



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Admin.
National Ocean Service
Office of Ocean Resource Conservation and Assessment
Hazardous Materials Response and Assessment Division
c/o EPA Waste Management Division (HEE-6)
J.F. Kennedy Federal Building
Boston, MA 02203
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Ms. Christine Williams
U.S. EPA Waste Management Division
J.F. Kennedy Federal Building
Boston, MA 02203

Mr. Philip Otis
U.S. Department of the Navy
Northern Division - NAVFAC
10 Industrial Highway
Code 1811/PO - Mail Stop 82
Lester, PA 19113-2090

Dear Ms Williams/Mr. Otis:

NOAA has recently met with EPA, the Department of Interior (U.S. Fish and Wildlife Service) and the State of Rhode Island to discuss the data interpretation for the Allen Harbor Landfill studies. NOAA has reviewed such studies since early 1990 and presently believes that the Navy should isolate the contaminants in the landfill. I have provided you, or your consultant (EA Engineering), my previous correspondence that outlines the basis for this conclusion. I highlighted the parts of the site reviews which are relevant to the landfill source control issue and NOAA's requirements for the remedy.

Moderate sediment contamination exists in the intertidal sediments at the toe of the landfill. There appears to be little dispute concerning this conclusion. In summary, concentrations of PAHs were highest in intertidal sediments adjacent to the southern portion of the landfill. Most of the PAHs exceeded ERLs; exceedance of ERMs were limited to phenanthrene and fluorene at one station. DDE and PCBs also exceeded their respective ERLs at several stations in intertidal areas near the landfill; exceedance of ERMs were limited to one station for DDE and two stations for PCBs. Several metals exceeded ERL concentrations in wetland and intertidal sediments; ERMs for copper, lead, nickel, and zinc were exceeded at one intertidal station. Lower concentrations were observed in subtidal stations in Allen Harbor. In addition, significant mortality was observed in 9 of 32 (28 percent) of the amphipod bioassay stations and 6 of 32 (19 percent) of the sea urchin sperm bioassay stations. Mortality was greatest at intertidal and shallow offshore stations. There was a strong correlation between COCs in sediment and amphipod mortality at two wetland stations adjacent to the landfill.

Data results also showed higher neoplasia in soft-shelled clams near the landfill. Higher bivalve condition indices (i.e., greater adverse impact) were observed in clams collected nearest the landfill. However, a poor correlation was observed between contaminants of concern in sediment and condition indices for bivalves. Yet, strong correlations (r^2 between 0.5 and 0.93) were observed between contaminants of concern in the sediments and bivalve tissue concentrations for PAHs, DDE, and PCBs. The Ecological Risk Assessment concluded that significant risk to aquatic organisms were associated with PAHs, PCBs, DDE, and metals

throughout the intertidal area of the south landfill region. Less, but significant risk was associated with areas adjacent to the north landfill. There was little evidence for risks adjacent to Calf Pasture Point or subtidal areas of the harbor.

Sediment and tissue data show a fairly consistent distribution which suggests discharges are, or have occurred from, the landfill in the form of active seeps, runoff, or erosion to the Allen Harbor intertidal zone, particularly in the southern portion of the landfill. The present debate relates to the percentage of each as a source of contamination to Allen Harbor. NOAA awaits the results of the ground water modeling study to learn the most recent estimate. NOAA suspects that the groundwater is a significant conduit of landfill contaminants into Allen Harbor given the concentrations of inorganics and PAHs in leachate samples collected from the face of the landfill. However, we understand that tidal waters possibly may liberate the landfill contaminants as the tide drops; hence, the relatively high contaminant concentrations in the leachate. Nevertheless, NOAA believes that the original Navy proposed plan that includes a RCRA Subtitle C multilayer cap, supplemented by an upgradient slurry wall and sheet pile wall likely is the most protective, and possibly cost-effective remedial measure.

NOAA appreciates the efforts that both the EPA and the Navy have undertaken in coordinating with the natural resource trustees. We believe that in this way a comprehensive settlement, including abatement of the contamination and compensation to the public for the lost use of the natural resources, may be reached. Sometime in the future we would like to discuss, as part of the remedy, the prospect of constructing a marine wetland (i.e., salt marsh) in front of the landfill to partially duplicate conditions as they existed before the construction of the landfill.

Sincerely,



Kenneth Finkelstein, Ph.D.

cc: Tim Prior (USF&WS)