5090
Ser 10121/8004
October 8, 1997

From: Commanding Officer, Engineering Field Activity West, Naval Facilities Engineering Command

To: Restoration Advisory Board (RAB) Members Distribution List, Naval Weapons Station (NWS) Concord, CA

Subj: RESTORATION ADVISORY BOARD (RAB): MINUTES OF 18 SEPTEMBER 1997 MEETING

Encl: (1) Naval Weapons Station (NWS) Concord Restoration Advisory Board (RAB) -- Draft Meeting Minutes for 18 September 1997
(2) Agenda for 16 October 1997 RAB Meeting

1. Draft minutes of the Naval Weapons Station (NWS) Concord Restoration Advisory Board (RAB) meeting of 18 September 1997 are forwarded as enclosure (1). Any corrections or clarifications to these minutes can be provided at the next RAB meeting, at which time the minutes will be finalized.

2. Enclosure (2) is the agenda for the upcoming 16 October 1997 RAB meeting, which is scheduled for 7:00 p.m at the Ambrose Community Center, 3105 Willow Pass Road, Bay Point, CA.

3. If you have any questions regarding this matter, please contact me at (650) 244-2523, or Mr. Steve Gallo, RAB Community Co-chair, at (510) 427-3450.

ORIGINAL SIGNED BY:
ROY E. SANTANA
By direction

Distribution:
Ms. Elizabeth Robinson Anello
Mr. Steven Bachofer
Mr. Steve Gallo
Mr. Edward Gardner
Ms. Susan Gladstone
Mr. Stanley Heller
Mr. David Kory
Ms. Sylvia Kotecki
Ms. Colleen Monahan
Ms. Nicole Moutoux
Mr. Richard Pieper

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Subj: RESTORATION ADVISORY BOARD (RAB): MINUTES OF 18 SEPTEMBER 1997 MEETING

Mr. James Pinasco
Mr. Richard Purdue
Ms. Tatiana Roodkowsky
Ms. Catie Roy
Mr. Roy Santana
Mr. Thomas Shirley
Mr. Larry Steinwandt
Mr. Gene Sylls
Mr. Marcus O'Connell
Mr. Scott Etzel

Blind copy to (w/encl):
Tetra Tech EMI (Attn.: John Bosche)
10A, 1012, 10121, 10122
Information repository: (3 copies)
Chron, Mailroom RF
Activity file: NWS Concord

DRAFT AGENDA
NAVAL WEAPONS STATION CONCORD
RESTORATION ADVISORY BOARD MEETING

Thursday, October 16, 1997

7:00 - 9:00 p.m.
Ambrose Community Center
3105 Willow Pass Road
Bay Point, California

7:00 - 7:05	Welcome and Introduction
7:05 - 7:10	Community Co-Chair's Report - Steve Gallo
7:10 - 7:15	Approval of Restoration Advisory Board (RAB) Meeting Minutes
7:15 - 7:45	Response to RAB Comments on the Tidal Influence Study and Groundwater Monitoring Technical Memorandum Report, Litigation Area - Tetra Tech EM Inc.
7:45 - 7:55	Discussion of Future Restoration Advisory Board (RAB) Meetings - Steve Gallo • Locations • Day of the Month Availability
7:55 - 8:05	Break
8:05 - 8:20	Status and Update of Ongoing Work - Navy and Tetra Tech EM Inc.
8:20 - 8:35	Future Agenda Topics and Frequency of Meetings - RAB Members
8:35 - 8:40	Public comments
8:40	Adjournment

NAVAL WEAPONS STATION CONCORD
RESTORATION ADVISORY BOARD

DRAFT MEETING MINUTES

Ambrose Community Center
3105 Willow Pass Road
Bay Point, California

Thursday, 18 September 1997

I. Welcome and Introduction

The Naval Weapons Station (NWS) Concord Restoration Advisory Board (RAB) met on Thursday, 18 September 1997, at the Ambrose Community Center in Bay Point, California. Mr. Steve Gallo, the RAB Community Co-Chair, opened the meeting at 7:15 p.m. These minutes summarize topics discussed during the RAB meeting. A copy of the meeting agenda is provided as Attachment A, the attendance list is provided as Attachment B and the meeting handouts are provided as Attachment C.

II. Community Co-Chair's Report

A. Steve Gallo welcomed meeting attendees and introduced himself as the new Community Co-Chair. Mr. Gallo explained responsibilities of the RAB are to: 1) provide advice to the Navy on environmental restoration, 2) encourage community involvement, and 3) identify requirements in reports, and priorities in clean up and applicable restorative activities.

B. Mr. Gallo noted members excusing themselves from tonight's meeting were: Colleen Monahan, Tatiana Roodkowsky, and Marcus O'Connell.

In a previous discussion with Colleen Monahan, Mr. Gallo shared that she noted no RAB meeting announcement in the "Community Calendar" section of the *Contra Costa Times.* Meeting attendees questioned whether the announcement needed intermittent renewing. Gene Sylls volunteered to call and ask the *Contra Costa Times* to continue to announce RAB meeting times and places.

C. Mr. Gallo relayed to the RAB that Marcus O'Connell had offered to share information on forming a National Restoration Advisory Board. A website hosted by CAREER/PRO provides additional details.

D. Mr. Gallo requested RAB letterhead. Navy Co-Chair Richard Pieper recalled that John Rosengard may have it electronically and suggested the RAB check with either him or Dave Kory. Edward Gardner suggested all RAB comments be submitted on RAB letterhead. Mr. Gallo added that comments may vary in nature, and the RAB need not reach consensus. Mr. Pieper cautioned that use of the RAB letterhead does not represent Navy nor other agencies opinions or positions.

