chair: Mrs. Kim Jacobsen, (619) 532-1448, kimberly.jacobsen@navy.mil
BRAC Environmental Coordinator: Mr. Rick Weissenborn (619) 532-0952, richard.weissenborn@navy.mil
Community RAB Co-Chair: Mary Lou Williams, Mlou1015@aol.com

ATTACHMENT C

NAVY AND ENVIRONMENTAL PROTECTION AGENCY
REMEDIAL PROJECT MANAGER'S UPDATE
RESTORATION ADVISORY BOARD MEETING
NAVAL WEAPONS STATION SEAL BEACH DETACHMENT CONCORD, CALIFORNIA

JUNE 7, 2006

(2 Pages)

Navy RPM/BCT Update for 7 June 2006 Meeting of Naval Weapons Station Seal Beach, Detachment Concord Restoration Advisory Board (RAB)

Summary of Navy Remedial Project Manager (RPM) Activities since the last RAB Meeting held on Wednesday, 3 May 2006.

Tidal Area

- **25 May 2006 -** The Navy issued the Final Remedial Action Work Plan changes and modified drawings for the Site 1 landfill cover to USEPA. These changes cover the modified cover design (now with geo-liner) and soil vapor vent design negotiated during the dispute resolution process. These changes will be issued to all as soon as possible.
- **29 May 2006 –** The Navy issued the Draft Final Supplemental Feasibility Study for the Litigation Area Sites. This document presents and compares remedial action alternatives to address sediment contaminated with metals in the Litigation Area (ecological risk).

Inland Area

Tidal and Inland Areas

- **4 May 2006 –** The Navy met with the project manager from SWBRWQCB to discuss the Tank Program Status sites.
- **22 May 2006 –** The Navy issued Draft Meeting Minutes for the May 3, 2006 Remedial Project Managers meeting.
- **1 June 2006 –** The Navy issued Final Meeting Minutes for the April 5, 2006 Remedial Project Managers meeting.
- **1 June 2006 –** The Navy distributed draft Agenda for June 7, 2006 RAB and prior Meeting Minutes by email.
- **7 June 2006** – The Navy met with the project managers from USEPA, DTSC, DFG, and the SFBRWQCB. This was our regular monthly meeting.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

U.S. Environmental Protection Agency
Restoration Advisory Board Update
June 7, 2006

Correspondence Issued:

- May 22, 2006: EPA Review of the Navy's April 5, 2006, Site 1 (Tidal Area Landfill) Design Change Determination Memo.
- June 2, 2006: EPA provided feedback on meeting minutes from a May 3, Draft RPM meeting and an April 18, 2006, pesticide meeting.

Meetings/Site Visits:

- May 5, 2006: Site 31 Site Visit/Off-Site Surface Water Survey
- May 19, 2006: City, Navy, Regulators (Transfer/Reuse) Meeting - Hosted by City.
- May 31, 2006: Site 29 Site Visit and Remedial Investigation Scoping Discussion
- June 7, 2006, RPM Meeting:
  Major Topics:
  Tidal Area Sites Sampling Plan; Munitions Preliminary Assessment; SMP
- June 7, 2006: RAB Site Tour to Site 1 -Tidal Area Landfill
- June 7, 2006, RAB: Major Topic - Litigation Area Feasibility Study

Prepared by:

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ATTACHMENT D

BUDGET AND SITE MANAGEMENT PLAN AMMEDMENTS FOR THE TIDAL AND INLAND AREAS PRESENTATION
RESTORATION ADVISORY BOARD MEETING
NAVAL WEAPONS STATION SEAL BEACH DETACHMENT CONCORD, CALIFORNIA

JUNE 7, 2006

(4 Pages)

Budget and SMP Amendments
2006 RAB Update
NWS Seal Beach Detachment
Concord, California

Kim Jacobsen, P.E.
Lead RPM NAVFAC SOUTHWEST
June 7, 2006 RAB Meeting

Site Management Plan

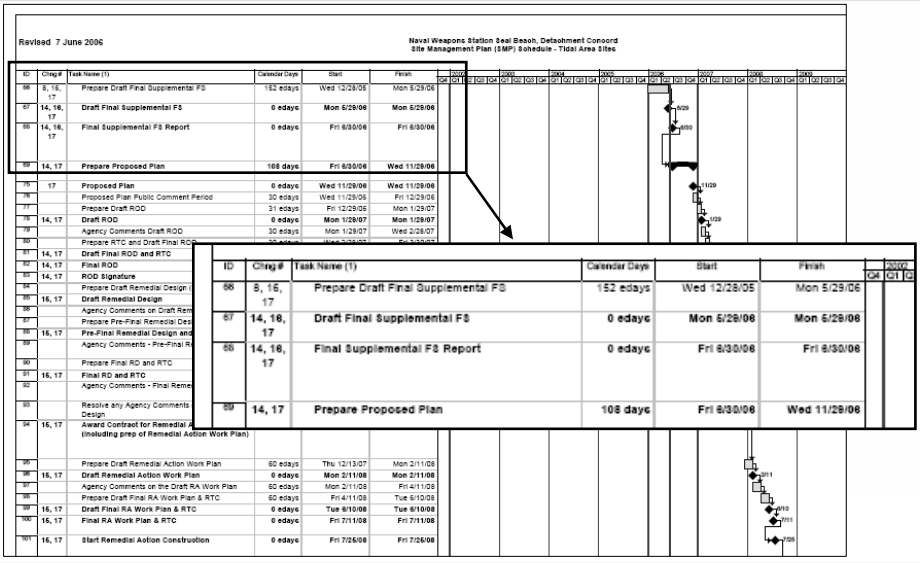
What is it?

