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9 April 1998

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 19 MARCH 1998 RAB MEETING, NWS CONCORD
Encls: (1) Naval Weapons Station Concord Restoration Advisory Board (RAB), Draft Meeting Minutes -- Thursday, 19 March 1998

1. Draft minutes of the 19 March 1998 Naval Weapons Station (NWS) Concord Restoration Advisory Board (RAB) meeting 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. The next RAB meeting is scheduled for 7:00 p.m. on Thursday, 21 May 1998, at the Clyde Community Center. Please note the new location, and that there will be no RAB meeting in April.
3. An agenda, and confirmation of the new location, will be mailed approximately 2 weeks before the May meeting.
4. If you have any questions regarding this correspondence, please contact me at (650) 244-2523; Mr. Steve Gallo, RAB Community Co-chair, at (510) 427-3450; or Mr. Stan Heller, NWS Concord Co-chair, at (510) 246-5672.

ROY E. SANTANA
Remedial Project Manager
By direction

Distribution:
Ms. Elizabeth Robinson Anello
Mr. Steven Bachofer
Mr. Scott Etzel
Mr. Steve Gallo
Mr. Edward Gardner
Ms. Susan Gladstone
Mr. Stanley Heller
Ms. Dee Kilcoyne
Mr. David Kory
Ms. Sylvia Kotecki

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MEETING, NWS CONCORD

Ms. Nicole Moutoux
Mr. James Pinasco
Mr. Richard Purduc
Ms. Catie Roy
Mr. Roy Santana
Mr. Thomas Shirley
Mr. Larry Steinwandt
Mr. Genc Sylls
Mr. Steve Volk

Blind copy to (w/encl):
TiEMI (Attn: John Bosche)
10121, 10122, 1032
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**NAVAL WEAPONS STATIONS CONCORD
RESTORATION ADVISORY BOARD**

DRAFT MEETING MINUTES

**Naval Weapons Stations Concord, Building AI-2
Badge and Pass Office
Concord, California**

Thursday, 19 March 1998

I. Welcome and Introduction

The Naval Weapons Stations (NWS) Concord Restoration Advisory Board (RAB) met on Thursday, 19 March 1998 at the NWS Concord Badge and Pass Office, Concord, California. Steve Gallo, Community Co-Chair, welcomed attendees and initiated introductions. These minutes summarize topics discussed during the RAB meeting. Attachment A contains the agenda and Attachment B contains the attendance sheet.

II. Community Co-Chair's Report

- A. Mr. Gallo explained that the RAB is comprised of community members, regulatory agencies, the Navy, and consultants working together to understand and respond to environmental cleanup requirements of NWS Concord. RAB members agree to disseminate information to the community, gather responses, and participate in the environmental decision making process. Mr. Gallo encouraged participation from all interested parties.
- B. Mr. Gallo announced that conflicts have arisen with use of the meeting space at the Mt. Diablo Medical Center and suggested alternatively that the RAB meet at the Clyde Community Center. Further information will be made available to the RAB about the use of this new location.
- C. Mr. Gallo relayed that Tatiana Roodkowsky has accepted a position in Virginia and has resigned from the RAB.
- D. Mr. Gallo stated that last month's working session was very beneficial in promoting understanding about the landfill site report, monitoring report, litigation area, and stream diversion.

III. Continuation of Responses to RAB comments on the Tidal Area Landfill Feasibility Study

John Bosche, Tetra Tech EM Inc. (TtEMI), continued response to comments on the Tidal Area Landfill Feasibility Study, begun at the January 1998 RAB meeting. Selected comments up to number 8 were addressed at this meeting.

Mr. Bosche summarized **Comment #9** regarding Figure 4-1. Concern was expressed that the figure does not show the cap material being tied into the existing bay mud. As currently shown, the biotic barrier/gravel layer separates the cap material from the bay mud and presents a means for landfill gas to escape. The RAB comment suggested amending the figure to show the cap material contacting the bay mud.

Mr. Bosche responded Figure 4-1 will be revised to incorporate the suggestion.