E. Mr. Gallo announced that John Rosengard notified him verbally of his resignation. Sylvia Kotecki thought it appropriate to express thanks to Mr. Rosengard for his service on the RAB. It was noted that a station plaque and thank-you letter were sent to a previous Community Co-Chair; Mr. Pieper volunteered to do the same for Mr. Rosengard. Sylvia Kotecki offered to draft a separate thank-you letter from the RAB.

III. Approval of Restoration Advisory Board Minutes

Gene Sylls moved to accept the minutes as written. The motion was seconded by Sylvia Kotecki and approved by the board.

IV. Landfill Feasibility Study

John Bosche, Tetra Tech EM Inc. (formerly PRC), introduced subconsultant Brian Keating with Levine•Fricke•Recon. Mr. Bosche explained that PRC had been acquired by Tetra Tech EM Inc., and would now be referred to under this name.

Mr. Keating summarized the Draft Tidal Area Landfill Feasibility Study and made copies of the document available for RAB review. The Tidal Area Landfill (Site 1) is located approximately 2000 feet south of Suisun Bay next to the R Area Disposal Site (Site 2). The area immediately adjacent to the landfill is identified as wetlands, although the landfill itself is not considered to be a wetland.

Between 1944-1979 the Navy disposed of approximately 33,000 tons of municipal refuse, shipboard waste, and inert munitions into the Tidal Area Landfill. Geological composition of the site consists mainly of fill material overlying bay mud. The groundwater in the vicinity is nonpotable due to high concentrations of total dissolved solids and salt water. The wetland area west of the landfill is considered a sink for seasonal fluctuations in tidal flow, and during rainy seasons there is standing water immediately adjacent to the landfill. The groundwater mounds and flows westerly towards the R Area Disposal Site. Groundwater flow pattern east and northeast of the landfill has yet to be established.

Investigations that preceded the Feasibility Study are the Remedial Investigation (RI), Site Investigation, and Confirmation Study. The RI contains results of 24 surface and subsurface soil

samples taken along the perimeter of the landfill. Soil samples revealed three metals (arsenic, beryllium, and lead) detected above residential preliminary remediation goals and estimated background levels. One polyaromatic hydrocarbon was also detected. Results did not detect any groundwater leachate. Groundwater samples collected during the Site Investigation (SI) and Confirmation Study (CS) indicated no organics, but potential metals of concern. Due to the detection of metals, additional groundwater sampling will occur in 1997 to verify results.

A Human Health Risk Assessment focusing on soil exposure routes was produced for the Tidal Area Landfill. Beryllium and arsenic levels were found to exceed the Hazard Index standard for the residential scenario; arsenic was found to also exceed the industrial scenario standard. An ecological risk assessment was not performed for the Tidal Area Landfill, but was performed for the R Area Disposal Site immediately adjacent to the landfill. Results from R Area indicated no immediate ecological risk to receptors. An ecological survey may be undertaken in the near future for the Tidal Area Landfill.

Based on results of the previous studies, alternatives were developed. A presumptive remedy approach was agreed upon by the Navy and regulatory agencies. Adopted guidance provided by U.S.EPA calls for: 1) containment, 2) monitoring of groundwater, 3) monitoring of landfill gas, and 4) monitoring of landfill leachate. Remedial Action Objectives (RAOs) were developed that incorporates the guidance and combines it with established primary exposure pathways. The only exposure pathway of concern is ingestion/inhalation of compounds from surface and subsurface soils. Exposure pathways were not evaluated for leachate or landfill gas, as there is no detectable leachate formation and groundwater is nonpotable; landfill gas emission rates were also found to be very low.

RAOs are intended to: 1) protect human health and environment from contact with landfill contamination, 2) minimize exposure pathways, infiltration, and contaminant migration, 3) protect receptors against leachate migration into groundwater and surface water, and 4) protect receptors from potential off-site subsurface gas migration. Landfill capping was determined to be in agreement with RAOs.

Methods of addressing landfill cleanup were developed based on RAOs. Remedial options or alternatives included: 1) groundwater monitoring, 2) institutional controls consisting of deed restrictions, 3) fencing, 4) site grading and containment, 5) vegetation, 6) a native soil cap, or 7) a multilayer cap.

All legal applicable or relevant and appropriate requirements (ARARs) were considered in developing the preferred alternatives. These alternatives are: 1) no action, which includes groundwater monitoring, 2) constructing a native soil cap, an engineered alternative, or 3) constructing a multilayer cap, a prescribed alternative.

A native soil cap is constructed by placing a biotic barrier (gravel) on the surface of the refuse to inhibit root infiltration and burrowing animals. Three feet of loam-type soil from surrounding

areas is deposited on top, and the area revegetated with native grasses. The vegetation enhances the biotic movement of water out of the caps and into the plants themselves and protects the cap against soil erosion. Fencing is installed and access roads added for monitoring. Wetlands will be protected by consolidating the landfill area and using the newly available land for road construction instead of constructing roads on the surrounding wetland area.

In comparison, a multilayer cap is constructed using 3 feet of foundation material placed directly on top of the refuse. Soil is placed on top of the foundation material at approximately a six foot depth, followed by a low permeable, geosynthetic clay liner, as prescribed by Title 23. Next the area is covered with a drainage/biotic barrier. Native vegetation will be used to revegetate the surface.

Criteria used to distinguish a final solution are: 1) quantity of precipitation that infiltrates the cap, 2) potential of refuse to settle further into the water table, and 3) seismic and slope stability.