- Schedule of proposed actions and milestones for clean-up program
- Appendix to Federal Facilities Agreement
- Priorities agreed to by Federal Facility Agreement signatory parties, based on Risk plus other factors (for example: actual and anticipated funding)
- Amended annually (draft by June 15) and through extension requests
- Published for public by EPA and State

2006 SMP Annual Amendment - Tidal

- 2006 Annual Amendment Changes (beyond any already approved extensions granted by extension requests):
  - Site 2, 9, and 11 Data Gap Sampling schedule extended to negotiate sampling strategy with federal and state agency representatives.
  - Site 30 "Removal Action Design" changed to "Removal Action Work Plan" and pushed out 90 days to allow for procurement using alternate procurement strategy. Still planning for removal action Fall 2007.
  - Site 31 Remedial Investigation Work Plan implementation schedule extended for approval and UP site access.

2006 SMP Annual Amendment - Tidal


Revised 7 June 2006

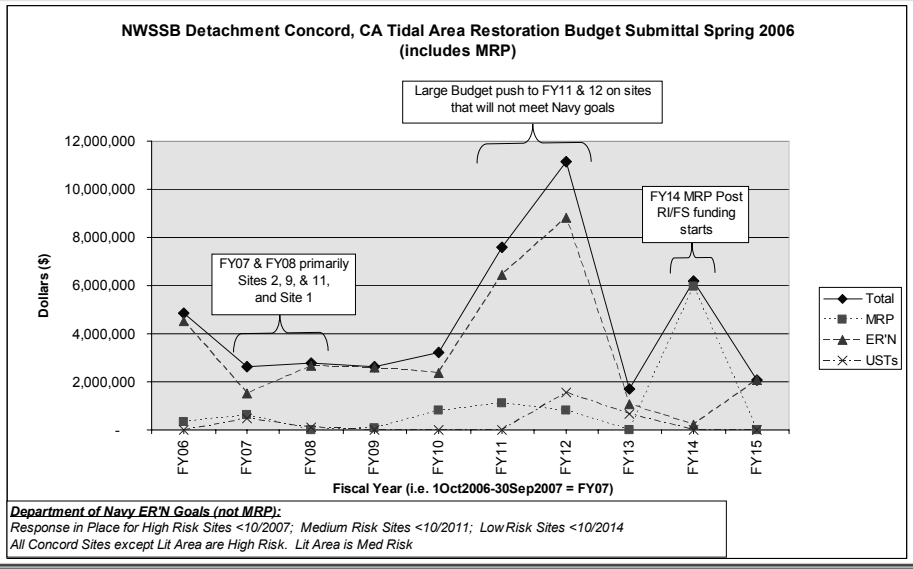
Naval Weapons Station Seal Beach, Detachment Concord
Site Management Plan (SMP) Schedule - Tidal Area Sites

ID	Chng #	Task Name (1)	Calendar Days	Start	Finish
66	8, 16, 17	Prepare Draft Final Supplemental FS	152 edays	Wed 12/28/05	Mon 5/29/06
67	14, 16, 17	Draft Final Supplemental FS	0 edays	Mon 5/29/06	Mon 5/29/06
68	14, 16, 17	Final Supplemental FS Report	0 edays	Fri 6/30/06	Fri 6/30/06
69	14, 17	Prepare Proposed Plan	108 days	Fri 6/30/06	Wed 11/29/06
75	17	Proposed Plan	0 edays	Wed 11/29/06	Wed 11/29/06
76		Proposed Plan Public Comment Period	30 edays	Wed 11/29/06	Fri 12/29/06
77		Prepare Draft ROD	31 edays	Fri 12/29/06	Mon 1/29/07
78	14, 17	Draft ROD	0 edays	Mon 1/29/07	Mon 1/29/07
79		Agency Comments Draft ROD	30 edays	Mon 1/29/07	Wed 2/28/07
80		Prepare RTC and Draft Final ROD			
81	14, 17	Draft Final ROD and RTC			
82	14, 17	Final ROD			
83	14, 17	ROD Signature			
84		Prepare Draft Remedial Design			
85	16, 17	Draft Remedial Design			
86		Agency Comments on Draft Rem			
87		Prepare Pre-Final Remedial Des			
88	16, 17	Pre-Final Remedial Design and			
89		Agency Comments - Pre-Final R			
90		Prepare Final RD and RTC			
91	16, 17	Final RD and RTC			
92		Agency Comments - Final Reme			
93		Resolve any Agency Comments Design			
94	16, 17	Award Contract for Remedial A (including prep of Remedial Action Work Plan)			
95		Prepare Draft Remedial Action Work Plan	60 edays	Thu 12/13/07	Mon 2/11/08
96	16, 17	Draft Remedial Action Work Plan	0 edays	Mon 2/11/08	Mon 2/11/08
97		Agency Comments on the Draft RA Work Plan	60 edays	Mon 2/11/08	Fri 4/11/08
98		Prepare Draft Final RA Work Plan & RTC	60 edays	Fri 4/11/08	Tue 6/10/08
99	16, 17	Draft Final RA Work Plan & RTC	0 edays	Tue 6/10/08	Tue 6/10/08
100	16, 17	Final RA Work Plan & RTC	0 edays	Fri 7/11/08	Fri 7/11/08
101	16, 17	Start Remedial Action Construction	0 edays	Fri 7/25/08	Fri 7/25/08

BUDGET – Tidal Area

- Budget Process:
  - 6 Year Future Year Defense Program (FYDP) - confirmed or amended every 6 months in Fall and Spring. However, entire life-cycle costs is estimated and tracked for clean-up program.
  - For clean-up program, goal is to obtain "Response in Place" for
    - –High Sites by 30 Sep 2007,
    - –Medium Sites by 30 Sep 2011, and
    - –Low Sites by 30 Sep 2014.
  - "Response in Place" means your selected remediation strategy, whether it is administrative or physical, be physically in place.

