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Ser 1843.1/6260
June 6, 1996

Dear RAB Member:

On behalf of the Moffett Federal Airfield (MFA) Base Closure Team and the Community Co-Chair, you are invited to our next Restoration Advisory Board (RAB) meeting.

Our last RAB meeting was held on May 9, 1996 at the City of Mountain View Police/Fire Administration Building in Mountain View, CA. The meeting summary is provided as enclosure (1). Our next RAB meeting will again be held on the second Thursday of the month, **June 13, 1996**, at the City of Mountain View Police/Fire Administration Building. The meeting will begin promptly at 7:00 p.m. The auditorium schedule has again been confirmed for our use. The agenda for the meeting is as follows:

7:00-7:02 PM Meeting Overview
7:02-7:04 PM Minutes Approval
7:04-7:20 PM Remedial Project Managers Meeting Report
7:20-7:30 PM Subcommittee Reports
7:40-8:10 PM B-191 Discussion Regarding OU1 & OU5
8:10-8:20 PM Break
8:20-8:30 PM RAB Quiz
8:30-8:45 PM Barron Park Association Site Presentation
8:45-8:55 PM Barron Park Association Site Discussion
8:55-9:00 PM Agenda/Schedule for the Next RAB Meeting

If you have any questions or comments, please contact me at (415) 244-2563, Mr. Hubert Chan of this office at (415) 244-2562, or Mr. Robert Moss, Moffett's Community Co-Chair, at (415) 852-6018.

Sincerely,

ORIGINAL SIGNED

STEPHEN CHAO
BRAC Environmental Coordinator
Moffett Federal Airfield

Distribution:

Moffett Federal Airfield RAB Members
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**MOFFETT FEDERAL AIRFIELD
RESTORATION ADVISORY BOARD MEETING**

MEETING MINUTES

**CITY OF MOUNTAIN VIEW POLICE/FIRE ADMINISTRATION BUILDING
1000 Villa Street
Mountain View, California**

THURSDAY, MAY 9, 1996

I. INTRODUCTIONS AND MEETING OVERVIEW

Mr. Bob Moss, community co-chair, opened the meeting of the Moffett Federal Airfield (Moffett Field) restoration advisory board (RAB) at 7:10 p.m. Mr. Moss reviewed the following agenda items for this meeting:

- Minutes approval
- Remedial project managers' (RPM) meeting report
- Committee reports
- Presentation: "San Francisco Bay Regional Water Quality Control Board (RWQCB) Guidance for Petroleum Cleanup"
- Discussion of RWQCB guidance for petroleum cleanup
- Discussion of frequency of RAB meetings
- RAB quiz
- Agenda and schedule for June RAB meeting

II. MINUTES APPROVAL

Mr. Moss solicited comments on the minutes of the April 11, 1996 RAB meeting. Mr. Peter Strauss, MHB Technical Associates and consultant to the Silicon Valley Toxics Coalition (SVTC), stated that the cost for the Site 1 landfill cap (page 7 of the minutes) should have been \$3 million, not \$5.2 to \$5.6 million. He noted that the \$5 million cost was for all of operable unit 1 (OU1). Mr. Strauss added that approximately \$1 million of the \$3 million was for operation and maintenance (O&M). He observed

that these revised costs might have led to different budget priorities during discussions at the April 11, 1996 meeting. There were no other comments and the minutes were approved as corrected.

III. RPM MEETING REPORT

Mr. Joseph Chou, California Environmental Protection Agency (Cal/EPA), Department of Toxic Substances Control, provided a report of the May 9, 1996 RPM meeting held at the National Aeronautics and Space Administration (NASA) offices at Moffett Field. Mr. Chou stated that the Navy and the Middlefield-Ellis-Whisman (MEW) companies had reached a basic understanding of responsibilities for remediation of the aquifers north of U.S. Highway 101 and that an agreement was still in progress. He reported that the U.S. Environmental Protection Agency (EPA) had approved the Navy's extension request for submittal of the draft final station-wide feasibility study (FS) report. Mr. Chou noted EPA had sent the Navy clarifying information which indicated that significant construction activities must begin within 15 months of signing a final record of decision (ROD).