The Comprehensive Environmental Response Compensation and Liability Act (CERCLA) provides nine evaluation criteria to help judge acceptability of alternatives. The criteria are: 1) overall protection of human health and the environment, 2) compliance with ARARs, 3) long-term effectiveness, 4) reduction of toxicity, mobility, and volume, 5) short-term effectiveness, 6) implementability, 7) cost, 8) state acceptance, and 9) community acceptance. Using these criteria, the native soil cap was judged to be the most acceptable remedial alternative.

Construction of the native soil cap will cost approximately $3.3 million compared to the multilayer soil cap construction which will cost approximately $5.2 million. These costs include the long term monitoring, operation, and maintenance of the caps.

The native soil cap was chosen as the preferred alternative because it was found to be most effective in the short and long term and to cost the least. The preferred alternative will be identified in the next document, the Proposed Plan/Record of Decision (Site 1), which will be open to public comment.

Mr. Bosche noted that although the native soil cap repels 85% of precipitation (as opposed to 99.8% using a multilayer cap), three feet of loam weighs less than six feet and decreases chances of refuse from further settling into the water table. He added the native soil cap is less expensive and more practical because bay mud has proven effective in preventing leachate formation. Mr. Keating stated that loam material used in the native soil cap may be substituted with Concord native clay soil which may significantly increase impermeability. Mr. Keating reiterated that the only exposure route of concern is inhalation/ingestion of soil, and capping remedies this concern. He also noted the lower profile of the native soil cap has greater stability in a seismic event.

Soft areas and voids in the landfill were noted and discussed. Mr. Pieper stated the importance of adequate compaction of the surface soil to ensure long term effectiveness of the cap and to minimize maintenance.

Mr. Gardner asked about the nature and source of beryllium. Mr. Keating replied it was a common metal. Mr. Bosche added that elevated levels of beryllium are being encountered at other sites, so the procedure for calculating background levels for beryllium may have to be revisited.

Mr. Gardner brought the RAB's attention to a grant given to the State Department of Fish and Game to build levees on Grizzly Island for waterfowl protection. The goal is to provide water to attract the birds into a protected area.

Mr. Gardner thought the Concord Fault Line runs adjacent to the landfill and wondered whether that was a factored into the selection of the preferred alternative. Mr. Keating replied that it was known and considered when determining the pseudostatic calculations for seismic stability. Mr. Bosche added that calculations may not factor in all the realistic dynamics of an earthquake, but that pseudostatic analysis is acceptable in the engineering community.

Steve Bachofer wondered if it was possible to develop a hybrid between the two alternatives that would reduce permeability. Mr. Keating noted that containment of the soil, not prevention of infiltration, is the primary goal. He also reiterated that it is likely that native clay soil will replace the loam and increase impermeability.

V. Restoration Advisory Board (RAB) Comments on the Tidal Influence Study and Groundwater Monitoring Technical Memorandum Report, Litigation Area

Mr. Gallo compiled a list of RAB comments on the Tidal Influence Study and Groundwater Monitoring Technical Memorandum Report, Litigation Area which was distributed to RAB members. Mr. Gallo highlighted concerns of one RAB member who disagreed with the report's conclusion to terminate groundwater monitoring, expressing concern that contamination may be reaching the river. Mr. Gallo noted the report documented decreased metal concentrations in areas where soil had been replaced, but provided an inadequate explanation for this phenomenon.

Mr. Gallo stated the report was thorough in terms of conductivity, isotopes, and metal concentrations. He also was impressed that conclusions were based on several different factors.

Mr. Pieper called for clarification of Question #8 which may be better stated, "Why did the wells stop where they did and not go deeper?"

Mr. Bosche asked the rationale for Question #9. Mr. Gardner clarified that seasonal effects are encountered with monitoring, and effects may be assessed by sampling 2-3 times a year. Mr. Gardner reminded attendees that he mentioned some time ago he felt it prudent to monitor water flowing both onto and off of the base to determine what compounds are moving in the water. He asked if the Contra Costa Water District requires monitoring. In response, it was noted that surface water will continue to be monitored as required in the Record of Decision. If a new chemical is detected, the need for groundwater sampling can be re-evaluated at that time. Mr.

Pieper added that surface water sampling taken in any season will reveal whether contaminants are moving. He reiterated that geological conditions provide relatively little communication between surface water and groundwater.

VI. Site Management Plan Schedule

Roy Santana, Navy Remedial Project Manager, provided document schedules for CERCLA sites at NWS Concord. The schedule does not contain all NWS Concord environmental activities, but does include all non-operational sites with suspected past hazardous releases. Noted on the handout are funding stages, as well as submittal and review dates. The schedule addresses each individual site from investigation to closure.

Mr. Santana pointed out some of the remediation activity documents that are in various stages of development. He summarized their status as follows:

- Inland Area Sites 13, 17, 22, 24A, and 27 — Remedial Investigation/Qualitative Ecological Assessment (RI/QEA) Draft Final Report being finalized, for early October submittal.
- Site 13 — Cleanup of napalm area at site about to be done, then draft summary report will be prepared.
- Site 22--Phase II RI fieldwork (quarterly groundwater sampling) underway.
- Sites 13 and 17 — Draft Proposed Plan (for no further action) to begin shortly.
- Tidal Area Sites 1, 2, 9, and 11 — Navy responding to RI Report comments.
- Tidal Area Sites 1, 2, 9, and 11 — Groundwater Investigation Workplan undergoing agency and RAB review.
- Site 1 (landfill) — Feasibility Study (FS) was submitted this week for review.
- Taylor Boulevard Bridge Debris Area — Draft Engineering Evaluation/Cost Analysis (EE/CA) documentation for a removal action to begin shortly.

