

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

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Mr. Stephen Chao
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June 17, 1993
File NO. 2189.8009 [EA]

Subject: Comments on the Draft Operable Unit 1 Feasibility Study Report, April, 1993

Dear Mr. Chao:

These comments are based on the San Francisco Bay Regional Water Quality Control Board staff's review of the Draft Operable Unit 1 Feasibility Study Report, dated April 27, 1993.

General Comments:

The fact that the soil, leachate and groundwater at the landfill sites have been separated into two different operable unit Remedial Investigation (RI) and Feasibility Study (FS) reports makes it very difficult for the Regional Water Quality Control Board staff to successfully evaluate the conditions at the landfill. We can not accept this FS for the soils at Operable Unit (OU) 1 because it has not been sufficiently proven to our agency, through a comprehensive and technical evaluation of all the data available at OU1, that the leachate is not impacting the groundwater. Until this question is successfully answered, we will not approve the suggested design of a two foot loam cap for the landfills at Sites 1 and 2, and the passive gas collection trench at Site 1. Surface water infiltration does have the potential to increase mounding in the landfill forcing leachate to move radially and vertically which can potentially impact surrounding groundwater. An additional concern is that a loam cap will not protect ecological receptors, both deep rooted plants and the burrowing animals which have been documented to reside in these areas from potential contact with contaminated soils. Any cap designed for these landfills should restrict rodents and burrowing owls from attaining access to the contaminated soils below.

There needs to be a technical discussion of the potential for contaminants in the soils to leach into the saturated zones of the fill. Infiltration from the surface will tends to increase the likelihood for contaminants to further leach from the soil. Has there been any modeling or geochemical evaluation of the leachate characteristics, the soil contamination and annual rainfall and other surface water sources which would affect the mobility of contaminants in the soil?

From the data available from the OU1 and OU5 RI it is evident that the leachate at these landfills are contaminated. The leachate will continue to act as a source which potentially can impact surrounding groundwater, therefore the San Francisco Bay Regional Water Quality Control Board will require adequate corrective actions in accordance with Chapter 15, Title 23, California Code of Regulations. The corrective action which should be considered in the FS is

a containment system including a cap which prevents infiltration and hydraulic control and treatment of the leachate. The remedial design and implementation of this landfill closure will require the groundwater, leachate and soils at the landfills to be reviewed and evaluated together. It is common to dewater the waste prior to placing a cap on a landfill because the weight of the cap will potentially force leachate into surrounding groundwater. Dewatering the waste will also allow the fill material to compress and thus reduce the potential for future differential settlement. As part of the hydraulic control the water level should be kept low to create a separation between the waste and the groundwater. The bottom of the landfills are probably not a homogeneous layer of clay due to the nature of the sand, silt and gravel lenses and channels throughout the subsurface. It is important to determine the hydrology of the areas before a remedial design is implemented. Do the wells surrounding either landfill show any tidal fluctuations? What is the impact of the adjacent diked marsh and surface water on the hydrology of the landfills. Is there an gradient upwards from the A-2 aquifer to the A-1? These are technical issues which need to be addressed in choosing the correct type of cap and the necessary containment system.

Specific Comments:

pg. 1, par 1 Please specify what is meant by "landfill contents". Does this include leachate?

pg. 3, par 2 As discussed in the general comments, the scope of the OU1 FS can not be separated from the evaluation of pathways between the landfill soils and contents and the surrounding groundwater. The type of cap will depend on the containment measures necessary to isolate leachate contamination from the surrounding groundwater.

The OU5 Remedial Investigation report is still in draft form. The agencies have not concurred with the conclusions regarding the groundwater contamination.

pg. 32, par 3 PCBs were detected in the sediment samples collected in the Navy Channel near the outfall from Building 191. The presence of PCBs in this area may be due to the proximity of the Site 2 landfill, and the infiltration of groundwater and sediments into the storm sewer system. These data are contrary to the statement in the text that no PCBs have been found in sediment samples.

pg. 37, par 2 The existence of a surface water body to the west does not minimize the potentially adverse effects of the methane migration from site 1. In addition, the surface water body is seasonal and may not always be a barrier.