Mr. Chou stated that the Navy's Site 9 source control measure treatment systems were operating at a combined flow rate of approximately 24 gallons per minute (gpm). Four groundwater extraction wells were pumping at 2 gpm each and the storm drain system contributed about 16 gpm. Mr. Chou reported that the Navy had submitted a 35 percent design for the west-side aquifers treatment system. He added that the design did not include details such as construction specifications and electrical control drawings, but that these items would be included in the 100 percent completion submittal.

Mr. Chou stated that construction at the Iron Curtain pilot test was completed in April and that the Navy was planning to wait 1 month for the system to equilibrate before sampling. He reported on field activities conducted at OU1 in April. Activities included excavating 13 trenches at Site 1 and 17 trenches at Site 2 to more accurately define the landfill boundaries. Activities also included conducting 27 cone penetrometer tests (CPTs) and collecting 17 HydroPunch samples south of Site 1. Mr. Chou stated that a technical memorandum summarizing the Site 1 field activities was scheduled to be submitted on June 28, 1996.

Mr. Chou reported that the draft final phase II site-wide ecological assessment (SWEA) report was scheduled to be submitted on May 19, 1996. He noted that a 45-day review period would follow and

comments would be due on June 26, 1996. Mr. Chou stated that the final station-wide remedial investigation (RI) report was scheduled to be submitted on May 21, 1996. He added that only volumes 1, 2, and 11 (of 11 volumes) contained changes. Mr. Chou stated that the draft final OU1 ROD was scheduled to be submitted on June 3, 1996. Mr. Chou reported that the four 567,000-gallon tanks at the Site 5 fuel farm are still active and that some repairs have been completed while others are ongoing.

Mr. Chou stated that the RPMs discussed the OU5 ROD and the operation of Building 191. He reported that the Navy's position was that continued operation of Building 191 is not essential to the remedy and, therefore, no specific language would be included in the ROD. He noted that Navy, NASA, and regulatory agency attorneys needed to meet to resolve this issue. Mr. Chou said that regulatory agencies were waiting for the actual document (scheduled for May 10, 1996) to review the language before deciding whether dispute resolution was necessary. Mr. Strauss asked whether Cal/EPA's position was that specific language regarding Building 191 should be included in the OU5 ROD. Mr. Chou responded that the Navy's position was that such language should not be part of the ROD and that dispute resolution might be needed. Mr. Hubert Chan, Navy, stated that Navy and NASA attorneys need to address the actual language of the ROD, but that the language in the draft final version was not likely to be acceptable to the regulatory agencies.

Mr. Strauss asked whether the RAB should propose language for the OU5 ROD that would address the RAB's concerns. Mr. Chou responded that the RAB's comments are the same as Cal/EPA's and that the issues are already clearly presented. Ms. Christina Scott, Lockheed Martin, asked whether long-term operation of Building 191 was addressed in the OU1 ROD. Mr. Chou responded that the OU1 and OU5 RODs contained similar statements. Mr. Moss stated that the record should indicate that the RAB still feels strongly that the Navy's position regarding operation of Building 191 is incorrect. Mr. Ron Gervason, RWQCB, added that the problem is a combination of technical issues and legal interpretations and that the attorneys must confer to resolve the issues. Dr. Jim McClure, Harding Lawson Associates and consultant to the MEW companies, asked whether the Navy's position was that no technical reason required including operation of Building 191 in the OU5 ROD. Mr. Gervason responded that the Navy preferred that the ROD contain only the performance standard and that the Navy would favor maintaining flexibility in meeting the standard. For example, if OU1 became submerged, the remedy would no longer meet the standard given in the ROD, but the Navy would be able to choose how to correct the situation.