In response to Ed Gardner's question about how the cap is tied into the bay mud at the perimeter, Mr. Bosche replied that it is necessary to commence work during the summer season. Refuse will be excavated from landfill perimeter and consolidated into the landfill. The perimeter surface will then be scarified and recompacted. The relatively impermeable cap will be placed in layers over the compacted surface of the bay mud.

An audience member asked if heavy rains could erode the landfill perimeter. Mr. Bosche responded that the landfill is adjacent to the R Area Disposal Area where it floods up to depths of four feet. He has noted no signs of erosion. The detailed design of the cap, however, will design the toe of the landfill to include inundation by 3-5 feet of water. Cap design compensates for flooding through any one or all of these methods: 1) appropriate use of vegetation, 2) alteration of slope, and/or 3) use of small gravel or rip rap.

Mr. Gallo expressed the RAB's concern that the base is not uniform around the landfill, and noted what appears to be an ancient stream channel.

Mr. Bosche responded that Tetra Tech has investigated the apparent stream channels. Hand auguring the terminus of the channel was performed to investigate the area for permeable soils. Permeable soils were not discovered. The findings lead Mr. Bosche to believe this does not pose a potential problem for the Tidal Area Landfill.

Comment #10 questioned whether the site rests in a 100-Year Flood Plain, and requested a definitive answer in the text of the report.

Mr. Bosche responded that the area at the toe of the landfill is in a flood prone area, and the text will reflect this information.

Comment #11 referred to the clay selected for capping which will lower the infiltration rate from that of a loam cap. Negative impacts of clay cracking and drying were not listed; the comment requested a statement addressing negative aspects of clay cracking and drying.

Mr. Bosche responded that the material chosen for capping must maintain cap integrity and will not be used if it is prone to deep cracking. He added that quality control measures are incorporated into cap construction. Handling the material, slope, and revegetation all factor into cap design to promote runoff and prevent negative effects, such as swelling and shrinking. Mr. Bosche commented that listing negative aspects of clay is not warranted, because the cap design addresses desiccant cracking.

Comment #12 raised the concern about the amount of settling that may occur when refuse decays and creates sink holes. The comment posed whether the refuse will be consolidated and compacted.

Mr. Bosche stated that the foundation layer will be placed on a prepared subgrade. Large holes on the near surface will be compacted by bulldozers; this effort will not consolidate deeper layers. Surface preparation will provide sufficient support to enable the construction of a solid, compacted foundation layer. Mr. Bosche stated his agreement that refuse does settle, but noted that cap design compensates for the settling. One design technique is to exaggerate the slope of the landfill cap to adjust for settling uncertainties.

Comment #13 questioned whether landfill annual operation and maintenance (O&M) costs for Alternatives 2 and 3 include repair to prevent content exposure, ponding, and infiltration caused by settlement or erosion.

Mr. Bosche responded that costs could be adjusted to reflect such requirements. He added that the cost differences would apply to both Alternative 2 and Alternative 3, and should not favor selection of one over the other. Mr. Bosche believed contingency costs may be a good idea. He added that if a low spot did occur, there is little potential for exposure of the landfill debris.

Stan Heller, Navy Co-Chair, asked if EFA West covers maintenance costs. Roy Santana, EFA West, agreed to find out how long maintenance costs are covered, but stated that he believes Navy environmental funds are available either two or ten years, after which time the Naval Weapons Station bears the cost of O&M.

Comment #14 expressed concern that the community would not accept the no action alternative because it does not provide long term protection of human health and the environment.

Mr. Bosche responded that the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requires a no action alternative, and that the Navy recognizes this would not be an acceptable alternative to the community.

Comments #15 and #16 are related. Comment #15 requests another alternative other than capping, though capping is acceptable. Comment #16 questioned the feasibility of adding six inches of concrete to the proposed 36 inches of compacted loam and 18 inches of gravel, because it was believed that concrete would minimize infiltration through the landfill.

