

**FORMER NAVAL AIR STATION MOFFETT FIELD
RESTORATION ADVISORY BOARD MEETING
BUILDING 943, EAGLE ROOM
MOFFETT FIELD, CALIFORNIA**

NOTE: An acronym list is provided on the last page of these minutes.

Subject: RAB MEETING MINUTES

The Restoration Advisory Board (RAB) meeting for former Naval Air Station (NAS) Moffett Field was held on Thursday, 13 November 2008, at Building 943 in the Eagle Room at Moffett Field, California. Bob Moss, RAB community co-chair, and Darren Newton, U.S. Navy Base Realignment and Closure (BRAC) Environmental Coordinator (BEC) and RAB co-chair, opened the meeting at 7:00 p.m.

WELCOME

Mr. Newton and Mr. Moss welcomed everyone in attendance. Mr. Moss asked those present to introduce themselves and provided a brief agenda overview.

The Moffett Field RAB meeting was attended by:

RAB Members	Regulators	Navy	Consultants & Navy Support	NASA	Public & Other
11	4	3	5	5	17

ANNOUNCEMENTS

- Mr. Moss announced that a former RAB Member, Jane Turnbull (League of Women Voters) recently passed away. Mr. Moss read a letter memorializing Ms. Turnbull’s dedication to the RAB. Diane Minasian (League of Women Voters) talked about Ms. Turnbull’s accomplishments and noted she will be missed.
- Mr. Moss said that he requested an update from the U.S. Army about the Orion Park property. Mr. Newton read the following status update provided by the Army for Orion Park:

“Construction of the new Army facilities on the Orion Park property is in the final design stage. Demolition of the existing structures on the property is underway and groundbreaking for the construction of the new Army facilities is planned for the first quarter of calendar year 2009. –John B. Love (Executive Environmental Manager)”

- Mr. Newton reviewed Moffett Field points-of-contact information, including the information repository and administrative record locations, and the 2009 RAB meeting schedule. A handout listing Moffett Field points-of-contact information was made available at the sign-in table. Mr. Newton will add contact information for Kevin Woodhouse (City of Mountain View) to the Moffett Field points-of-contact information to be provided at the next RAB meeting.
- Mr. Newton reminded RAB members to call him or Mr. Moss for an excused absence if they are unable to attend a RAB meeting.
- Mr. Newton said the Navy is updating its website. A community member, Steve Williams, suggested the Navy update the website to ensure it is more community friendly and easier to find information.

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- Mr. Newton also said the Navy is updating its RAB packet mailing list. Currently, the RAB packets are sent to 1,600 community members. The November 2008 and January 2009 RAB packets will include a card asking if the community member would like to continue to receive hardcopies of the RAB packet or to receive the RAB packet electronically via e-mail.

APPROVAL OF MEETING MINUTES

Mr. Moss asked for corrections to the 11 September 2008 meeting minutes. RAB member Arthur Schwartz said his last name is spelled incorrectly on page 5. RAB member Gabriel Diaconescu also noted that on page 5 the word “meta” needs to be inserted before “technical museum” and “she” needs to be correct to “he.” The 11 September 2008 meeting minutes were approved as corrected. Meeting minutes are posted to the Moffett Field project website at: <http://www.bracpmo.navy.mil/basepage.aspx?baseid=52&state=California&name=moffett>.

DOCUMENTS FOR REVIEW

Documents are available in CD-ROM format. Sign-up sheets for the documents listed below were circulated during the meeting.

<u>#</u>	<u>DOCUMENT</u>	<u>APPROXIMATE SUBMITTAL DATE</u>
1.	Draft Site 28 West-Side Aquifer Treatability System (WATS) Optimization Evaluation Report	November 2008
2.	Draft Site 26 East-Side Aquifer Treatability System (EATS) Work Plan	December 2008
3.	Draft Site 28 WATS Work Plan	December 2008
4.	Final Site 28 WATS Optimization Evaluation Report	January 2009
5.	Draft Site 28 WATS 2008 Annual Report	January 2009

SITE 25 AND SITE 8 UPDATE

Mr. Newton announced the Navy will move forward on the Site 25 Proposed Plan (PP) and put Site 8 on a separate track in the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) process. Originally, the Navy had wanted to address the polychlorinated biphenyls (PCBs) NASA identified in the vicinity of Site 8 at the same time as Site 25. Based on discussions between the Navy and regulatory agencies, it was determined that Site 8 and Site 25 need to be on separate tracks.