He pointed out that the above status may differ slightly from the schedule provided because the schedule was prepared 2 months ago and it is a dynamic document that changes as conditions dictate. Nevertheless the schedule can provide the RAB a general idea of what stage in the IRP process each site is at.

Mr. Santana explained that the Installation Restoration Program (IRP) has established phases for performing environmental remediation activities. Initially a **Preliminary Assessment** is conducted that incorporates interviews from past base employees and research of old records to construct a comprehensive history of past environmental activities and findings. Then sampling is taken in areas of suspected contamination and findings/recommendations are documented in a **Site Investigation**. As the process rules out certain areas, those areas warranting further sampling and investigation are addressed in **Remedial Investigations.** The information obtained is used to fully characterize the nature and extent of contamination at the site and evaluate risk. Those sites still showing a significant risk to the environment proceed further to a **Feasibility Study** where

various cleanup alternatives are developed and compared. A remedy is then selected and the basis for the selection is addressed in a **Proposed Plan**. Public comment is solicited at this stage. A **Record** of **Decision** follows, which fully documents the selected remedy and rationale for selection. **Remedial Design** and **Remedial Action** follow, which are the design and construction phases respectively. If contamination is left in place (such as in a capped landfill or groundwater treatment system) **Long Term Monitoring** is required after construction. Mr. Santana noted that **Interim Removal Actions** can occur at anytime during the above phases, to remove most of an evident source of contamination or mitigate an immediate threat; and that generally the phases above continue as scheduled, but sometimes the **removal** may comprise the final cleanup.

The NWS Concord document schedule follows set review times and response periods for each CERCLA document. Draft Remedial Investigation (RI) and Feasibility Study (FS) Reports undergo 60 days of agency and RAB review/commentary. The Navy then responds to comments in 60 days, and the agencies review Navy responses for 30 days. At the end of an additional 30 days a Draft Final document is issued which becomes the Final document in 30 days.

Draft Proposed Plans also undergo 60 days of agency and RAB review/commentary; the Navy has 30 days to respond, and 30 days later a Draft Final Proposed Plan is issued. The agencies have 30 days to review the Draft Final Proposed Plan and submit comments. The Navy has an additional 30 days to incorporate and respond to comments, and then in 30 additional days, a Final Proposed Plan is made available for public comment. Public comment periods on Final Proposed Plans last for 30 days, and all Navy responses to comments are documented in a Responsiveness Summary found in the Draft Final Record of Decision (ROD).

Draft Final RODs are issued after closure of the public comment period. Agencies and the RAB may review and comment on the Draft Final ROD for 30 days; the Navy is given 30 days to respond to comments, after which in 30 additional days, a Final ROD is submitted. The Final ROD is signed by all pertinent parties after a final 30 day period. For planned Proposed Plan/ROD preparation dates, the RAB members can refer to the schedule provided. It was noted that 3 sites (Sites 13, 17, and 27) are programmed for No Further Action RODs; and that no further action would be the documented recommendation for these sites.

NWS Concord has scheduled Removal Actions (RA) for sites with localized contamination, to reduce the response time. The agencies and RAB are invited to review and comment on Engineering Evaluations/Cost Analysis (EE/CAs) documentation that precede the actual removal actions. EE/CAs contain many of the same elements as Feasibility Studies in the CERCLA process. The schedule shows RAs proposed for sites 27, 11 (Wood Hogger Site), and the Taylor Boulevard Bridge Debris Area.

Mr. Santana and Mr. Bosche mentioned that the Navy and the agencies have verbally agreed to remove Site 27 (Pesticide Area) from the RA list, as revised risk calculations show contamination concentrations low enough to pose no significant risk to the environment. Mr. Pieper noted that the RAB also recommended no further action on this site. As per recommendations, Site 27 is

expected to proceed directly to a No Further Action ROD, without a removal action.

Mr. Santana encouraged RAB members to look at the schedule and to get familiar with where we are in the various IRP phases, and to note that comment periods are provided at designated times. The schedule was provided to help the RAB generate meeting agendas and topics, and to enable the RAB to set aside review and comment periods at appropriate times, and to monitor the progress of the IRP program.

VIII. Discussion of Future RAB Meeting Locations and Dates

Mr. Gallo stated that changing meeting locations may also involve changing meeting dates. He will assess the availability of RAB members to meet on other days. He mentioned the Concord Police Station is occupied the third Thursday of every month. Top choices for meeting places are the Concord Police Station and the Mt. Diablo Hospital meeting rooms. Mr. Pieper requested costs be determined, as well as whether the facility may be scheduled several months in advance. He noted that the Water District does not allow scheduling their facility until the first of every month.

The Navy agreed to address RAB comments on the Tidal Influence Study and Groundwater Monitoring Technical Memorandum Report, Litigation Area at the next meeting.

IX. Public comments

Ms. Kotecki requested a copy of the list of tour participants to help ascertain whether they are interested in participating on the RAB. Mr. Pieper expressed concern about giving out personal addresses and noted participants did have an opportunity for inclusion on the NWS Concord mailing list.

Ms. Kotecki asked about the availability of RAB informational displays previously developed by Tetra Tech EMI, and suggested they be placed in malls and libraries for community outreach. The displays consisted of area maps, a description of the RAB and functions, and a picture of a Salt Marsh Harvest Mouse and other wildlife. Mr. Pieper believed Tetra Tech EMI still had them and John Boshe will talk to Kathy Walsh to see if they are still available.