Mr. Bosche stated he thought both questions request additional means for reducing infiltration and creating reliable safeguards. He noted that the cap design is graded and sloped to prevent infiltration and promote drainage. He pointed out that no groundwater problem is being detected from the current design of the landfill, and noted that installation of the low permeability cap will provide additional protection. Mr. Bosche explained that concrete is too rigid and prone to cracking with settlement and is expensive. He therefore proposed to leave the two alternatives as they are written.

Comment #17 suggested locating the Wood Hogger in the area.

Mr. Bosche related that the Wood Hogger operations on site are no longer required, because a contractor is hauling dunnage off-site. Forty cubic yard dumpsters are being used to store the dunnage before being hauled off and replaced with another dumpster.

Mr. Gallo questioned the content of the landfill. Mr. Bosche responded that the quality of landfill content sampling results obtained during the Site Investigation did not meet the criteria required for risk assessment. The samples, however, did not consistently detect any hazardous material. Mr. Bosche indicated that the landfill is believed to contain construction waste and refuse; there are no results indicating otherwise.

Mr. Heller added that the site will be monitored continually, and Mr. Bosche reassured the RAB that bay mud is hydraulically tight.

Mr. Bosche related that metals have been detected upgradient and downgradient of the landfill. The landfill, however, does not appear to be contributing to the metal concentrations.

Mr. Edsell asked about mercury. Mary Gleason, TtEMI, reported that ambient concentrations of mercury are found at NWS Concord.

Mr. Gallo noted an agency comment implying a rush to install landfill caps instead of excavating the landfill material from the wetlands portion of the site. Mr. Bosche replied that excavation and consolidation costs were calculated, however, the estimates were determined to be unreasonably high. The Navy opted to retain the presumptive remedy. Costs for moving the landfill would be approximately \$13 million.

Lynn Suer, U.S.EPA, asked if the Navy had estimated how much it would cost to remove the portion of the landfill that resides in the wetland area. Mr. Bosche suggested that further consolidation may not be a good idea because bay mud is relatively weak, and that pulling material

into the landfill will require importing dredge spoils from nearby marinas to fill in the perimeters. This will impact costs, though the exact cost of this proposal has not been estimated. Mr. Santana stated that removing the refuse from the marsh would also involve digging below groundwater.

Ms. Suer requested the Navy consider other alternatives besides total capping or total removal. She noted that she would be interested reviewing the cost estimates. The goal is to create a higher quality wetland and a smaller landfill. She noted that guidance steers presumptive remedies away from sensitive habitats.

IV. RAB comments on Three Year Monitoring Report

This item was not discussed

V. Presentation on Upcoming Year 4 Monitoring Fieldwork and Revisions

Mary Gleason, TiEMI, a trained ecologist who has dedicated nearly four years of work to NWS Concord, shared her expertise on the Litigation Area. She noted the Litigation Sites were first identified as problematic in 1983, and that analysis showed neighboring private properties to be the source of contamination. These sites are located on the far eastern side of the Naval Weapons Station facility and extend to upland habitat. The Navy is responsible for cleaning up contamination that seeped onto the facility.

In 1989, a Record of Decision was signed that focused on removing the most contaminated soil, restoring the area, and conducting long term monitoring. Forty-two thousand cubic yards of soil were removed during cleanup activities conducted between 1993 and 1996. Some contamination was left in place, since total removal would negatively impact endangered species residing in the area.

Goals of the long term monitoring program are to ascertain whether the remaining contamination poses a potential problem, or whether the cleanup and restoration efforts were successful. Long term monitoring will determine whether the residual contamination is migrating to new areas, to the Bay, or recontaminating areas once remediated. Dr. Gleason explained that the Navy is proposing to study these situations over time, because migration may not occur instantaneously, and site conditions may change and create different circumstances.

Ecological surveys, as well as chemical analyses of sediment, soil, water, and plant and animal tissues are conducted under the monitoring program. The area is comprised of upland, wetland, and aquatic habitats found in tidal sloughs; tidal wetlands are rare habitat in the Bay Area. Dr. Gleason reminded RAB members of findings in the Qualitative Ecological Assessment reviewed last year which showed that metals may pose a significant risk to aquatic animals like fish and invertebrates at the site. Species of interest potentially found in the area include the black rail, salt marsh harvest mouse, Chinook salmon, delta smelt, and several rare and endangered plants.