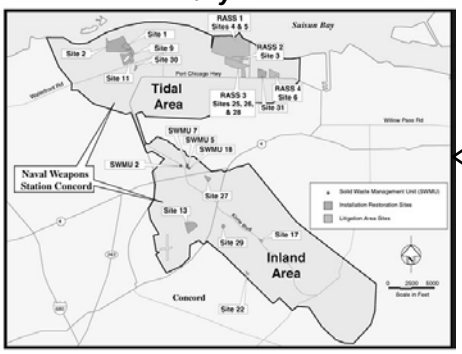
BUDGET – Tidal Area



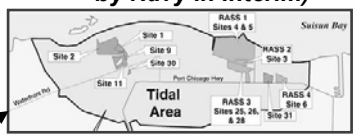
FUTURE UNKNOWNS

- May change with negotiated strategy change.
- May change with Tidal transfer to Army.

Navy

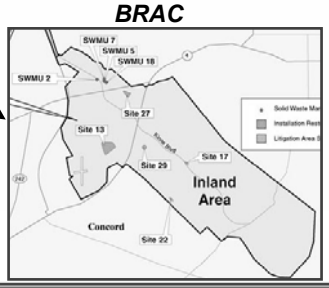


To Army (managed by Navy in interim)



BRAC 2005 Split

BRAC



Questions?

ATTACHMENT E

DRAFT FINAL SUPPLEMENTAL FEASIBILITY STUDY FOR THE LITIGATION AREA SITES PRESENTATION
RESTORATION ADVISORY BOARD MEETING
NAVAL WEAPONS STATION SEAL BEACH DETACHMENT CONCORD, CALIFORNIA

JUNE 7, 2006

(26 Pages)

Draft Final Supplemental Feasibility Study for the Litigation Area

Naval Weapons Station Seal Beach Detachment Concord

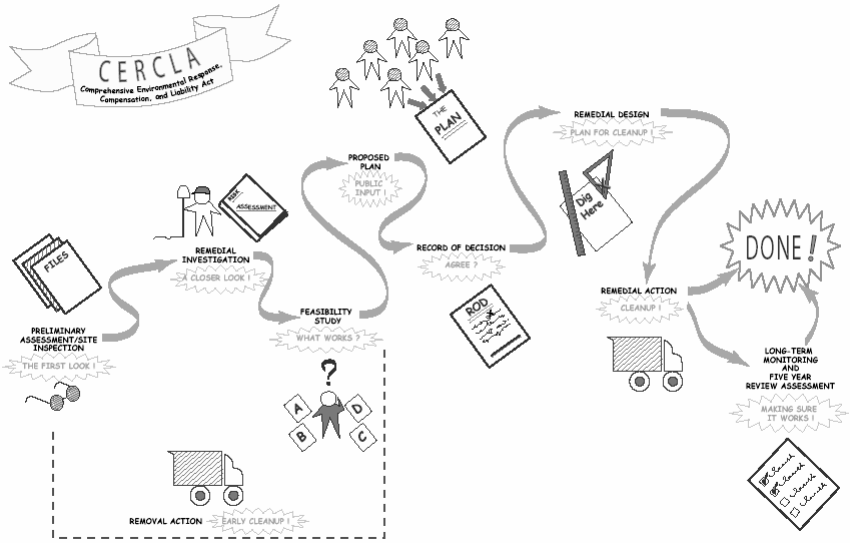
by
Steve DelHomme, P.E.
SulTech

June 7, 2006

Overview

- **CERCLA Process Refresher**
- **Site Refresher**
- **Lost Slough and RASS 3 Pond Alternatives**
- **Mosquito Ditch Alternatives**
- **Nichols Creek Alternatives**
- **Questions**

CERCLA Process



Final Five Year Periodic Review Assessment
June 30, 2003

Purpose

- Evaluate implementation and effectiveness of selected remedy
- Determine whether additional actions are necessary

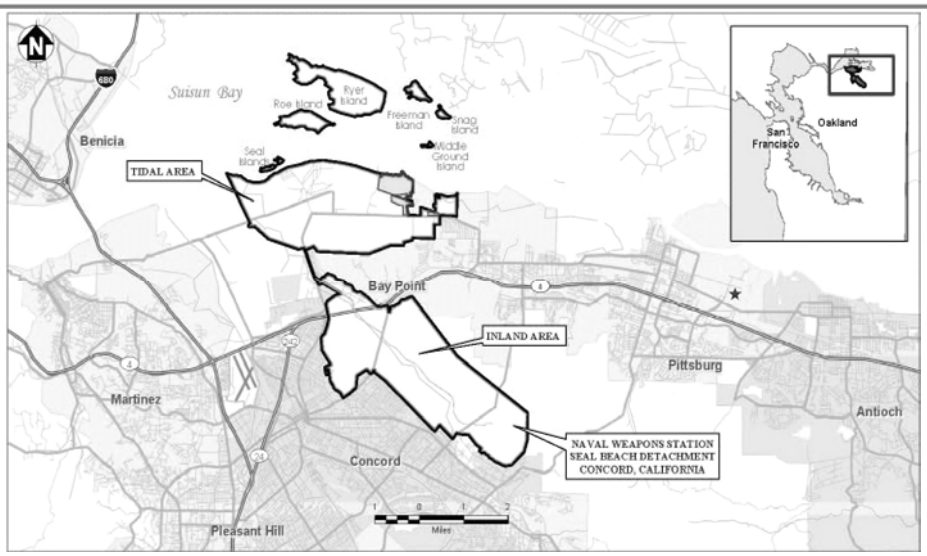
Recommendations:

- Conduct data gaps evaluation (final report submitted May 2005)
- Prepare monitoring plan (final report submitted October 2004)
- Conduct supplemental FS to evaluate additional remedial options for portions of the site where either ongoing contaminant migration exists or ecological risk warranted FS evaluation. Areas included in FS
  - Sloughs
  - Unit 7 Mosquito Ditches
  - Nichols Creek

Components of a Feasibility Study

- **Development and Screening of Alternatives**
  - **Develop remedial action objectives (RAO), or specific goals for protection of human health and the environment**
  - **Develop general response actions to meet RAOs**
  - **Identify volumes or areas to which general response actions might be applied**
  - **Identify and Screen technologies**
  - **Assemble technologies into alternatives**
- **Detailed Analysis of Alternatives; 9 evaluation criteria that cover:**
  - **Effectiveness of protecting human health and the environment**
  - **Technical and administrative implementability**
  - **Cost**
  - **Acceptability to agencies and community**