- RAB member Peter Strauss asked if the PCB contamination at Site 8 is related to Site 29, Hangar 1. Mr. Newton responded that the PCB contamination at Site 8 is from an oil tank and not Site 29.

Mr. Newton asked if the RAB would be interested in holding the public meeting for Site 25 PP in conjunction with a future RAB meeting.

- Mr. Strauss said that there may be enough community interest in Site 25 to conduct a separate meeting to take comments on the PP.

The Navy agreed to consider holding the Site 25 PP public meeting separate from the RAB meeting. The RAB decided a good time to hold the Site 25 PP public meeting would be at the end of January 2009. An e-mail will be sent to the RAB members once the Navy sets the date for the Site 25 PP public meeting.

SITE 29, HANGAR 1 PROGRESS REVIEW

Mr. Newton said the Navy is reviewing all of the comments received on the Engineering Evaluation/Cost Analysis (EE/CA) for Site 29, Hangar 1. The Navy received a letter from the Advisory Council on Historic Preservation (ACHP) that will be addressed in the responsiveness summary along with all of the comments received from the agencies and public. Mr. Newton said that the National Aeronautics and Space Administration (NASA) also received a letter from ACHP.

- RAB member Lenny Siegel asked if the Navy and NASA are working together to restore Hangar 1 as recommended by the letters sent by ACHP. Mr. Newton said that the Navy is coordinating with NASA on the removal action; however no decisions on reuse have been made at this time.
- A community member asked if the Navy is moving forward with Alternative 10, to remove siding and coat exposed surfaces, from the EE/CA. Mr. Newton said that the Navy is moving forward with Alternative 10 in the action memorandum that is being developed.
- Mr. Williams asked about the next steps after the action memorandum is issued and how ACHP's comments requesting the Navy and NASA work in a partnership to restore Hangar 1 will be addressed. Mr. Williams also said that the Navy and NASA should be actively working on restoration of Hangar 1 based on the ACHP comments. Mr. Newton said that the historic mitigation process is separate from the environmental removal action for Hangar 1. Once the Action Memorandum, inclusive of the responsiveness summary is issued, the path forward should be clear. Mr. Newton continued that the Navy will be establishing contracts for the removal action at Hangar 1 in the late summer or early fall 2009.
- Mr. Woodhouse said that NASA spoke with the Mountain View City Council about restoration of Hangar 1. NASA indicated to the City of Mountain View they are working with the Navy to reside Hangar 1. More information on the partnership to re-side Hangar 1 will be available in the near future. Mr. Newton said that there is some room in the removal action schedule for Hangar 1 if there is a partnership with NASA to reside Hangar 1.
- Mr. Moss said that the Navy will not be allowed to abandon its responsibility to restore Hangar 1. Mr. Moss will go to Congress to make sure the Navy restores Hangar 1.
- Mr. Siegel said that the discussions among the Navy, NASA, and the City of Mountain View should be transparent to the public. Mr. Siegel said that the path forward for Hangar 1 is not being outlined to the community. The community is not interested in disrupting the remediation and restoration process; however, the community wants to make sure it knows that the project is moving forward.

Mr. Newton said the Navy will continue to provide updates on the progress of Hangar 1 at every RAB meeting. Mr. Newton further said that re-siding Hangar 1 is one component of the remediation and restoration process. There are many aspects to coordinate for Hangar 1. If there is a partnership with NASA to reside Hangar 1, it will need to be identified to the Navy by May 2009.

- Mr. Williams is dissatisfied that the Navy is not providing more information than indicating all of the decisions are with Navy management. Mr. Williams feels it is unacceptable to the community that the specific path forward is unknown. Mr. Williams requested the Navy take all of the questions to its managers and obtain additional information to provide to the community. He said the Navy is obligated to provide information to the community.

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PETROLUM PROGRAM UPDATE

Wilson Doctor (Navy Remedial Project Manager [RPM]) presented the Navy's progress on the total petroleum hydrocarbon (TPH) program since the last RAB update that occurred in March 2008. Mr. Doctor said that the Navy removed many of the underground storage tanks (USTs) in 1994. The Navy uses environmental screening levels from the San Francisco Bay Regional Water Quality Board (Water Board) to decide whether further evaluation is needed at a UST site. The goal is to close out each UST or aboveground storage tank (AST) site. If enough documentation is available for a site to indicate that no further action (NFA) is required, then the Navy requests a closure letter from the Water Board.