Roy Santana introduced Clint Fisher as the other RPM for Concord. He will inherit the Inland and Tidal Area sites formerly managed by Ronald Yee.

X. Adjournment

Mr. Gallo adjourned the meeting at 9:20 p.m.

The next meeting is scheduled for Thursday, October 16, 1997, 7:00 p.m., at the Ambrose Community Center, Bay Point, California.

A copy of these meeting minutes will be made available for public review at the Information Repository located at the Main Branch of the Contra Costa County Library in Pleasant Hill, CA.

ATTACHMENT A

Agenda
NWS Concord
Restoration Advisory Board Meeting
Thursday, September 18, 1997

DRAFT AGENDA
NAVAL WEAPONS STATION CONCORD
RESTORATION ADVISORY BOARD MEETING

Thursday, September 18, 1997

7:00 - 9:00 p.m.
Ambrose Community Center
3105 Willow Pass Road
Bay Point, California

7:00 - 7:05	Welcome and Introduction
7:05 - 7:10	Community Co-Chair's Report - Steve Gallo
7:10 - 7:15	Approval of Restoration Advisory Board (RAB) Meeting Minutes
7:15 - 7:45	Landfill Feasibility Study - Levine Fricke
7:45 - 8:00	Restoration Advisory Board (RAB) Comments on the Tidal Influence Study and Groundwater Monitoring Technical Memorandum Report, Litigation Area
8:00 - 8:10	Break
8:10 - 8:30	Site Management Plan Schedule - Roy Santana
8:30 - 8:45	Discussion of Future Restoration Advisory Board (RAB) Meeting Locations and Dates
8:45 - 8:55	Future Meeting and Agenda Topics
8:55 - 9:00	Public comments
9:00	Adjournment

ATTACHMENT B

Attendance List
NWS Concord
Restoration Advisory Board Meeting
Thursday, September 18, 1997

Naval Weapons Station, Concord
Restoration Advisory Board Meeting Attendance
Date: Sept 18, 1997

RAB MEMBER	***Signature***
Steven Bachofer	Steven Bachofer
Steve Gallo	Steven Gallo
Edward Gardner	Edward Gardner
Sylvia Kotecki	Sylvia Kotecki
Colleen Monahan	
Richard Purdue	
Tatiana Roodkowsky	
Thomas Shirley	
Larry Steinwandt	
Gene Sylls	Gene Sylls
NAVY REPRESENTATIVES	
Richard Pieper (NWS Concord)	R Pieper
Roy Santana (EFA West) here	Roy Santana
name key CLINT FISHER (EFA WEST)	Clint Fisher
John Bosche (T+EMI)	John Bosche
REGULATORY AGENCIES	
Susan Gladstone (RWQCB)	
Nicole Moutoux (U.S. EPA)	
James Pinasco (DTSC)	

Naval Weapons Station, Concord
Restoration Advisory Board Meeting Attendance
Date: _____

	Signature
CONSULTANTS	
Kathy Walsh (PRC, EMI)	
Sandra Lunceford (GPI) Here	
Barry Gutierrez (GPI)	BMG
Brian Kerting (LFR)	Brian Kerting

Naval Weapons Station, Concord
Restoration Advisory Board Meeting Attendance
Date: _____

PUBLIC/GUESTS - ***Name***	***Address and Phone***
STAN HELLER	524 Orchid Ct. 707-746-5889 Benicia, CA 94510

ATTACHMENT C

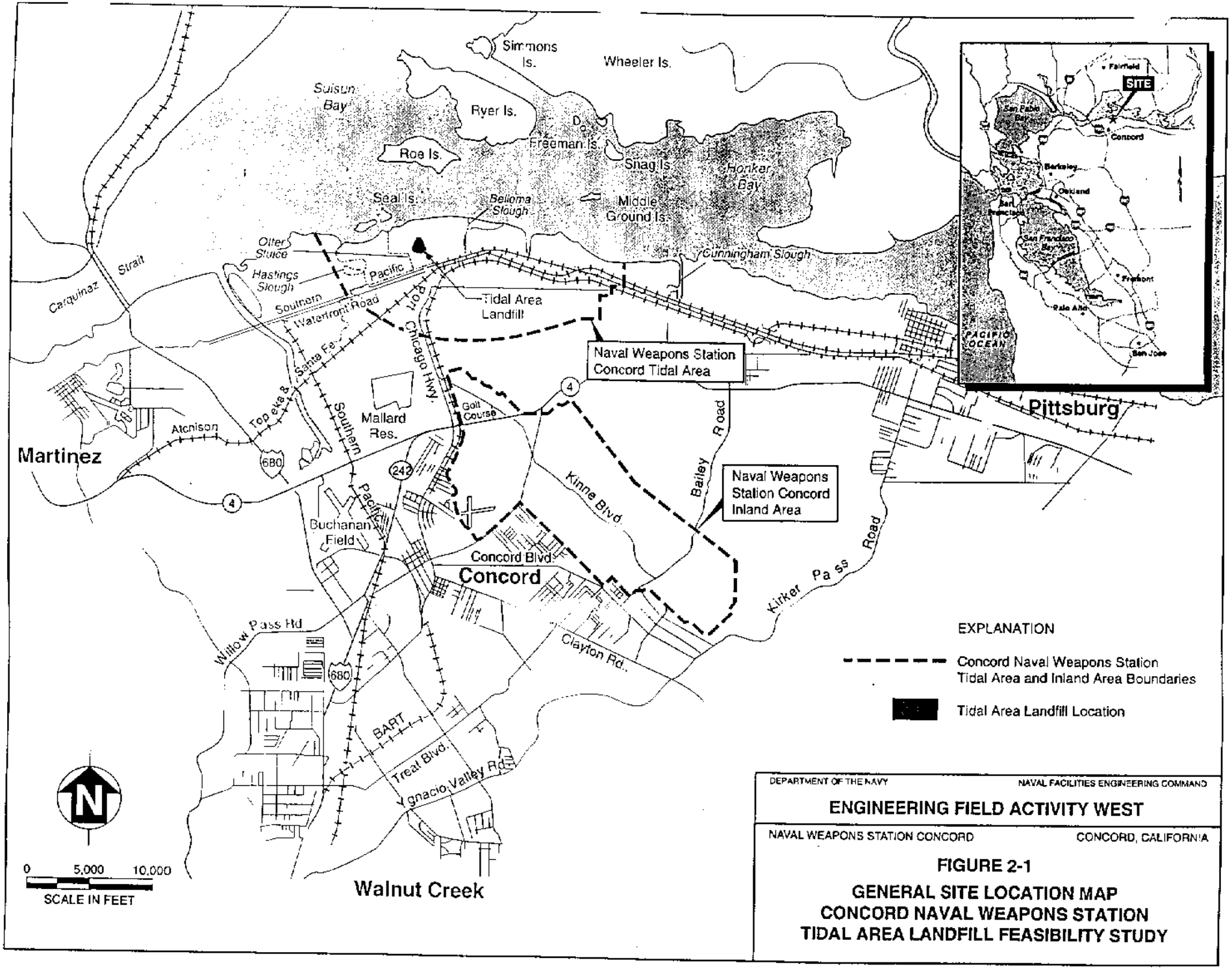
Presentation Materials
NWS Concord
Restoration Advisory Board Meeting
Thursday, September 18, 1997