Site Vicinity



Site Refresher - Litigation Area Ecosystem

- Complex of tidal marshes and uplands
- Supports significant populations of sensitive species
  - Salt Marsh Harvest Mouse, California Black Rail
  - Soft Bird's Beak and other rare plants
- Metals contamination in sediment from historic waste disposal of neighboring industrial properties and previous owners

Site Refresher - Litigation Area Site Chronology

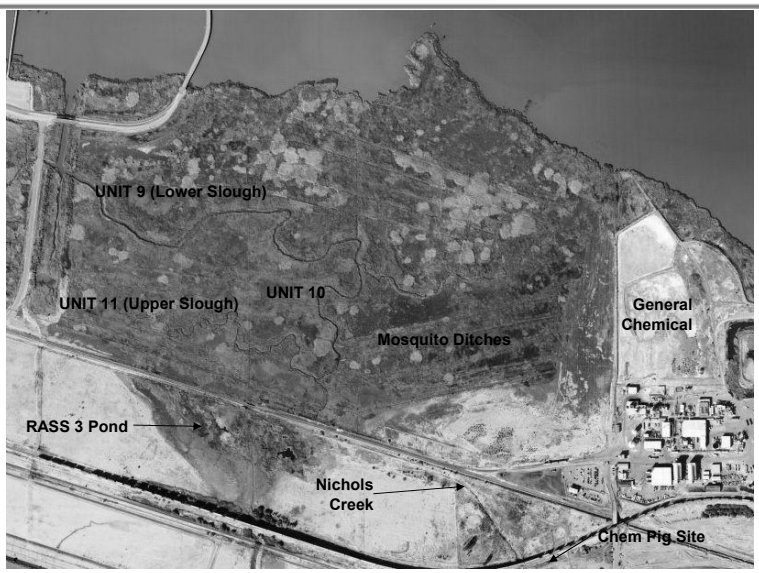
- 1983: Sites identified by Navy
- 1988: Remedial Investigation/ Feasibility Study (RI/FS) completed
- 1989: Record of Decision (ROD) and Remedial Action Plan (RAP) documented selected remedy
- 1991: Pre-remediation monitoring
- 1993-96: Remediation and restoration conducted
- 1995-2000: Post-remediation monitoring
- 2001-2003: First post-remediation five year review
- 2003 to present: Supplemental FS, monitoring plan, data gaps study, treatability study, Draft Final Supplemental FS

For original remedial action, the most contaminated portion of each site was cleaned up; some contamination was left in place to avoid destruction of sensitive habitat

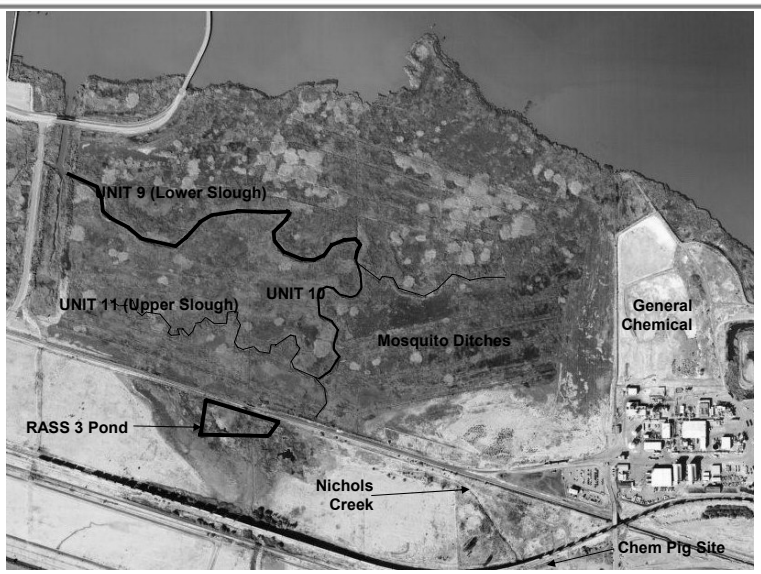
Recent Litigation Area Activities

- Submitted Draft Supplemental Feasibility Study (FS) on March 19, 2004
- Additional data was required to complete the FS
- Field Work Conducted During Summer 2005
- Final Treatability Study Submitted on February 23, 2006
- Incorporated Treatability Study Data and Agency Comments into the Draft Final Supplemental FS – submitted May 29, 2006

Litigation Area
Aerial Photo – USGS, February 2004



RASS 3 Pond and Lost Slough
Aerial Photo – USGS, February 2004



RASS 3 Pond & Units 9, 10 and 11 Lost Slough (RASS 1)

Remedial Action Objectives

- **Reduce the risk to birds such as the Black rail, to acceptable levels from the ingestion of contaminated prey and incidental ingestion of sediment contaminated with arsenic, cadmium, copper, lead, zinc, mercury and selenium.**

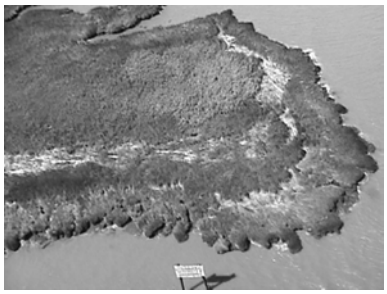
- **Reduce the risk to benthic invertebrates from arsenic, cadmium, copper, lead, zinc, mercury and selenium in sediment.**