Mr. Doctor said the Navy completed field work in November 2007 for the fuel components at Building 29. The Navy collected soil samples every 50 feet along two inactive pipelines. Once the sampling was complete, a report was provided to the Water Board. The Water Board issued a NFA letter in May 2008.

Mr. Doctor said that the Navy received a closure letters for UST 121 and 122 and ASTs 100, 101, 129, 132, and 133 from the Water Board in September 2008. The Navy received a closure letter for AST 52 from the Water Board in October 2008 and on AST 103 and 104 in November 2008.

Mr. Doctor said the Navy is working on the Former Aircraft Wash Rack site. The Navy submitted an investigation summary report to the Water Board in October 2008. Currently, the Navy is preparing responses to Water Board comments on the report.

Mr. Doctor said the Navy is working on the Site 5 Channel Deposit. The Navy submitted an investigation summary report to the Water Board in October 2008. Currently, the Navy is preparing responses to Water Board comments on the report.

Mr. Doctor said the Navy is continuing to work on the Building 29 and Building 55 pipelines. A work plan to remove the sump at Building 55 and sample soil and groundwater was submitted to the Water Board in February 2008. The Navy submitted an investigation summary report to the Water Board in November 2008.

Mr. Doctor said the Navy submitted the final work plan for Site 14 in February 2008. The Navy installed seven groundwater wells at Site 14 and is conducting four quarters of sampling. Once all four quarters of sampling are completed, the Navy will decide on the next steps.

- Mr. Siegel asked the length of the Site 14 groundwater plume. Mr. Doctor said the groundwater plume is approximately 150 feet at Site 14

Mr. Doctor reviewed the Navy's upcoming petroleum projects, which include work at Site 20, the Former Navy Exchange gas station, ASTs 94, 95, 102, and 118, Site 5 dry well sampling, USTs 85 and 85A, Tank 25A and UST 58.

SITE 26 UPDATE

Julie Crosby (Navy RPM) introduced Dan Leigh (Shaw Group), who gave a presentation on the phytoremediation and abiotic and biotic pilot tests being developed for Site 26. Ms. Crosby said that previously the Navy was considering returning the East-Side Aquifer Treatment System (EATS) to service; however, the agencies agreed a pilot study should be conducted at Site 26 as opposed to returning EATS to service. The Navy plans to submit the draft work plan for the phytoremediation and abiotic and biotic pilot tests to the

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agencies on 18 December 2008. The agencies will have an opportunity to comment on the draft work plan before the Navy goes into the field in the spring of 2009 to begin the pilot tests.

Mr. Leigh presented the two pilot studies the Navy will conduct at Site 26, which include abiotic and biotic and phytoremediation. The Navy received extensive input from the agencies and NASA before the pilot studies were developed. Mr. Leigh showed a map Site 26 and reviewed current site conditions. The groundwater plume at Site 26 is moving downgradient (toward the north). The soil at the site is made up of heterogeneous interbedded clay, silt, and sand. The goal of the abiotic and biotic pilot tests is to evaluate the use of chemical and biological processes to break down chlorinated organic compounds in soil and groundwater. The abiotic and biotic pilot study will be conducted in an area where the highest levels of contamination have been detected at Site 26. The substrate used for the abiotic biotic pilot test, EHC™, will be injected into layers of groundwater using direct-push technology and will break down contamination biologically and chemically.

The goal of the phytoremediation pilot test is to extract chemicals from the groundwater through trees planted at Site 26. The Navy plans to plant up to 100 trees at Site 26. Three varieties of trees will be used at Site 26, which tentatively include the red willow, the poplar, and the blue gum. Planting the trees will lower the groundwater table and the trees will take up contamination through the roots. Tests will be done to determine how much of the contamination is captured by the trees. Mr. Leigh said that the Water Board asked the Navy to examine the possibility of using alfalfa at the site instead of trees. The groundwater at Site 26 is about 6 feet below the surface. Although alfalfa can grow deep roots, U.S. Environmental Protection Agency (EPA) guidance indicates that the technology is limited to less than 6 feet.

