

MEMORANDUM

TO: Lenny Siegel
FROM: Peter Strauss
DATE: January 12, 2015
SUBJ: **Federal Facilities Agreement Between NASA and EPA**

NASA, EPA and the San Francisco Bay Area Regional Water Quality Control Board (RWQCB) have prepared a draft Federal Facilities Agreement (FFA). Comments are due January 12, 2015, although NASA and EPA have signed it in November 2014.

After a careful reading of this FFA, I think that it is a positive development. I do not believe that CPEO should make a formal comment, except perhaps to say that it supports the intent of the FFA.

In 1994, a majority portion of Moffett Field Naval Air Station was transferred to NASA. As part of that transfer, the Navy and NASA entered into an Memorandum of Understanding that established roles and responsibilities for environmental restoration and ongoing environmental compliance at the Site. This FFA does not effect the obligations of the Navy to address contamination at the Site pursuant to the 1990 Moffett FFA with the EPA and the State, or obligations of the Middlefield-Ellis-Whisman (MEW) Companies to address contamination at the Site pursuant to the 1992 Consent Decree and 1991 Unilateral Administrative Order, as amended. It does, however, require several responsibilities that NASA must undertake.

Appendices A and B summarize the most important requirements of the FFA. Although there is a Figure attached to the FFA, I have attached a Figure from another NASA document that provides a clearer depiction of the NASA Areas of Interest (AOIs), which will remain the responsibility of NASA. I have organized the remainder of this memo into categories that correspond to important aspects of the FFA, including specific actions and requirements that must be carried out by NASA.

Purpose of the FFA

The purpose of the FFA is to:

- Ensure that the environmental impacts associated with past and present activities at the Moffett Field Site are thoroughly investigated and appropriate remedial action is taken;
- Identify and schedule response actions to be taken where NASA is a source of contamination.
- Establish a framework and schedule for developing, implementing and

monitoring appropriate response actions at the portions of the Site where NASA was a source of contamination;

- Identify interim remedial action (IRA) alternatives where NASA was a source of contamination;
- Identify work that is the responsibility of NASA necessary to implement remedial actions already selected in a Record of Decision [ROD] issued by EPA or by the Navy in areas where NASA is a source of contamination;
- Ensure that NASA implements Land Use Controls (LUCs) in order to protect response actions taken by the Navy and the MEW Companies at Moffett Field;
- Implement LUCs at the Site where NASA is the landowner;
- Expedite the cleanup process to the extent practicable;
- Provide for State involvement.

Remedial Investigation/Feasibility Study (RI/FS) of Areas of Interest (AOI) 6 and 14

The FFA requires a new RI/FS for AOI 6 and AOI 14. This will be the sole responsibility of NASA. It is important because there is the potential for contaminants at these AOIs to migrate to Navy Site 25, the Stormwater Retention Pond and Eastern Diked Marsh, which has been cleaned up.

AOI 6, or the Lindbergh Avenue Storm Drainage Channel/Ditch (“Ditch”) was an approximate 2000 foot-long open, concrete-lined channel located along Lindbergh Avenue in the northeastern portion of NASA. It collected run-off from the western portion of NAS Moffett Field, including the area surrounding Hangar 1. The channel was closed in 1993. Contaminants of concern associated with the former ditch-were PCBs (Aroclors 1254, 1260, 1262 and 1268), lead, and petroleum constituents. NASA conducted remediation in 1994-1996, 2000 and 2001. One of the potential problems with the existing remedy is that residual contaminants in the ditch or the immediate surrounding area will migrate to areas that have been previously cleaned up (*i.e.*, Site 25). While NASA applied PCB action levels of 0.47 mg/kg (based on a juvenile mallard) in the northern most area, and 2.0 mg/kg residential goal in the southern part of the AOI, the final remediation goal used for Navy Site 25 is 0.2 mg/kg. Thus, the incongruous clean-up levels in soil for PCBs present a risk to Site 25.

The Stormwater Settling Basin (SWSB) is part of AOI 6. The SWSB is a concrete basin that receives all of the stormwater drainage from NASA. The SWSB is located within the boundaries of Navy Site 25 Eastern Diked Marsh, and the outfall enters the Eastern Diked Marsh. The primary contaminants in the sediment from the SWSB are PCBs, DDT, lead, and zinc. NASA conducts annual sampling and maintenance of the settling basin as well as the settling basin outfall area, and it provides the data to the Navy. These annual reports will be provided to EPA and the State.

Likewise, AOI 14, or the Former Soil Fill Area (FSFA) The FSFA consists of three peninsulas that jut into the Storm Water Retention Pond (Site 25). The FSFA consists of twelve-acres with several buildings. Previous surface and near-surface

soil sampling activities adjacent to and within the FSFA indicated the presence of PCBs, total DDT, lead, and zinc in excess of NASA's site-specific soil remediation levels. The source(s) of this soil are unknown. It is thought that some may have come from construction activities for the wind tunnel test section (Building N221B). In addition, soil materials from other sources were likely added to the AOI 14 site over time. The thickness of the FSFA varies from two to four feet at the southern end and from eight feet to sixteen feet at the northern end.

AOIs 3, 7, and 9

AOIs 3, 7, and 9 were broad areas identified for investigation of potential NASA and Navy sources of groundwater contamination that may contribute to the Regional Plume. This groundwater contamination is primarily volatile organic compounds (VOCs).