Section 1.4 The use of an occupational exposure scenario for the landfills has not been formally accepted by the regulatory agencies. As the present economic turmoil in our country unfolds it does not seem wise to count on the continued operation of government facilities, especially a primarily research facility such as NASA, for even the next ten years. In addition, evaluation of the risk at these landfills based on only potential exposures to humans is inappropriate due to the location of these landfills. There are many more ecological receptors in these areas than there are human. And though a fence can keep out humans it is impossible to control the migration of burrowing animals into the landfill areas. Any remedial design for these landfills

should be protective of both human health and the environment.

pg. 39, par 1 The inconsistencies between the constituents detected in the soil gas and the contaminants found in the soil and leachate seems to indicate that further investigative work should be conducted. Is the Navy satisfied with the results of the past sampling efforts? Will there be any confirmatory sampling during the remedial design phase?

pg. 44, par 2 The last ARAR waiver⁴ described in this section is applicable to EPA fund financed sites only, not to federal facilities, according to CERCLA Section 121(d)(4)(F) NCP Section 300.430(f)(1)(ii)(c)(6).

pg. 45, par 3 Chemical-specific State ARARs do exist for hazardous waste classification in Title 22. However, even if waste is classified below these threshold values, the landfill contents can still be classified as designated wastes under Title 23, Chapter 15.

pg. 46-47 Conclusions as to how the BAAQMD will respond to the Air SWAT report is premature. The Navy should attempt to contact the agency to find out the results of their review before a final remedial design is chosen. According to BAAQMD testing guidelines, any migration of methane gases offsite above 5%, as seen in one of the gas monitoring wells, needs to be reported to the State Integrated Waste Management Board.

pg. 48-49, Table 1 The following location specific ARARs should be added to this list: Water Quality Control Plan San Francisco Bay Basin Region 2, California Enclosed Bays and Estuaries Plan, California Inland Surface Waters Plan, State Board Resolution 68-16 "Statement of Policy with Respect to Maintaining High Quality Waters in California" and California Water Code, Division 7, Section 13000, the Porter-Cologne Water Quality Control Act.

pg. 51, section 1.5.3 Other State requirements for landfill closures which should be included in the ARAR list is Title 23, California Code of Regulations, Division 3, Chapter 15 and State Board Resolution 92-49 which establishes policies and procedures for clean up of all waste discharged and restoration of affected water to background conditions, in effect to water quality that existed before the discharge.

pg. 58, par 4 What is the rationale for concluding that the gas migration from Site 1 will not increase?

pg. 66, par 4 This agency does not concur with the opinion that minimizing infiltration and leachate migration are not remedial action objectives.

pg. 77, par 1 The loam cap will not protect deep rooted plants or burrowing animals from the methane gas or the contaminants in the soil.

pg. 80, par 4 Where will the methane monitoring wells be placed? Please include a figure which shows their locations.

pg. 86 Reduction in contaminant mobility is a criteria which applies to these landfills contrary

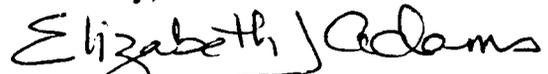
to what is stated here. The RWQCB is concerned about the potential for infiltration through the loam cap to impact groundwater, and this FS report states in Section 2.1 that reducing erosion and mobility of soil contaminants through rain and wind is a remedial objective.

pg. 103, par 2 What other types of long term operations and maintenance (O&M) will be required to keep the vegetation alive? Periodic watering of the vegetation will add to the infiltration rate if a permeable cap is in place. With Alternative 2, the cap without the gas venting layer, the Navy will need to finance additional soil layers, grading and reseeding of vegetation forever. Does the Navy really want to finance long term O&M since this is a closing Base?

Pg. 104 The choice of Alternative 2 (loam soil cap and trench vent) is not acceptable to this agency until further evaluation of the leachate and groundwater contamination is concluded. The contaminants presently found within the leachate are significant enough to require a containment system, which would mandate an impermeable cap, dewatering of the waste and a leachate collection system.

If you have any questions or concerns, please call me at the San Francisco Bay Regional Water Quality Control Board at (510) 286-3980.

Sincerely,



Elizabeth J. Adams
Project Manager

cc: Michael Gill, US EPA
Mail Stop H-9-2

Cyrus Shabahari, DTSC