Modifications to Alternatives

Draft FS Alternatives		Draft Final FS Alternatives	
1	No Action (Includes Monitoring)	LS-1	No Action
		LS-2	Long Term Monitoring
2A	Removal of Contaminated Sediment by Conventional Excavation	LS-3A	Removal of Contaminated Sediment by Conventional Excavation
2B	Removal of Contaminated Sediment by Excavation in Unit 11 and Dredging in Units 9 and 10	LS-3B	Removal of Contaminated Sediment by Excavation in Units 10 & 11 and Dredging in Unit 9. Excavation of RASS 3 pond
3	Physical Barrier (12-inch Cement Stabilized Sand/Soil Cover)	LS-4	Physical Barrier (AquaBlok), excavation of RASS 3 pond
4	In-Situ Solidification/ Stabilization (S/S)	LS-5	In-Situ Stabilization
5	Relocate Slough	LS-6	Relocate Slough, excavation RASS 3 pond

Alternative LS-1: No Action

- **Description: Site would be left in its current condition with no monitoring**
- ***Advantages:***
  - Least invasive alternative; no damage to habitat
  - Lowest Cost
- ***Disadvantages:***
  - May not attain RAOs if no net deposition in slough
  - Lengthy time frame would likely be required to attain RAOs
  - No means to monitor site condition or progress of possible recovery



Alternative LS-2: Long-Term Monitoring

- **Description: Sediment would be sampled annually**
- ***Advantages:***
  - Non invasive; minimal damage to habitat during sampling
  - Provides a means to monitor future contaminant trend
  - Low Cost
- ***Disadvantages:***
  - Uncertain long term effectiveness
  - Lengthy time frame likely required to attain RAOs

Alternative LS-3A: Excavate Unit 9, 10 and 11

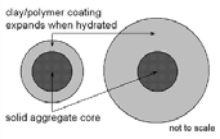
- **Description: Conventional excavation equipment would be employed to remove contaminated sediment. Excavated sediment would be transported off site for stabilization and disposal at a permitted landfill**
- ***Advantages:***
  - Addresses risk from chemicals in sediment to ecological receptors in shorter time frame
  - Reduction in volume of contaminated sediment on site
  - Short remedial duration
- ***Disadvantages:***
  - Very invasive; potential for short-term and long-term damage to habitat
  - Cost
  - Potential for recontamination from sidewalls or surface
  - disruption of side walls in sloughs

Alternative LS-3B: Excavate Units 10 & 11, Dredge Unit 9

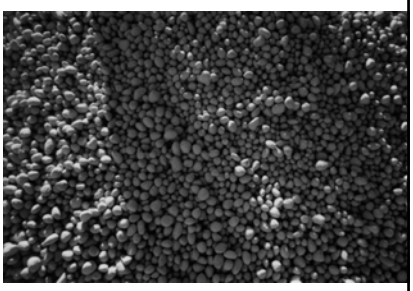
- **Description: Use conventional excavation in Unit 11. Dredge Units 9 and 10. Dredged sediment would be transported off site for stabilization and disposal at a permitted landfill.**
- ***Advantages:***
  - Less damage to habitat than Alternative 3A
  - Addresses risk to ecological receptors from contaminated sediment
  - Reduction in volume of contaminated sediment on site
  - Short remediation duration
- ***Disadvantages:***
  - Potential short- and long-term damage to habitat in Units 10 and 11
  - Access will be difficult due to size limitations of dredge
  - Water treatment costs will be high
  - High cost

Alternative LS-4: Physical Barrier

- **Description: A 6-inch barrier would be constructed over contaminated areas using a proprietary product (AquaBlok).**



- ***Advantages:***
  - Addresses immediate risk from contaminated sediment
  - Short remedial duration
  - Less expensive than Alternative 3
- ***Disadvantages:***
  - Permanent loss of slough bed as habitat
  - Cannot be implemented on sidewalls
  - Potential for recontamination from sidewalls
  - May change slough hydraulics



Alternative LS-5: In Situ Stabilization

- **Description: A proprietary compound would be mixed in-situ with contaminated sediment**
- ***Advantages:***
  - Reduces risk by reducing bioavailabilty in exposure pathway
  - Short remedial duration
  - Less expensive than Alternative 3
  - Reduces solubility of contaminants in water
- ***Disadvantages:***
  - Invasive; potential for short- and long-term damage to habitat
  - Difficult to implement on sidewalls & therefore potential for recontamination

Alternative LS-6: Relocate Slough

- **Description: Contaminated portions of the existing slough would be backfilled to grade. New sloughs would be constructed to replace the backfilled portions.**
- ***Advantages:***
  - May addresses risk by eliminating exposure pathway
  - Short remedial duration
- ***Disadvantages:***
  - Very invasive; potential for short- and long-term damage to habitat
  - Potential for relocation of slough in contaminated areas; may recontaminate replacement slough
  - Very costly
  - Will significantly change marsh hydrology

Remedial Alternatives

LS-1 **No Action**

LS-2 **Long-Term Monitoring**

LS-3A **Active Removal of Contaminated Sediment by Conventional Excavation**

LS-3B **Active Removal of Contaminated Sediment by Excavation in Unit 11 and Dredging in Units 9 and 10**