Dr. Gleason explained that monitoring began before the cleanup action, proceeded during the remedial action, and will continue annually for five years; this is year four. The five-year review, after 1999, will evaluate success of the project. The ROD provides for monitoring up to 30 years, if required. Restoration success will be determined if overall quality of the site is improved and quantities of special status plants and animals are being maintained. Dr. Gleason shared that several years of monitoring have shown no groundwater contamination, and that groundwater contamination is pretty much contained by bay mud.

It has been determined that seven metals pose the most concern: arsenic, cadmium, copper, lead, mercury, selenium, and zinc. The process of monitoring metal migration involves dividing the area into spatial units and comparing chemical distribution and concentrations over time. Sediment transport is being watched to determine whether tidal influence is carrying contamination out to the Bay from the marsh, or whether Nichols Creek is transporting contamination into the marsh.

Dr. Gleason informed the RAB that the ditches built 40-50 years ago were constructed to drain the marsh for mosquito abatement, however, they created areas for invasion by introduced plants. These ditches are being monitored this year to determine sediment transport because they also create potential migration pathways. This year's monitoring will include efforts to determine whether the marsh is adding sediment to itself (accreting) or eroding. Erosion may indicate sediment is being carried out to the Bay. Dr. Gleason noted that marshes generally accrete.

Relatively high levels of mercury in the soil have been detected at RASS 4; the Navy will capture three rodents at the site and do mercury tissue studies. Ecological risk to hawks, foxes, or coyotes feeding at the site will be determined by the results. Bioaccumulation, the process of chemical accumulation in the tissue of animals and biomagnification, or accumulation higher on the food chain, will be assessed. Dr. Gleason noted that no mercury was found in the wetlands in front of the housing area.

Dr. Gleason informed the RAB that a new test will be conducted to iron out inconclusive results obtained from the Echinoderm Pore Water Bioassay. Study results were affected by toxic levels of naturally occurring ammonia emanating from the sediment. It was hard to distinguish whether the ammonia or the metal toxicity killed the sea urchins. Other agencies and facilities around the bay have had problems with this test.

Alternative bioassays will be conducted this year. One alternate test, called the Sediment Water Interface Bioassay, will use top smelt, a naturally occurring fish similar to the Delta Smelt. Fertilized embryos that normally reside on top of the sediment will be observed for signs of potential toxicity. Another invertebrate toxicity test is being discussed with regulators and trustee agencies to substitute for the Pore Water Bioassay. Annual ecological and vegetation surveys are performed to estimate population size, use of the site, success of restoration, and recolonization of the remediated area.

Dr. Gleason responded to Ms. Sucr's question about pepper grass and explained that vegetation restoration was basically performed in the upland and wetland habitat. In the upland habitat, weedy species like star thistle infiltrates and prevent native species from gaining a foothold. The Navy removes the weedy species by weed whipping, weeding, and using black plastic. Pepper grass is the weedy species that is pervasive throughout Bay area wetlands. Dr. Gleason noted that pepper grass likes higher ground and somewhat drier conditions. It tends to grow along ditch banks, and so far has not infiltrated the revegetated area.

Dr. Gleason reiterated that monitoring must take place over time, and that the Navy is using sampling protocol consistently to compare results over the long term. Annual results are used to fine tune the program from year to year. At the end of five years, determination should be made whether additional cleanup actions are needed, whether the program was successful, and which monitoring components should be continued in future years.

Mr. Gallo questioned whether the Water Board had samples of runoff from the Chemical and Pigment Company. Dr. Gleason responded that Susan Gladstone, Regional Water Quality Control Board, recently did some sampling adjacent to the Chem and Pigment property. Levels of zinc high enough to indicate a source of zinc were not detected.

