

MEMORANDUM

April 23, 1996

TO: Jim Sullivan, Navy Co-Chair; Patricia Nelson, Community Co-Chair; Paul Hehn, Community Co-Chair; Standard Distribution List for Treasure Island Restoration Advisory Board; Administrative Record

FROM: John C. Allman, Community Boardmember, Treasure Island Restoration Advisory Board

RE: Comments on the *Bench Scale Soil Bioremediation Treatability Study: Draft Work Plan*, March 15, 1996

The purpose of this memorandum is to make my comments concerning the above mentioned document. My comments are of a general nature, and pertain to the overall purpose of the Treatability Study (TS) as it applies to Treasure Island (TI). My comments are as follows:

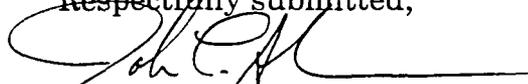
- 1) The study does not identify the manufacturer nor any detailed information about the product X-19, other than the fact that it is a humic polymer. Since receiving the Treatability Study for review I have learned that X-19 is manufactured by X-19 Biological Products, located in Santa Clara, Ca. This information, and other characterizing details, should have been included in the study draft, since it is a novel product, and the likelihood of anyone reviewing the study being familiar with it is very slim.
- 2) Although two sites were identified as representative samples for the island, the TS document does not describe where the technique would be applied, if the TS is successful. Although this is only a Treatability Study, and not a Feasibility Study of applying the technique to TI, it is helpful, if not necessary, to know the final application when determining whether proper controls and samples are being used in the TS. Will it only be applied to the two described sites, or may it be applied to other locations on TI?
- 3) The TS describes how the composite samples will be collected for the TS, but does not state how the technique will be applied to an entire site during remediation. Will the topsoil be removed to the same depth as the TS samples, and will the actual soil be homogenized in the same manner as the TS samples?
- 4) I contacted one of the endorsers of X-19, whose endorsement letter was contained in the literature which I obtained from X-19 Biological Supply, and inquired as to the shortfalls of the method when it is applied to an actual site. The person informed me that the reduction of product to

nondetect levels took longer than originally estimated before work began. He also stated that it takes a lot of space to apply the technique, which is normally done above ground at the site, although it is not stated in the study how the method will be applied at TI. Is consideration being given to the amount of space and maximum time required to perform the remediation on the contaminated sites? (The remediation mixture will be approximately two parts soil to one part X-19. This means that the entire mix will occupy approximately 50% more space to incubate.)

- 5) What will be done with the ~50% excess material, after the original excavation hole has been filled with a sufficient volume of remediated soil? Will the excess be used as clean topsoil for other sites on TI?
- 6) While the process is being carried out, will remediation at sites *underneath* the treated piles of soil/X-19 be prevented or suspended if the process takes longer than expected?
- 7) I was also informed that chunks of clay will contain pockets of fuel which may not be bioremediated effectively in the mixture. How will the soil be broken up in the study *and* in the real application to ensure that all of the contaminants are available to the organisms?
- 8) Finally, I was informed that the degradation of fuels is very difficult to measure when X-19 is present, as many of the decomposition products of the bioremediation interfere with the quantitative analysis of fuel constituents, as they show up in the same location on spectra as the fuel components themselves. Only certain laboratories, recommended by X-19 Biological Products, assert that they can measure the quantitative degradation of product in the soil. Is the lab to be used for the TS the same lab that will do the monitoring analyses for the actual remediation sites, and is it one of the labs recommended by the manufacturer of X-19? Are the "dependable" methods used by these labs still in compliance with standard methods, or are modifications made which are not part of the approved method?

While the majority of these questions do not relate directly to the Treatability Study itself, I believe that they are important ones to answer in such a report as they help identify whether the Treatability Study is necessary to perform at all. This is especially the case if the technique cannot be practically applied at the sites of interest. I hope that these comments prove helpful in generating the final version of the Treatability Study. If anyone has any questions, please do not hesitate to call me.

Respectfully submitted,



John C. Allman  
Community Boardmember

Admin Record (3 copies)