- Tidal Area Landfill Feasibility Study WPNSTA Concord
- RAB Member Comments, on the Tidal Influence Study and Groundwater Monitoring Technical Memorandum Report, Litigation Area
- IR Program Phases
- Site Management Plan Schedule (not included here)

TIDAL AREA LANDFILL FEASIBILITY STUDY WPNSTA CONCORD

September 18, 1997

Levine·Fricke·Recon
ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS



DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND

ENGINEERING FIELD ACTIVITY WEST

NAVAL WEAPONS STATION CONCORD — CONCORD, CALIFORNIA

FIGURE 2-1

GENERAL SITE LOCATION MAP
CONCORD NAVAL WEAPONS STATION
TIDAL AREA LANDFILL FEASIBILITY STUDY

Summary of
INVESTIGATION ACTIVITIES

- 24 surface and subsurface soil samples along perimeter during RI
- PAH, arsenic, beryllium, and lead detected in soil > PRGs
- Groundwater samples from SI and CS indicate no organics; potential metals of concern
- Additional groundwater sampling scheduled to confirm SI and CS results in 1997

Results of
RISK ASSESSMENT

- As and Be exceeded 10^{-6} and the HI under residential scenario
- As exceeded 10^{-6} under industrial scenario
- Eco-Risk at adjacent R Area Disposal site identified no immediate risk to ecological receptors

CONCORD NAVAL WEAPONS STATION
TIDAL AREA LANDFILL - FEASIBILITY STUDY
REMEDIAL ACTION OBJECTIVES

Media of Concern	Primary Exposure Pathways	RAO
Landfill Refuse	Ingestion and inhalation of compounds in surface and subsurface soils	Protect human health and environmental receptors from contact with landfill contamination by minimizing exposure pathways, infiltration and contaminant migration
Groundwater & Leachate	Exposure pathway not evaluated since groundwater is not a suitable drinking source and since there is no evidence of leachate formation or migration	Protect surface water and environmental receptors from exposure resulting from potential leachate migration into groundwater and subsequently into surface water
Landfill Gas	Exposure pathway not evaluated. Calculated NMOC emission rates are very low. Methane gas formation expected to be low based on field observations and the age, type of refuse and size of landfill	Protect human health and the environment from potential off-site subsurface gas migration

Notes:

NMOC Non-Methane Organic Compound
RAO Remedial Action Objective

GENERAL ASSUMPTIONS

Alternatives Development

- Gas monitoring exemption (27CCR Section 20918)
- Groundwater monitoring (27CCR Section 20390)
- WQPS developed during groundwater monitoring

ALTERNATIVES

ALTERNATIVE 1 No Action, retained to satisfy NCP

ALTERNATIVE 2 Native Soil Cap, developed as engineered alternative

ALTERNATIVE 3 Multilayer Cap, developed as prescribed alternative (23CCR Section 2581)