- Mr. Siegel asked if the trees planted at Site 26 will be mature. Mr. Leigh said that the trees will be large but not mature. Each tree will be delivered to Site 26 in 25 gallon buckets.
- Mr. Strauss asked if the evaluation timeframe is long enough to determine if the system is working. Mr. Leigh said they will try to get the trees to grow as quickly as possible and plant the trees to encourage growth toward the water table. However, it is not considered likely during this period of performance that the trees roots will extend to the groundwater. Therefore, site groundwater will be used to irrigate the trees to more rapidly evaluate the applicability of the trees and the uptake of the contaminants. The uptake of contaminants will be assessed on a regular basis to measure the amount of groundwater that is absorbed by the trees. Mr. Strauss asked if the Navy will measure the leaves on the trees. Mr. Leigh said that some of the trees will be sacrificed to measure bark, inside tissues, and leaves. The chlorinated organic concentrations will be measured in the trees that are sacrificed.
- Mr. Williams said that eucalyptus trees line the golf course fairways that run alongside Site 26. Eucalyptus trees tend to grow tall, which is an aviation hazard. NASA is concerned with tall trees in that area since a runway is close by. Mr. Leigh said that trees such as eucalyptus uptake a great deal of water, which can be used like a pump and treat system for the groundwater. The Navy is trying to control the groundwater flow by planting these trees and remove the mass of the plume. The Navy will work with NASA to address any aviation concerns.

Mr. Leigh reviewed the abiotic and biotic process of how chemicals are broken down anaerobically and transformed into chemicals that are non-toxic, such as ethene and ethane. Some chemicals need organisms to chemically break down into ethane. Mr. Leigh said that EHC™ has organic carbon, which can release organic acids such as lactate and can be an effective remediation mechanism at a site for 3 to 6 years. Using EHC™ to treat chemicals can make the removal process proceed smoother. Mr. Leigh reviewed the EHC™ injection process.

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- A community member asked if hydrochloric acid (HCl) is generated during the process and if it is a problem. Mr. Leigh responded that HCl is produced but at low concentrations that would only minimally reduce the pH of the aquifer.
- A community member asked how the contaminants are disposed of once they are taken up into the trees on site. Mr. Leigh said contamination at the site above regulated levels, if present, will be disposed of in the appropriate class of landfill.
- Mr. Siegel asked if the contamination from the groundwater will be left in the soil as a result of the uptake process. Mr. Leigh said this is an effect of flushing water through soil into groundwater to remediate contamination. The soils in the phytoremediation area will be analyzed at the beginning and end of the pilot test to evaluate partitioning of contaminants into the soils.
- Mr. Straus asked Mr. Leigh if he had reviewed the modeling results for Site 26. Mr. Leigh responded that he had not. Mr. Strauss said that a few years ago a proposal was made to install a permeable reaction barrier (PRB), but it was determined to not be applicable. Mr. Strauss asked Mr. Leigh his thoughts on the applicability of a PRB for the site. Mr. Leigh responded that PRB may be applicable but may be difficult to design and install because of the highly heterogeneous nature of the site. Mr. Leigh also said that it is too early to speculate on the applicability of the technology and that it could be addressed after the pilot tests are complete.

Ms. Crosby said the Navy completed extensive modeling on the data for Site 26. Mr. Newton said that the analysis on Site 26 was presented to the RAB in a previous presentation in April 2008.

RAB BUSINESS

Future RAB Topics

Mr. Newton announced the next RAB meeting will be held on 8 January 2009. Mr. Newton announced that Mr. Chuck agreed to be the Navy's NASA sponsor, so future RAB meetings can continue to be held in Building 943. Mr. Newton thanked Mr. Chuck for his assistance in reserving Building 943 for the RAB meetings.

Mr. Newton suggested potential presentation topics for future RAB meetings could include updates in the Site 28 West-Side Aquifer Treatment System Optimization Plan. Mr. Newton asked for additional topic suggestions for future RAB meetings.