Mr. Moss asked whether the Navy conducts the remedy performance evaluation. Mr. Gervason replied that the regulatory agencies are responsible for the evaluation. Dr. McClure asked what NASA's position was related to ensuring compliance at OU5 and possible effects on NASA's west-side operations. Ms. Sandy Olliges, NASA, responded that NASA will continue to operate Building 191 as long as NASA controls Moffett Field operations. She added that continuation of operations at Building 191 could be added to the facility deed if the federal government no longer controls Moffett Field. Ms. Olliges noted that if this was not added to the deed, then specific language should be included in the OU5 ROD. Dr. McClure asked whether NASA had done any contingency planning for possible cessation of operations at Building 191. Ms. Olliges replied that NASA had not prepared any contingency plans.

Mr. Chou stated that the regulators would keep the RAB updated on OU5 ROD discussions. He continued his report by indicating that the Navy's preferred discharge method at OU5 was water reuse at the golf course. Discharge to a publicly owned treatment works (POTW) is another consideration for excess flows. Mr. Chou stated that the RPMs discussed funding issues and that Cal/EPA's position was that the Navy must demonstrate diligence in requesting appropriate funding. Ms. Leslie Byster, SVTC, stated that she had a draft letter to congressional members discussing funding concerns available for RAB members to sign. She circulated this letter among the members. Dr. McClure commented that Cal/EPA or EPA could apply political pressure for increased funding. He added that the Governor's Office appeared to support efforts to minimize negative economic impacts that could result from decreased funding. Mr. Chou responded that Cal/EPA was preparing a letter to the Navy concerning funding for Base Realignment and Closure (BRAC) IV bases and will prepare a similar letter to request increased funding for Moffett Field.

Ms. Byster asked why the issues related to the operation of Building 191 had not come up sooner. Dr. McClure stated that the RAB had provided input since the previous spring, but that the Navy continued to disagree. Mr. Chan responded that the Navy does not dispute the fact that the operation of Building 191 is essential to Moffett Field operations, but rather that the OU5 ROD should contain performance criteria that will allow the Navy the flexibility to meet future, unforeseen conditions. The Navy still has responsibility to meet the performance standard and will still have to work with the regulatory agencies in the future. Ms. Byster added that the public should always have the opportunity for input.

Ms. Olliges stated that if Moffett Field is no longer federally controlled, a new owner may not continue operation of Building 191. Mr. Chan responded that issues related to land transfer, such as deed modifications, are more appropriately handled when the transfer occurs. Ms. Olliges stated that a statement requiring continued operations at Building 191 could be added to the OU5 ROD as an institutional control. Mr. Strauss added that operations at Building 191 also influenced cleanup of the west-side aquifers. He stated that the Navy should prepare a contingency plan in conjunction with all remedies that could be affected by the operation of Building 191. Mr. Strauss recommended that the RAB technical members develop specific language for the OU5 ROD while the Navy, NASA, and regulatory agency lawyers meet. Mr. Moss suggested that the RAB wait until the ROD is available for review and then evaluate its technical justification for not incorporating continued operations at Building 191. He stated that, if adequate justification is not presented, the ROD should contain contingencies and enforceable activation mechanisms. Mr. Strauss solicited opinions from other members concerning whether the RAB should draft language for the OU5 ROD. Dr. McClure added that the MEW ROD for the west-side aquifers could be affected if operations at Building 191 are not continued because this could create a significant change in hydrogeological conditions.

Ms. Olliges stated that NASA intends to operate Building 191 as long as it is in control of Moffett Field, but her concern is for future potential owners. Mr. Gervason noted that the Navy is not opposed to operating Building 191, but is only opposed to requiring its operation as part of the OU5 ROD. He added that the current disagreement would not be solved at the meeting and that the RAB was welcome to draft language for the ROD. Mr. Moss reiterated that the RAB's position is clear and recommended that the RAB review the ROD and provide comments rather than propose language. Mr. Chan added that environmental law (the Comprehensive Environmental Response, Compensation, and Liability Act [CERCLA]) requires a long-term Navy commitment and that no language in the ROD could affect the Navy's responsibilities under CERCLA.