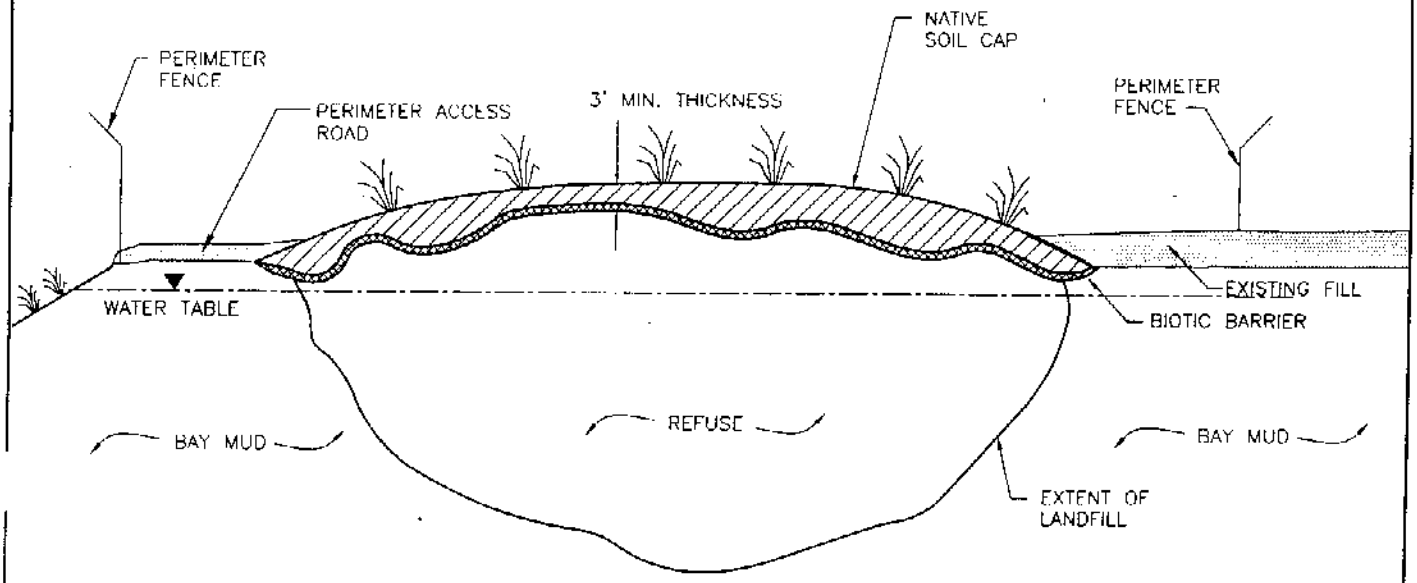
TABLE 4-1
DEVELOPMENT OF REMEDIAL ALTERNATIVES
TIDAL AREA LANDFILL FEASIBILITY STUDY
CONCORD NAVAL WEAPONS STATION
CONCORD, CALIFORNIA

Process Options	Remedial Alternatives		
	1	2	3
Perimeter Groundwater Monitoring	X	X	X
Notation to IMP		X	X
Fencing, Signs		X	X
Site Grading		X	X
Revegetation		X	X
Native Soil Cap		X	
Multilayer Cap			X

Notes:

IMP Installation Master Plan

X Signifies a process option has been included in the designated Alternative.



Not to Scale

LEGEND

NATIVE SOIL AND VEGETATION LAYER

BIOTIC BARRIER

VEGETATION

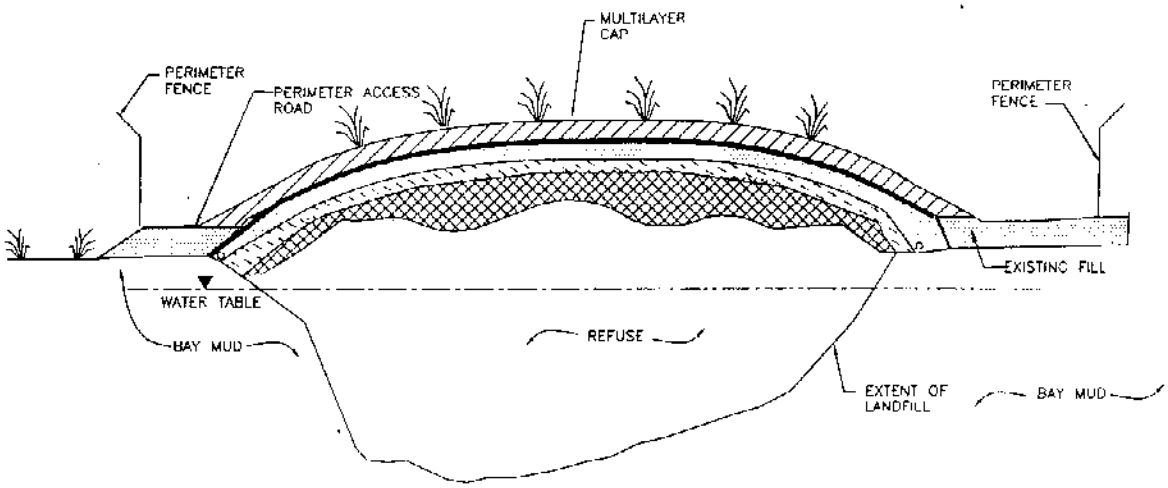
DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND

ENGINEERING FIELD ACTIVITY WEST

CONCORD NAVAL WEAPONS STATION — CONCORD, CALIFORNIA

FIGURE 4-1

CONCEPTUAL DIAGRAM OF ALTERNATIVE 2
TIDAL AREA LANDFILL FEASIBILITY STUDY



LEGEND

- VEGETATION LAYER
- DRAINAGE LAYER/BIOTIC BARRIER
- BARRIER LAYER (GEOSYNTHETIC CLAY LINER)
- FOUNDATION LAYER
- VEGETATION
- FILTER FABRIC
- DRAINAGE LAYER WATER COLLECTION PIPELINE

Not to Scale

DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND

ENGINEERING FIELD ACTIVITY WEST

CONCORD NAVAL WEAPONS STATION — CONCORD, CALIFORNIA

FIGURE 4-2

CONCEPTUAL DIAGRAM OF ALTERNATIVE 3
TIDAL AREA LANDFILL FEASIBILITY STUDY

ANALYSIS

Preliminary analyses performed during the FS:

- Infiltration Evaluation (HELP Model)
- Settlement Analysis
- Seismic and Slope Stability Evaluations