LS-4 **Physical Barrier (AquaBlok)**

LS-5 **In-Situ Stabilization**

LS-6 **Relocate Slough**

Relative Ranking Descriptions

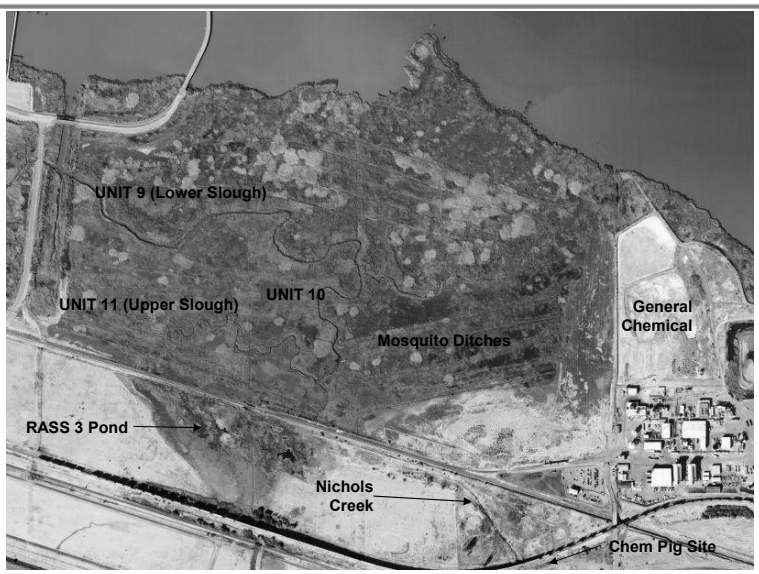
	Relative Rankings of Remedial Alternatives				
Criteria	**Low**	**Low to Moderate**	**Moderate**	**Moderate to High**	**High**
Overall protection of the environment	0 – 2	2 - 4	4 – 7	7 – 9	9 - 10
Compliance with ARARs	0	na	na	na	1
Long-term effectiveness and permanence	0 – 1	1 – 2	2 – 3	3 – 4	4 - 5
Reduction of toxicity, mobility, or volume through treatment	0	na	na	na	1
Short-term effectiveness	0 – 1	1 – 2	2 – 3	3 – 4	4 - 5
Implementability	0 – 1	1 – 2	2 – 3	3 – 4	4 - 5
Cost Ranking	0 – 1	1 – 2	2 – 3	3 – 4	4 - 5

RASS 3 Pond & Units 9, 10 and 11 Lost Slough (RASS 1)

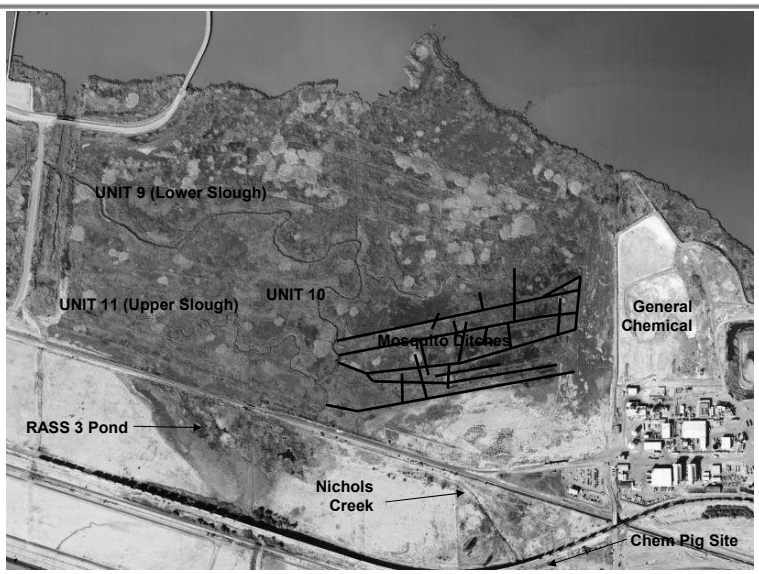
Comparative Alternatives Analysis

Criteria	Alternative LS-1: No Action	Alternative LS-2 Monitoring	Alternative LS-3A: Conventional Excavation	Alternative LS-3B: Conventional Excavation and Dredging	Alternative LS-4: Physical Barrier (6-inch AquaBlok)	Alternative LS-5: In-Situ Stabilization	Alternative LS-6: Relocate Slough
Overall protection of the environment	Unknown[1]	10	8.3	8.3	9.1	8.3	0
Compliance with ARARs	0	1	1	1	1	1	1
Long-term effectiveness and permanence	Not evaluated	1.3	2.7	2.7	2.7	2.3	3.3
Reduction of toxicity, mobility, or volume through treatment	Not evaluated	0	0	0	0	1	0
Short-term effectiveness	Not evaluated	4	3.2	3.5	4.8	3.7	3
Implementability	Not evaluated	4	3.3	3.3	4	3.5	3
Cost Ranking	Not evaluated	5	2	1	4	3	2
Total Alternative Ranking	**NA**	**25.3**	**20.5**	**19.8**	**25.6**	**22.8**	**12.3**
Present-Value Cost	$0	$1,528,000	$10,897,000	$12,236,000	$4,335,000	$9,320,000	$10,358,000

Mosquito Ditches
Aerial Photo – USGS, February 2004



Mosquito Ditches
Aerial Photo – USGS, February 2004



Unit 7 Mosquito Abatement Ditches (RASS 1)

Remedial Action Objective

Reduce the risk to birds such as the Black rail, from the ingestion of contaminated prey and incidental ingestion of sediment contaminated with arsenic, cadmium, copper, lead , zinc, selenium and mercury.

Reduce the risk to benthic invertebrates from arsenic, cadmium, copper, lead, zinc, mercury and selenium in sediment.

Modifications to Alternatives

Original Alternatives		New Alternatives	
1	No Action (Includes Monitoring)	MD-1	No Action
2	Removal of Contaminated Sediment	MD-2	Long Term Monitoring
3	Physical Barrier (12-inch Cement Stabilized Sand/Soil Cover)	MD-3	Removal of Contaminated Sediment
4	Physical Barrier (Bentonite Fill)	MD-4	Physical Barrier (AquaBlok)
5	In-Situ Solidification/ Stabilization (S/S)	MD-5	In-Situ Stabilization
6	Underground Drainage System	MD-6	Underground Drainage System
7	Assisted Passive Filling	MD-7	Partial Removal and Partial Filling

Alternatives Not Retained

- **Relocation of mosquito ditches**
  - **Low effectiveness due to probability of encountering contaminants in replacement ditches**
- **Bentonite Fill**
  - **Removed due to requirement by the mosquito abatement district to retain drainage function**

Alternative MD-1: No Action

- **Description: Site would be left in its current condition. There would be no monitoring**
- ***Advantages:***
  - Least invasive alternative; no damage to habitat
  - Lowest cost
- ***Disadvantages:***
  - May not attain RAOs if no net deposition in ditches
  - Lengthy time frame would likely be required to attain RAOs
  - No means to monitor site condition or progress of possible recovery