Mr. David Glick, community vice co-chair, asked whether requirements for continued operations at Building 191 would appear in any other documents than the OU5 ROD. Mr. Chan responded that such requirements would be added to the facility deed at the time of transfer. Ms. Olliges stated that staff in charge of the facility at some future date may not be aware of the need to add this provision to the deed before transfer. Mr. Moss said deed restrictions were required at the 365 Page Mill site in Palo Alto.

Mr. Chan added that the Navy is working with NASA, as facility owner, on the issues related to applying a deed restriction. Ms. Olliges said NASA was willing to add a restriction to the deed but would like a statement requiring this restriction included in the OU5 ROD. Mr. Lenny Siegel, Pacific Studies Center, said that existing legal requirements can, and should, be included in the ROD because the ROD is the document the public will read to understand the cleanup decisions.

Ms. Olliges continued the RPM meeting report by summarizing NASA activities. NASA completed removal of underground storage tanks (USTs) at its fuel farm north of Hangar 1 (area of interest [AOI] 1). Additional characterization of the extent of contamination is planned. NASA installed two groundwater monitoring wells at AOI 2 (north of Navy Site 9) to investigate volatile organic compound (VOC) concentrations. Additional sampling is planned at AOIs 4 and 5 on the western side of the NASA area to further define fuel-related contamination in soil and groundwater. Final excavation activities at the Lindbergh Avenue storm drain channel (AOI 6) are nearly completed and two groundwater monitoring wells will be installed to evaluate polychlorinated biphenyl (PCB) concentrations. NASA has installed a new groundwater monitoring well within the excavated area north of Navy Site 8 (AOI 7). NASA installed four new monitoring wells at AOI 8 near the northwestern corner of the NASA area to evaluate fuel-related contamination. NASA plans to resample soils at some transformer locations (AOI 10) to confirm results from earlier composite samples. NASA is preparing closure reports for several USTs and is negotiating with the MEW companies concerning issues related to the west-side aquifers cleanup.

IV. COMMITTEE REPORTS

Mr. Moss asked the committee chairs to deliver their reports. Dr. McClure, technical, historical, and educational (THE) committee chair, reported that the committee met on May 8, 1996 and that two handouts were available at the meeting. These concerned the iron curtain, or zero-valent iron, technology and redevelopment of abandoned industrial properties (brownfields). Dr. McClure stated that the committee received the Navy's 35 percent (preliminary) design for the west-side aquifers. The report contains technical information regarding processes that will actually be implemented to clean up the aquifers. Dr. McClure stated that the committee discussed funding issues related to Mr. Stephen Chao's presentation at the April 11, 1996 RAB meeting. The committee noted that the Navy received only about 15 percent of requested funds for fiscal year 1996 and, therefore, not all cleanups could be

implemented. Dr. McClure added that funding issues are beyond the RAB's control but that these issues should be raised to a higher level (such as through the letter prepared by Ms. Byster).

Mr. Strauss asked Dr. McClure his opinion, as an MEW representative, on funding issues. Dr. McClure replied that the MEW companies did not view construction of the Navy's west-side aquifer treatment system as an issue because funding was already allocated. However, future expansion and continued O&M were a concern. Mr. Strauss asked whether the MEW companies would be willing to work with the RAB to solicit additional Navy funds for Moffett Field. Dr. McClure responded that the MEW companies believe that their potential influence is small relative to the local municipalities. Mr. Moss questioned the MEW companies' reluctance to accept RAB support, since lack of federal funds for cleanup at Moffett Field also affects them. Dr. McClure replied that the MEW companies would accept support, but would not likely favor a lead role in soliciting funding. Mr. Siegel stated that previous Department of Defense (DoD) funding shortfalls did not generate much public interest and that individuals must speak out or DoD will not be aware of public concerns. He added that the Navy has disclosed its planned funding levels for the first time and it is the community's duty to respond. Mr. Moss suggested that the RAB adopt the position that current funding levels are insufficient and that members prepare letters to Congress expressing this concern and the potential for economic and ecological harm if cleanups are delayed.

