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RG:0124

Ms. Kathleen A. Dadey
U.S. Army Corps of Engineers
Honolulu Engineer District
Operations Branch
Attn.: CEPOD-ET-PO
Building 230
Fort Shafter, Hawaii 96858-5440

Dear Ms. Dadey:

Site Management Plan (SMP) The Hawaii Ocean Dredged Material Disposal Sites

I have review the draft management plan cited above and offer the following comments for consideration by the Corps and Environmental Protection Agency:

According to the Draft Site Management Plan (SMP), Section 506 of the Water Resources Development Act of 1992 (WRDA 92) amends section 102(c) of the Marine Protection Research and Sanctuaries Act (MPRSA) of 1972 to require the development of a SMP for all ocean disposal sites. The contents of the SMP are to include:

1. A baseline assessment of conditions at the site;
2. Special management conditions or practices to be implemented at the site that are necessary for protection of the environment;
3. Consideration of the quantity of the material to be disposed of at the site, and the presence, nature, and bioavailability of the contaminants in the material;
4. A program for monitoring the site;
5. Consideration of the anticipated use of the site over the long term, including any need for management of the site after the closure; and
6. A schedule for review and revision of the plan.

As you know, I have been involved with the environmental assessment of the South Oahu Site (SOS) since 1976 and have recently completed some additional work in the near vicinity of the SOS as part of a Corps contract to inventory unexploded ordnance (UXO) in the offshore waters of Honolulu. As part of that project, we developed an integrated acoustic (side-scan sonar) and fiber optic video imaging system in concert with a differential geographic positioning system to search for, locate and identify UXO's. Because the earlier reports of UXO's offshore of Honolulu and Pearl Harbors had specifically linked their location with that of dredged material disposal prior to 1976, our current work provided us with the opportunity to look at old dredge spoil deposits simultaneously while searching for UXO's. The equipment developed as part of the UXO inventory project has first order application to virtually all six components of the proposed SMP. Compliance with the components of the proposed SMP would be greatly enhanced by use of this equipment at a substantial cost savings (probably of the order of 50% or more) over the current grid system of ground truth sampling based on the results of side scan mosaiking alone as was recently employed at the South Oahu Site by the US Geological Survey team. Furthermore, the video work provides reproducible "hard copy" documentation of the conditions at the site at the time of the survey, making subsequent monitoring work infinitely easier and more accurate.

Examples of how this video system might be applied to implementation of the proposed SMP are as follows:

- direct, real time, visual documentation of geological, physical, and biological characteristics of the site for both baseline and long term site monitoring;
- ability to identify specific areas of interest to minimize costly ground truth sampling (in contrast to the grid system currently being employed by the USGS and other contracted entities monitoring deep water dredged material disposal sites);
- reproducible documentation (mapping) of the horizontal distribution of the dredged materials at each site, over time.

In addition, recent advances in digital image processing permits even greater extraction of physical data from the video images. We are currently exploring the use of various computer image processing programs to determine which might be feasible to apply to our video images to quantify bedforms, grain size, or biota in the videos.

The Monitoring Program (E) described in the draft SMP mentions that baseline surveys at the other four Hawaii Ocean Dredged Material Disposal Sites (ODMDS) will be conducted to confirm the findings and conclusions reached with regard to the likely similarity of those sites with the Oahu ODMDS. I strongly urge that these proposed baseline surveys make use of the existing video technologies in Hawaii so as to minimize the cost of the surveys and maximize the utility of the information obtained for long term management purposes. We noted that major bottom relief in the form of vertical coral heads some 30 meters or more in height are present in areas very near the SOS. These vertical cliff faces were not detected in the USGS side-scan sonar mapping but were filmed and documented with our video system.

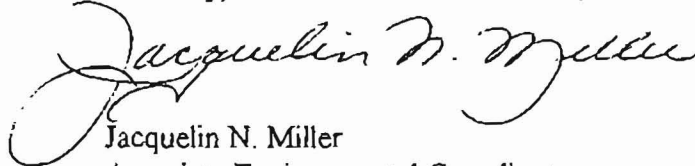
The draft SMP mentions that the results of the USGS studies of the South Oahu Site confirmed that the dredged materials remained where originally disposed and that little was

resuspended and transported by bottom currents. Our videos suggest that may not be the case. The video images gave no indication of large mounds of consolidated dredged materials but did suggest a blanketing effect as would be expected from the disposal of materials acquired by a suction dredge, as used in the major dredging events of Pearl and Honolulu Harbors. Furthermore, we find direct, irrefutable evidence of strong bottom currents, well developed bedforms, and evidence of scour around larger pieces of debris throughout the area offshore from Honolulu and Pearl Harbors. While the material may not be re-suspended by the bottom currents which have been measured at speeds up to a knot (Chave and Miller, 1977), it is highly possible, and we believe likely, that much of the fines are carried great distances. Support for this belief is also provided by the grain size analysis of the cores taken by both our studies in 1976-1978 and the more recent cores taken by the USGS which were dominated by sand sized materials (>70% in most cases) just the reverse of the grain-sized composition of materials taken from the dredge itself which were more often 70% clay and silt and only 20-30 percent sand sized. Furthermore, because the bottom of Mamala Bay is so littered with recent and past dredged materials, it seems quite impossible to state with certainty that the material is not being resuspended or transported by ocean currents during its fall.

Nothing in these comments should be construed to suggest that significant impacts are likely to occur with continued disposal at the Hawaii Sites. However, except for the South Oahu Site, insufficient recent information is available to evaluate potential impacts at the other 4 sites. If baseline monitoring of the other 4 sites is to be undertaken, as is stated in the SMP, then I would most strongly urge that video mapping of each disposal site and their immediate environs coupled with differential GPS for precise navigation/location of the video footage be required. A concentrated effort to video all of the sites, including the South Oahu Site, would provide a complete and permanent record of the conditions at each site at the time of taping and provide an absolute, tangible and quantifiable baseline against which subsequent comparisons could be made as part of a monitoring program. Should ground truth samples be needed, their precise location can be determined from an examination of the video footage, thus permitting specific habitat types to be sampled, not the costly, multiple, hit and miss sampling required for statistically valid random or grid pattern efforts.

I appreciate the opportunity to provide comments on the draft SMP and would be pleased to answer any questions you may have on the various points of my review.

Sincerely,



Jacquelin N. Miller
Associate Environmental Coordinator

cc: Allan Ota
Roger Fujioka