Alternative MD-2: Long-Term Monitoring

- **Description: Sediment would be sampled annually**
- ***Advantages:***
  - Non-invasive; minimal damage to habitat during sampling
  - Provides a means to monitor future contaminant trend
  - Low cost
- ***Disadvantages:***
  - Uncertain long-term effectiveness
  - Lengthy time frame may be required to attain RAOs

Alternative MD-3: Remove Sediment

- **Description: Conventional excavation equipment would be employed to remove contaminated sediment. Excavated sediment would be transported off site for stabilization and disposal at a permitted landfill.**
- ***Advantages:***
  - Addresses risk to ecological receptors from contaminated sediment
  - Reduction in volume of contaminated sediment on site
  - Short remediation duration
- ***Disadvantages:***
  - Very invasive; potential for short- and long-term damage to habitat
  - Costly
  - Potential for recontamination due to disruption of sidewalls

Alternative MD-4: Physical Barrier (AquaBlok)

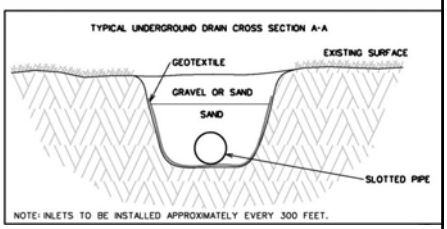
- **Description: A 6-inch barrier would be constructed over contaminated areas using a proprietary product (AquaBlok).**
- ***Advantages:***
  - Addresses risk by eliminating exposure pathway
  - Short remedial duration
  - Less expensive than Alternative MD-3
- ***Disadvantages:***
  - Invasive; potential for short- and long-term damage to habitat but less than Alternative MD-3.
  - Likely permanent loss of ditch bed as habitat
  - May be difficult to implement sidewalls
  - Potential for recontamination due to sidewalls

Alternative MD-5: In-Situ Stabilization

- **Description: A proprietary compound would be mixed in-situ with contaminated sediment.**
- ***Advantages:***
  - Addresses risk by eliminating exposure pathway
  - Short remedial duration
  - Less expensive than Alternative MD-3
  - Reduces solubility; more effective than Alternative MD-4
- ***Disadvantages:***
  - Invasive; potential for short- and long-term damage to habitat
  - Permanent loss of ditch bed as habitat
  - Cannot be implemented on sidewalls
  - Potential for recontamination due to sidewalls
  - Erosion under stabilized surface may limit effectiveness

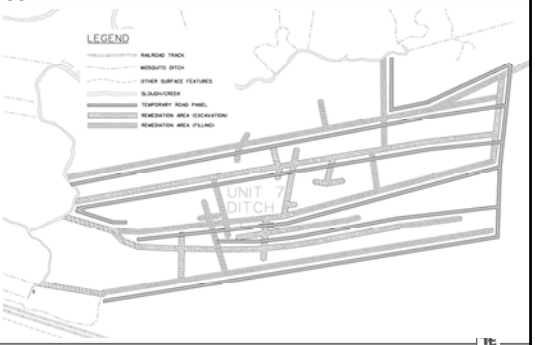
Alternative MD-6: Underground Drainage System

- **Description: Geotextile material will be used to line the bottom and sides of the ditch. A slotted 12-inch drainage pipe with inlets will be placed above the liner. Sand and gravel backfill will be placed above the drainage pipe.**
- ***Advantages :***
  - Addresses risk
  - Short remedial duration
  - More effective than Alternative MD-5
  - Minimal risk of recontamination
- ***Disadvantages:***
  - Invasive; potential for short- and long-term
  - damage to habitat
  - Permanent loss of ditch as fish habitat
  - Could require long-term maintenance
  - Could affect present marsh hydrology



Alternative MD-7: Partial Removal, Partial Filling

- **Description: Temporary barriers will be installed inside the ditches to encourage sedimentation**
- ***Advantages:***
  - –Addresses risk to ecological receptors from contaminated sediment
  - –Short remediation duration
  - –Filled ditched provide lower chance of recontamination
  - –Still allows drainage from the area
- ***Disadvantages:***
  - – May alter habitat due to more restricted flow
  - – Very invasive; potential for short- and long-term damage to habitat
  - – Costly
  - – Potential for recontamination due to disruption of sidewalls



Revised Alternatives Summary

MD-1 No Action

MD-2 Long-Term Monitoring

MD-3 Active Removal of Contaminated Sediment

MD-4 Physical Barrier (AquaBlok)

MD-5 In-Situ Stabilization

MD-6 Underground Drainage System

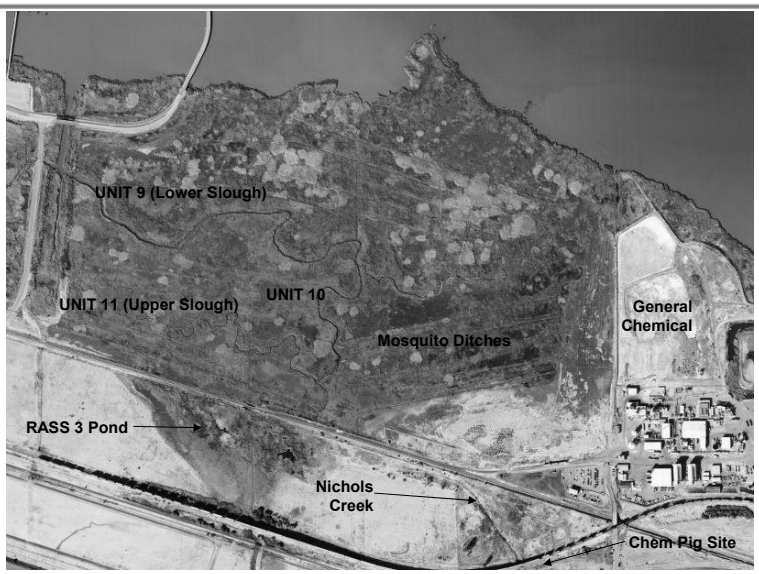
MD-7 Partial Removal and Partial Filling