Regulatory Update

Water Board

Elizabeth Wells (Water Board) provided an update on Water Board activities for Former NAS Moffett Field. Ms. Wells said that the Water Board collected data in the San Francisco Estuary for the Regional Monitoring Program. The monitoring results are available for review in *The Pulse of the Estuary 2008*, which focused on mercury. The document can be found electronically at www.sfei.org. Ms. Wells said that she is the only Water Board RPM for Former NAS Moffett Field. Ms. Wells provides oversight for the Installation Restoration Program sites as well as the petroleum program. Ms. Wells has been the RPM on Former NAS Moffett Field for 1½ years. The prior RPM for the Water Board closed many of the petroleum tanks located on the base. Currently, 75 percent of the petroleum tanks are closed. There are 37 tanks and eight other petroleum sites the Water Board is working with the Navy to close at Former NAS Moffett Field. Ms. Wells said the Water Board issued a letter to the Navy outlining the outstanding petroleum sites that need to be addressed before they can be closed.

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- Mr. Siegel requested that regular updates on the progress of the petroleum program be provided to the RAB. Mr. Newton confirmed regular updates can be provided to the RAB on the petroleum program.

EPA

Alana Lee (EPA) said EPA has been working on groundwater and air quality issues at Middlefield-Ellis-Whisman (MEW) Site, which includes portions of Moffett Field. EPA is working with the MEW parties to revise and finalize the Supplemental Remedial Investigation and Feasibility Study for the Vapor Intrusion/Indoor Air Pathway and with all the Parties (Navy/NASA/MEW) to develop a new Site-wide Groundwater Feasibility Study (FS). Ms. Lee said that EPA is also meeting with the Army about Orion Park to conduct additional investigation to address remaining data gaps.

- Mr. Siegel asked if EPA has received regional optimization plans from the MEW group. Ms. Lee indicated that EPA has received and reviewed all the optimization evaluation reports from each of the MEW parties and NASA. The Navy plans on submitting its Optimization Report for the WATS area later in November 2008. EPA is currently meeting with each Party to discuss comments on the Reports and the path forward for the ongoing groundwater cleanup.

Ms. Lee said that EPA has some additional funding to further investigate potential source areas and the extent of groundwater contamination in the Highway 101 and Moffett Blvd study area (the areas upgradient of Orion Park). EPA is planning to sample up to 20 locations in the Highway 101 and Moffett Blvd study area. Ms. Wells said the Water Board is working with a property owner near the Highway 101 interchange area (former Dennys property on Leong Drive). The Water Board is coordinating with the Department of Toxic Substances Control, which is overseeing the former Vector Control Yard property, a site upgradient of Orion Park, to evaluate whether additional investigation is necessary.

RAB Schedule

The next RAB meeting will be held from 7 to 9:30 p.m. at Building 943, in the Eagle Room at Moffett Field, California. The RAB meeting schedule for 2009 is Thursday evening at 7 p.m. as follows:

- 8 January 2009
- 12 March 2009
- 14 May 2009
- 9 July 2009
- 10 September 2009
- 12 November 2009

Adjourn

The meeting was adjourned at 9:45p.m., and Mr. Newton thanked everyone for attending. Mr. Newton can be contacted with any comments or questions:

- Mr. Darren Newton
BRAC Environmental Coordinator, Former NAS Moffett Field, BRAC Program Management Office West;
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ACRONYM LIST

ACHP – Advisory Council on Historic Preservation
AST – Aboveground storage tank
BEC – BRAC Environmental Coordinator
BRAC – Base Realignment and Closure
CERCLA – Comprehensive Environmental
Response, Compensation, and Liability Act
EATS – East-Side Aquifer Treatment System
EE/CA – Engineering evaluation/cost analysis
EPA – U.S. Environmental Protection Agency
FS- Feasibility study
HCl – Hydrochloric acid
MEW – Middlefield-Ellis-Whisman
NAS – Naval Air Station

NASA – National Aeronautics and Space
Administration
NFA — No further action
PCB – Polychlorinated biphenyl
PP – Proposed Plan
PRB — Permeable reaction barrier
RAB – Restoration Advisory Board
RPM – Remedial Project Manager
TPH — Total petroleum hydrocarbon
UST – Underground storage tank
WATS – West-Side Aquifers Treatment System
Water Board — San Francisco Bay Regional Water
Quality Control Board

RAB meeting minutes are posted on the Navy's environmental Web page at:

<http://www.bracpmo.navy.mil/basepage.aspx?baseid=52&state=California&name=moffett>