There were no reports from the cost or communications, media, and outreach committees.

V. RWQCB PETROLEUM GUIDANCE PRESENTATION AND DISCUSSION

Mr. Kevin Graves, RWQCB, presented information concerning the San Francisco Bay Region's guidance for petroleum site cleanup. The presentation included discussion of the California UST program and lessons learned over the past 10 years. Mr. Graves discussed the history of RWQCB policy and described the research process used by the Lawrence Livermore National Laboratory (LLNL) in developing its report on the UST program. He presented the findings and recommendations of the LLNL report including:

- Petroleum impacts are not as severe as once suspected.
- Cost of many cleanups is inappropriate compared to risk.

- Passive bioremediation should be used for cleanup whenever possible.
- RWQCB should modify and implement the American Society for Testing and Materials (ASTM) risk-based corrective action (RBCA) standards as soon as possible.

Mr. Graves continued his presentation by discussing RWQCB's supplemental instructions which define a low-risk site. Criteria for a low-risk site include: the source is removed, the site is adequately characterized, the plume is stable, and there is no risk to surface water, deeper aquifers, human health, or environmental receptors. Mr. Graves described the role of a conceptual site model in evaluating petroleum contamination and briefly discussed the RBCA analysis. He explained that the RBCA analysis quantifies current risks and institutional controls (such as permit requirements) protect against future risk. Mr. Graves concluded his presentation by contrasting the petroleum guidance with RWQCB containment zone policy. Containment zones (for VOCs, for example) allow nonbiodegradable compounds to be left in place and managed rather than be cleaned up. Petroleum compounds readily degrade and, consequently, do not require containment zones because cleanup occurs naturally.

Mr. Michael Gill, EPA, asked whether the toxicity of gasoline additive methyl tertiary butyl ether (MTBE) was considered in the LLNL study. Mr. Graves responded that MTBE was present at only 12 sites in the LLNL database and not enough data were available. Mr. Gill asked whether MTBE was added to all gasoline. Mr. Graves replied that MTBE had previously been added only during winter months, but now is added to all gasoline throughout the year. He added that MTBE is very soluble in water and does not readily degrade or sorb to sediments. Therefore, MTBE is a good tracer for evaluating plume movement. Mr. Graves noted that toxicity information for MTBE has not yet been developed, but ether compounds occur naturally in humans and are used in some medical treatments.

Ms. Byster asked how much benzene is contained in petroleum products. Mr. Graves responded that gasoline contains more benzene than diesel fuel and aviation gasoline contains more benzene than JP5 jet fuel. He added that the benzene content is related to the fuel's boiling point during distillation, but that even heavier fuels may contain trace amounts of benzene. Ms. Byster asked what risk assessment endpoint was used for the RBCA analysis. Mr. Graves replied that cancer risk was the endpoint used. Ms. Byster asked what levels of risk were considered significant. Mr. Graves responded that

incremental lifetime excess cancer risks ranging from 10^{-4} to 10^{-6} were significant. Ms. Byster added that leaving toxic compounds in the ground is against SVTC policy.

Mr. Siegel stated that some cases do not show petroleum compounds break down faster than they migrate, which could pose a risk. He said he was concerned that RWQCB had adopted this petroleum policy so rapidly and without public comment. Mr. Siegel stated that the technical issues involved were not solved and policy should not be implemented before the technical questions are resolved. He noted that the new policy forces the water user to prove contamination is a problem rather than making the polluter responsible. Mr. Siegel commented that the policy appeared to be a move to undermine ecological regulations and that RWQCB should expect public resistance at some sites because the public was not involved in setting the overall policy. Mr. Graves responded that the RWQCB policy is not new, but has been implemented through the basin plan since 1991.