Unit 7 Mosquito Abatement Ditches (RASS 1)

Comparative Alternatives Analysis

Criteria	Alternative MD-1: No Action	Alternative MD-2 Monitoring	Alternative MD-3: Conventional Excavation	Alternative MD-4: Physical Barrier (6-inch AquaBlok)	Alternative MD-5: In-Situ Stabilization	Alternative MD-6: Underground Drainage System	Alternative MD-7: Partial Removal and Partial Filling
Overall protection of the environment	Unknown[1]	10	7.1	8.8	9.4	0	4.7
Compliance with ARARs	0	1	1	1	1	1	1
Long-term effectiveness and permanence	Not Evaluated	1.7	3	3	3	5	3.7
Reduction of toxicity, mobility, or volume through treatment	Not Evaluated	0	0	0	1	0	0
Short-term effectiveness	Not Evaluated	4	2.3	3.9	2.8	2.8	2.3
Implementability	Not Evaluated	4	3.5	4.3	3.5	3.5	3.5
Cost Ranking	Not Evaluated	5	1	3	1	1	1
Total Alternative Ranking	**NA**	**25.7**	**17.9**	**24**	**21.7**	**13.3**	**16.2**
Present-Value Cost	$0	$1,002,000	$7,833,000	$1,865,000	$7,209,000	$7,281,000	$7,204,000

Nichols Creek
Aerial Photo – USGS, February 2004



Nichols Creek
Aerial Photo – USGS, February 2004

Nichols Creek

Remedial Action Objectives

- **Reduce erosion of the creek bed and banks along Nichols Creek in RASS 3 (part of Unit 13) to prevent sediments that contain unacceptable levels of arsenic (46 mg/kg), cadmium (1.9 mg/kg), copper (81 mg/kg), mercury (0.32 mg/kg), lead (95 mg/kg), selenium (0.64 mg/kg), and zinc (264 mg/kg) from reaching ecological receptors.**

Nichols Creek

Remedial Alternatives

NC-1 No Action

NC-2 Monitoring

NC-3 Restore Riparian Vegetation

NC-4 Re-Contour Creek Bed

NC-5 Stabilize Creek Bed

NC-6 Channelize Creek

NC-7 Restore Riparian Vegetation and Stabilize Creek Bed

Nichols Creek

Alternative NC-1: No Action

- **Description: Site would be left in its current condition. There would be no monitoring**
- ***Advantages:***
  - Least invasive alternative
  - Lowest cost
- ***Disadvantages:***
  - May not attain RAOs due to continued erosion
  - No means to monitor site condition or determine the extent of future erosion

Nichols Creek

Alternative NC-2: Monitoring

- **Description: Site would be left in its current condition. There would be no monitoring**
- ***Advantages:***
  - Provides a method to monitor contaminated sediment movement
  - Second lowest cost
- ***Disadvantages:***
  - May not attain RAOs due to continued erosion

Nichols Creek

Alternative NC-3: Restore Vegetation

- **Vegetative matting and seeding would be applied along the entire length of the creek bed within RASS 3**
- ***Advantages:***
  - Least cost of any active alternative
  - Easiest active alternative to implement
- ***Disadvantages:***
  - May not be effective in high-velocity areas

Nichols Creek

Alternative NC-4: Recontour Creek Bed

- **Involves redirecting surface flow away from the existing creek and through a newly constructed creek. Soils excavated during construction of the new creek bed would be used to cap the contaminated sediments in the existing creek bed**
- ***Advantages:***
  - Very effective because it moves the flow path
- ***Disadvantages:***
  - Very intrusive
  - Implementation more difficult than other alternatives

Nichols Creek

Alternative NC-5: Stabilize Creek Bed

- **Involves installing rip-rap to increase the stability of the creek bed**
- ***Advantages:***
  - Will effectively prevent erosion
  - Separates water from contaminated sediment
- ***Disadvantages:***
  - Very expensive
  - Implementation more difficult than other alternatives
  - May adversely affect flow

Alternative NC-6: Channelize Creek

- **Involves lining the creek bed with an 8-inch thick concrete lining**
- ***Advantages:***
  - May effectively prevent erosion
  - Separates water from contaminated sediment
- ***Disadvantages:***
  - Most expensive alternative
  - Most difficult implementation
  - Erosion may occur along edges

Alternative NC-7: Restore Vegetation, Stabilize Creek Bed

- **Involves installing rip rap in high-velocity flow areas and restoring vegetation in other locations**

- ***Advantages:***
  - Combines attributes of alternatives NC-3 and NC-5.
- ***Disadvantages:***
  - More difficult to implement than NC-3

Nichols Creek

Comparative Alternatives Analysis

Criteria	Alternative NC-1: No Action	Alternative NC-2: Monitoring	Alternative NC-3: Restore Riparian Vegetation	Alternative NC-4: Re-contour Creek Bed	Alternative NC-5: Stabilize Creek Bed (Rip Rap)	Alternative NC-6: Channelize Creek	Alternative NC-7: Combination of Alternatives 3 and 5
Overall protection of the environment	1[1]	1	5	9	8	8	8
Compliance with ARARs	1	1	1	1	1	1	1
Long-term effectiveness and permanence	1	1	2.7	3.7	3.3	3	3.3
Reduction of toxicity, mobility, or volume through treatment	0	0	0	0	0	0	0
Short-term effectiveness	4	4	4.3	3.5	3.3	3.3	3.8
Implementability	4	4	4.3	3.3	3.3	3	4.3
Cost Ranking	5	4	2	2	2	1	2
Total Alternative Ranking	**16**	**15**	**19.3**	**22.5**	**20.9**	**19.3**	**22.4**
Present-Value Cost	$0	$700,000	$1,111,000	$1,610,000	$1,646,000	$2,231,000	$1,604,000

Next Steps

- **6/30/06: Agency and public comments on the Draft Final Supplemental FS due**
- **11/29/06 - 12/29/06: Proposed Plan public comment period**
- **1/29/07: Draft Record of Decision available for review**

Questions