Mr. Gallo mentioned that while reading the Year 3 Monitoring Report, data showing contamination was not spreading was reported as conclusive. In other places where contamination appeared to be spreading, the author tended to discount the data. Mr. Gallo perceived skewed reporting. Dr. Gleason responded that it was too early in the monitoring to make strong conclusions about migration and that the report should not be skewed that way.

Dr. Gleason responded to a question about following accretion rates. She relayed that one method the Navy may use to define accretion is by noting the amount of sediment deposit above a level containing high cesium concentrations (deposited in the late 1950's during the nuclear testing era). The amount of sediment deposited since that time helps to define accretion rate. Another comparison may be made by quantifying sediment deposits above a layer containing pollen from a known agricultural crop or weedy species. The amount of sediment resting above the target layer will help determine accretion rate.

VI. Status and Schedule Update of Ongoing Work

Mr. Santana circulated abbreviated and detailed project schedules advising the RAB on when documents are available, when comments are due, and when to plan discussions. The shortened form shows document submittal dates and comment periods; the longer form contains more of the interim steps and expected dates of completion.

Documents soon to be available (or are available) for review are:

Document	Date Available
Draft Site 13 Napalm Cleanup/RI Addendum	22 April
Site 17 Groundwater Monitoring/RI Addendum	05 June
Site 22 Groundwater Monitoring/RI Addendum	03 April
Tidal Area Groundwater Technical Memorandum	16 March

Mr. Santana explained that several dates have changed from the last handout. The initial plan for the Inland Area Sites was to proceed to a No Further Action (NFA) Proposed Plan and Record of Decision (ROD) for sites 13, 17, and 27. However, the Navy must complete follow-on addendums to the RI Report for sites 13, 17, and 22 before recommending NFA. These prerequisites and the new NFA documentation dates are shown on the new schedule.

In response to agency and trustee comments on the Tidal Area RI Report (sites 1, 2, 9 and 11), the Navy will proceed with additional ecological field work and publish draft results in late July.

Mr. Santana informed the RAB that it is possible, but not yet confirmed, that the Navy will proceed with a removal action in a small area of the Wood Hogger Site 11. Results of the ecological field work will determine whether the removal is necessary or not.

VII. Date, Agenda and Location of Next Meeting

In response to Mr. Santana's question about meeting monthly, the RAB agreed on a fluid meeting schedule. The next meeting will be on 21 May 1998 at the Clyde Community Center and will include discussion of the Tidal Area Groundwater Study.

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

**Attendance List
NWS Concord
Restoration Advisory Board Meeting
Thursday, March 19, 1998**

**Naval Weapons Station, Concord
Restoration Advisory Board Meeting Attendance**

Date: 3-19-98

RAB MEMBER	Signature
Steven Bachofer here	
Steve Gallo here	<i>Steve Gallo</i>
Edward Gardner ✓	<i>Edward Gardner</i>
Sylvia Kotecki	
Richard Purdue	
Fatiana Roodkowsky	
Thomas Shirley	
Larry Steinwandt	
Gene Sylls	
Stephen Volk	<i>S. Volk</i>
Scott Etzel	<i>Scott Etzel</i>
NAVY REPRESENTATIVES	
Richard Pieper (NWS Concord)	
Stan Heller (NWS Concord) here	
Roy Santana (EFA West) here	<i>Roy Santana</i>
Mary Gleason (Tetra Tech)	<i>Mary Gleason</i>
PLINT FISHEC (EFA WEST)	<i>Walt Fisher</i>
REGULATORY AGENCIES	
Susan Gladstone (RWQCB)	
Nicole Moutoux (U.S. EPA)	
James Pinasco (DTSC)	<i>Jim Pinasco</i>
Lynn Suer (U.S. EPA)	<i>Lynn Suer</i>

*Base
Commander
Bruno*

Naval Weapons Station, Concord
Restoration Advisory Board Meeting Attendance
Date: 3-19-98

CONSULTANTS	<i>Signature</i>
Kathy Walsh (Tetra Tech EM Inc.)	
Sandra Lunceford (GPI) <i>here</i>	
Barry Gutierrez (GPI) <i>here</i>	
<i>John Bosche</i>	<i>TTEMI</i>