Mr. Siegel asked whether RWQCB considered bioventing as a cleanup option. Mr. Graves responded that RWQCB had evaluated bioventing as well as air sparging and peroxide injection, but the data indicate cleanup to maximum contaminant levels (MCLs) is very difficult. He added that the costs of cleanup require an endpoint to be set. Mr. Strauss asked whether LLNL studied plumes that had high benzene concentrations as well as those with trace amounts. Mr. Graves replied that benzene was the lead contaminant investigated and a wide range of concentrations was considered. Mr. Strauss asked whether the average benzene concentration in gasoline would lead to a problem in the event of a spill or leak. Mr. Graves responded that benzene creates the largest risk along the inhalation pathway, but that the components of each spill are different and the risks from each component are considered separately. Mr. Strauss asked if benzene content was considered in the evaluation of whether a site poses a risk to human health. Mr. Graves replied that it was.

Mr. Strauss asked how the potential threat to surface water or deeper aquifers was evaluated. Mr. Graves responded that the evaluation depends on the use of the water resources. Mr. Strauss suggested the case where the groundwater was a potential drinking water source. Mr. Graves replied that aquifer use regulations prohibit use of groundwater within 300 feet from a UST and require a 50-foot sanitary seal which precludes use of shallow groundwater. He added that RWQCB was moving away from a policy of "every drop is precious" to one of probable future use. Dr. McClure provided two examples of sites to illustrate how passive remediation could be appropriate for one site and not for another. Mr.

Siegel commented that simple cases are rarely found and that Moffett Field has the additional complication of petroleum-contaminated groundwater commingled with VOCs. Mr. Graves stated that the presence of VOCs in groundwater already limits its use, so cleanup of groundwater for petroleum contamination would be even less necessary.

Mr. Gervason added that RWQCB was evaluating Moffett Field petroleum sites relative to the low-risk criteria. He noted that some sites are clearly low risk, some need active remediation, and some are intermediate. Mr. Graves said that accurate evaluation of risk is important to promote the wise use of funds. Dr. McClure asked whether RWQCB's teleconference workshops on this subject were continuing. Mr. Graves responded that the workshops were expected to be completed within a week.

VI. FREQUENCY OF MEETINGS DISCUSSION

Mr. Gill asked whether the members favored continued monthly meetings or would prefer to skip some meetings during the summer. Dr. McClure commented that he expected attendance to decline during the summer, but that significant issues would be decided during that time. Mr. Thomas Harney agreed and noted that continued momentum would be useful. Mr. Moss stated that opportunities might be lost if the RAB reduced meetings to a bimonthly basis and suggested that skipping the August meeting could be considered at a future date. Mr. Strauss asked what topics were expected to come up during the summer. Mr. Chou responded that the draft final station-wide FS report was scheduled for August and the OU1 and OU5 RODs were expected in June. Dr. McClure added that negotiations between the MEW companies, the Navy, and NASA were not settled. Mr. Moss suggested additional discussion of the upcoming schedule for Moffett Field documents and activities. Ms. Byster asked whether a calendar indicating document dates could be included with the RAB minutes. Mr. Strauss suggested that the RAB meeting frequency could be evaluated after the schedule was reviewed.

VII. RAB QUIZ

The RAB quiz was postponed due to lack of time.

VIII. AGENDA AND SCHEDULE FOR JUNE RAB MEETING

Mr. Paul Lesti suggested that the Navy's attorneys could present ideas to the RAB for discussion. Topics could include OU5 indirect restoration or the operation of Building 191. Mr. Moss suggested that examples of how other community groups work with the regulatory agencies might be a useful presentation. He noted that the Barron Park Association could present lessons learned. Mr. Siegel noted that a meeting announcement from the Federal Facilities Environmental Restoration Dialogue Committee was available for the RAB members. Mr. Moss noted that the next RAB meeting was scheduled for June 13, 1996. Mr. Moss closed the meeting at 9:15 p.m.