AOI 3 includes five former AOIs. AOI 1 was a Fuel Depot; AOI 2 includes several structures; AOI 3 includes several underground storage tanks (USTs) associated with these structures; and, AOI 12 is the N211 Hangar Area. Remediation of AOI 3 would be addressed in accordance with EPA's 1989 MEW Study Area ROD. NASA has a separate agreement with the MEW Companies concerning allocation of work for AOI 3. NASA Ames is conducting the remediation of petroleum compounds and the MEW Companies are conducting remediation of the VOCs. No wells are associated with this area.

AOI 7 includes Navy Site 8 North and NASA's Vertical Takeoff and Landing (VTOL) Pad. Solvents and oils were released from drums stored by the Navy at Site 8. Previous NASA actions included the removal of both contaminated soil and groundwater. In 2000 NASA installed two extraction wells for treatment of Navy Site 8 VOC releases within the Regional Plume.

NASA originally identified AOI 9 for further investigation of potential sources contributing to the Regional Plume. No NASA or other sources have been identified in the area of AOI 9. However, NASA agreed to take responsibility for Regional Plume activities in this area under its agreements with the MEW Companies.

Other AOIs

All other AOIs identified in the Figure at the end of this memo are not subject to this FFA. All but AOI 4 do not require further action. AOI 4 is regulated by DTSC and requires operation and maintenance.

Hangar 1

Hangar 1 (Navy Site 29) released PCBs, asbestos, lead, and zinc to the environment around the hangar, and those substances reached AOI 6 and Navy Site 25 through the storm drain system. NASA agreed to take over operation and maintenance of parts of Hangar 1. NASA will document and perform remedy operation and maintenance of these elements, as well as any operation and maintenance elements that NASA agrees to implement, in a NASA-specific long term management plan for Hangar 1. The Navy remains responsible for the operation and maintenance for all other portions of the Hangar 1 remedy, including maintenance of the coating on the

structural steel frame. Additionally, the FFA states that no change or transfer of any interest in the Facility will alter the responsibility of the Parties under this Agreement.

Hydraulic Control of the Regional Plume

EPA's 2009 Five-Year Review for the MEW Site identified certain concerns regarding hydraulic control of the Regional Plume. In 2012 the responsible parties submitted a Draft Work Plan for Hydraulic Containment of the Groundwater Plume to address these concerns. NASA agreed to install a monitoring well at the northernmost toe of the plume in the A2/B1 aquifer. Well installation will be conducted in accordance with the Final Northernmost A2-B 1 Aquifer Assessment Work Plan approved by EPA in June 2014.

Optimization

NASA's 2013 Annual Progress Report regarding the Regional Groundwater Remediation Program presented recommendations addressing optimization of the existing system operated by NASA and for evaluation of monitored natural attenuation in the northernmost area of the Regional Plume. NASA agreed to a complete additional characterization of the AI aquifer in the areas of wells NASA-1A through NASA-4A, and it will submit a separate work plan to evaluate and demonstrate monitored natural attenuation.

Land Use Controls

As the current land owner of Moffett Field, NASA has responsibilities in the development, selection, and implementation of response actions for both the Moffett Field Naval Air Station site and the MEW Study Area Site that may impact the portions of the Site owned by NASA. This specifically includes providing access, monitoring, and managing land in a manner that is consistent with selected Land Use Controls. LUCs will be developed to ensure the protectiveness of other parties' response actions at NASA-owned property. This includes implementation of Institutional Controls (ICs) to ensure protectiveness. For example, at the Navy's Site 26 on the eastern side of Moffett there is a need for ICs to reach long-term protectiveness. As land owner, NASA is also responsible for LUCs associated with the Navy's ROD for Hangar 1. The Long-Term Management Plan referenced Institutional Controls (ICs) that will be selected in the Final ROD for the Hangar. The Navy is developing a Final ROD for the Hangar that includes LUCs for the Hangar 1 response actions.

Vapor Intrusion

The 2010 MEW ROD Amendment addressed the potential long-term exposure risks from VOCs through the vapor intrusion pathway. In September 2011, EPA worked with the MEW Companies, NASA Ames, and the Navy to develop the Statement of Work for the Vapor Intrusion Remedy Remedial Design and Remedial Action (September 2011 SOW). Pursuant to an agreement among NASA Ames, Navy, and the MEW Companies, each entity took responsibility for implementing the Vapor Intrusion Remedy in a designated area. Additionally, NASA took responsibility for

the implementation of vapor intrusion-related ICs in areas that it owns where one of the other parties holds primary responsibility.

Site Management Plan

NASA's Site Management Plan (SMP) will be the management tool for planning, reviewing, and setting priorities for all response activities to be conducted by NASA. The SMP will contain timetables, plans, and schedules that indicate the times and sequences of events for the work to be conducted under this FFA. After the initial adoption of the SMP, each year NASA must submit to the other Parties a draft amendment to the SMP.

NASA will develop and implement a Community Involvement Plan as part of the SMP. This plan will address the need for a relationship with all interested community elements regarding environmental response activities. To the extent practicable, the meetings of the Project Managers shall continue to be held in conjunction with the Navy's RAB meetings as they have been in the past.

