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United States Department of the Interior



FISH AND WILDLIFE SERVICE
Chesapeake Bay Field Office
180 Admiral Cochrane Drive, Suite 535
Annapolis, Maryland 21401
December 1, 1993

Commander
LANTNAVFACENCOM
Attn. Code 1822
Mr. Ken Walker
1510 Gilbert Street, Building N-26
Norfolk Naval Base
Norfolk, VA 23511-2699

RE: Ecological Assessment
portion of the Baseline
Risk Assessment for the
Camp Allen Landfill

Dear Mr. Walker:

The U.S. Fish and Wildlife Service (Service) has reviewed the Ecological Assessment for the Camp Allen Landfill. These comments are intended to insure that site assessment and remediation are fully protective of ecological resources.

The report's conclusion that site activities have not resulted in adverse impacts on ecological resources does not appear to be fully supported. This letter provides a description of deficiencies in the report and a recommendation for a follow-up study which would help clarify some of the uncertainties in the assessment.

The Service is concerned that the sediment particle size analyses on the benthic samples were not completed due to "matrix interference". Particle size analysis is an essential component for any ecological study on the benthic community because it can be an important influence on the types and numbers of taxa present at a sampling location.

There are several statements that refer to the Long and Morgan (1991) effects range - low (ER-L) and effects range - median (ER-M) concentrations as screening sediment values developed by the National Oceanic and Atmospheric Administration (NOAA). This is incorrect. In bold print on page 8 of the report the authors state, "Although the consensus ER-L and ER-M concentrations may be used by others as guidance in evaluating sediment contamination data, there is no intent expressed or implied that these values represent official NOAA standards." The values are also incorrectly described (page 5-43) as Applicable or Relevant and Appropriate Requirements (ARARs). These values are not agency-sanctioned values and cannot be used as ARARs. Finally, the values are described as being useful for evaluating risks to fish (page 5-23). The values are almost always

developed from sediment toxicity test results or benthic community data. Very few fish data are included in the Long and Morgan report. The Long and Morgan values are properly used as indicators of sediment concentrations of chemicals that were associated with adverse biological effects (either sediment toxicity or depauperate communities).

The conclusion of the Ecological Assessment is that the benthic community does not appear to be impacted at any of the sampling locations. Although these statements are accurate in the strictest sense, the Service is concerned that the statements imply that there are no risks. There are many uncertainties associated with the health of the benthic community. The three freshwater stations are dominated by tubificid worms, which are pollutant-tolerant taxa (Klemm et al. 1990). Although macroinvertebrate densities do not indicate a pattern associated with degradation moving downstream from the source area, there is no suitable control station to support the statement that the landfill does not appear to be impacting these stations. An alternative explanation is that the landfill is impacting all three of these stations to a similar extent. 

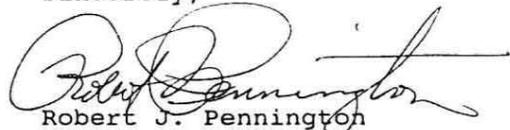
The report states that these stations are typical of urban drainage ways and that the dominance of tubificids may indicate that the system is affected by organic pollutants. Without a suitable control station, it is impossible to reject the hypothesis that these stations are typical of polluted urban drainages and that the landfill may have contributed to that pollution.

The Service is concerned about the concentrations of cadmium, chromium, lead, zinc, chlorinated pesticides, and polychlorinated biphenyls (PCBs) in sediments at stations BC01, -02, -03, and -04. For example, the concentration of Aroclor 1254 was 7.6 mg/kg at station BC02. This concentration is 19 times higher than Long and Morgan's ER-M value of 0.4 mg/kg, which is used here as a benchmark. The DDD concentration of 4.2 mg/kg exceeds the ER-M value of 0.02 mg/kg. Lead and zinc concentrations at this station were 497 and 1020 mg/kg, which exceed the respective ER-M values of 110 and 270 mg/kg.

In view of the data indicating the presence of inorganic and organic contaminants at levels of possible concern, and the dominance of pollutant-tolerant macroinvertebrates, the Service recommends performing sediment toxicity tests at the five sampling stations. Ten-day static tests should be conducted with *Hyalella azteca* for the freshwater stations. If the salinity of the tidal stations is less than 10 ppt, *Hyalella* would also be an appropriate test species. If the tidal stations have greater than 10 ppt salinity, an appropriate saltwater amphipod (*Leptocheirus* or *Ampelisca*) should be used. The tests should be conducted according to American Society for Testing and Materials (ASTM) guidance (document E 1383 - 92) and include appropriate control and reference sediment tests. Particle size should be analyzed and, if possible, the tests should be conducted with silt-clay dominated rather than sandy sediments.

The Service appreciates the opportunity to comment on the Camp Allen Landfill assessment. Please call Fred Pinkney or me at 410-269-5448 if you wish to discuss these comments.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert J. Pennington". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Robert J. Pennington
Chief, Branch of Water Quality

CC:

Virginia Field Office, White March, Virginia
(ATTN: Karen Mayne, Supervisor)

References

- Klemm, D.J., P.A. Lewis, F. Fulk, and J.M. Lazorchak. 1990. Macroinvertebrate field and laboratory methods for evaluating the biological integrity of surface waters. EPA/600/4-90/030.
- Long, E.R. and L.G. Morgan. 1991. The potential for biological effects of sediment-sorbed contaminants tested in the National Status and Trends Program. NOAA NOS OMA 52. Seattle, WA.