SUMMARY OF INFILTRATION MODELING RESULTS

Tidal Area Landfill FS, Concord WPNSTA

TOTAL ANNUAL INFILTRATION THROUGH CAP			
Precipitation Scenario	**Alternative 2: Native Soil Cap**	**Alternative 3: Multilayer Cap**	**Units**
20-year average	3.0	0.037	inches/year
	15.80	0.19	% precipitation
5-year average for a 100-year storm event in January	4.9	0.052	inches/year
	21.29	0.23	% precipitation
5-year average for a 100-year storm event in July	4.43	0.047	inches/year
	19.71	0.21	% precipitation

SUMMARY OF SETTLEMENT ANALYSES RESULTS

Tidal Area Landfill FS, Concord WPNSTA

Alternative	Settlement of Clay Layer Under TAL (inches)		
	Maximum	Minimum	Average
Alternative 2: Native Soil Cap	8.9	2.2	6.2
Alternative 3: Multilayer Cap	15.0	3.5	9.1

TABLE 6-1
COMPARISON OF REMEDIAL ALTERNATIVES
TIDAL AREA LANDFILL FEASIBILITY STUDY
CONCORD NAVAL WEAPONS STATION
CONCORD, CALIFORNIA

Evaluation Criteria	TIDAL AREA LANDFILL		
	Alternative 1 No Action	Alternative 2 Native Soil Cap	Alternative 3 Multilayer Cap
Overall Protection of Human Health and the Environment	5	1	1
Compliance with ARARs	5	1	1
Long-Term Effectiveness	5	1	2
Reduction of Toxicity, Mobility, Volume	5	3	3
Short-Term Effectiveness	5	1	3
Implementability	1	3	5
Cost	1	3	5
State Acceptance (estimated)	5	2	2
Community Acceptance (estimated)	5	2	2
Sum	**37**	**17**	**24**
Overall Rating	**3**	**1**	**2**

Ranking Scale:

1 Meets Criteria Best

5 Meets Criteria Least

ARAR Applicable or Relevant and Appropriate Requirement

TABLE 6-2
COST ESTIMATE SUMMARY FOR SELECTED ALTERNATIVES
TIDAL AREA LANDFILL FEASIBILITY STUDY
CONCORD NAVAL WEAPONS STATION
CONCORD, CALIFORNIA

Alternative	Capital Cost	Annual O&M Cost (1)	Total NPV Cost (2)
1 - No Action (3)	$18,000	$66,700	$430,000
2 - Native Soil Cap	$2,876,000	$69,000	$3,303,000
3 - Multilayer Soil Cap	$4,758,000	$69,000	$5,185,000

Notes:

(1) Annual O&M cost during the first five years. Annual O&M cost assumes quarterly groundwater monitoring for the first 5 years and annual monitoring for the next 25 years.

(2) Total NPV cost includes capital costs and NPV of annual O&M cost. Present value calculated based on a 7 percent discount rate.

(3) The "No Action" alternative includes costs for groundwater monitoring.

NPV Net present value

O&M Operation and Maintenance

CONCLUSIONS

- ALTERNATIVE 1 not protective; will not comply with ARARs
- ALTERNATIVE 2 most effective in the short and long term
- ALTERNATIVE 2 costs less for same level of protection
- ALTERNATIVE 2 preferred

September 18, 1997

Mr. Roy Santana
Project Manager
Department of the Navy
Engineering Field Activity, West
Naval Facilities Engineering Command
900 Commordore, Drive
San Bruno, CA 94066-5006

Suject: Review of Technical Memorandum, Tidal Influence Study and Post Remediation Groundwater Monitoring, Naval Weapons Station Concord, July 21, 1997

Dear Mr. Santana;

Following are comments concerning the Technical Memorandum from some members of the Restoration Advisory Board(RAB) for the Concord Naval Weapons Station. The comments represent individual member views and reflect diversity of our community.

1. The report title needs to include the area being reviewed. In this case the Litigation Area.
2. The study lacked comparison to background levels of sites outside the litigation area.
3. Page 51, Section 6.0. The word "removing" should be changed to "removal" in the 9th paragraph.
4. Page 17, section 3.1. There is a difference in the well upgrade table and the text in the preceding paragraph about what upgrades were made at wells, such as well 2AG08 is cited as upgraded but not listed in the table.
5. Several locations in the report (i.e., page 24, Section 3.4) mention that the post remediation analytical results in the area that had contaminated soil removed show a substantial reduction in metals concentration. The author does not suggest an explanation of why this drop occurred nor whether it implies that metals are traveling away from the location.
6. Information about areas of low and high conductivity are discussed but not tied to the source of this data.
7. It was good that a number of methods were examined to investigate the questions rather than relying on just one or two for a basis for the conclusions.
8. Why did well depths not extend to "base soil"?
9. Doing added ground water monitoring, possible periodically, should be done.

The report was brief and to the point, yet provided good explanations of process. We encourage the writer(s) to make the reports readable to the broad community.

Should you have any comments or questions that members of the RAB or I can clarify, please call me at (510) 427-3450. We are glad to be able to provide community input into the restoration process.

Steve Gallo

Steve Gallo
Community Co-Chair, Restoration Advisory Board(RAB) for the Concord Naval Weapons Station

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IR PROGRAM PHASES

- IR PROGRAM PHASES
  - PA Preliminary Assessment
  - SI Site investigation
  - RI Remedial Investigation
  - FS Feasability Study
  - PP/ROD Proposed Plan/Record of Decision
  - RD Remedial Design
  - RA Remedial Action
  - LTM/LTO Long term monitoring/Long term operations
  - IRA Interim removal action