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National Oceanic ar
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Office of Ocean Resources Conservation and Assessment
Hazardous Materials Response and Assessment Division
Coastal Resources Coordination Branch
c/o USEPA Waste Division
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NAS PENSACOLA
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25 March, 1993

Commanding Officer
Code 1851
SOUTH NAVFACENGCOM
PO Box 190010
North Charleston SC 29418

Attention: Ms. Linda Martin, Project Manager

Dear Ms. Martin:

Review of the subject documents for Naval Air Station Pensacola, Pensacola, Escambia County, Florida was conducted by technical representatives of the Natural Resource Trustee for the National Oceanic and Atmospheric Administration, U.S. Department. Of Commerce. The following comments are offered for your consideration.

Documents Reviewed:

1. Draft Remedial Investigation/Feasibility Study Work Plan for Site 40 - Bayou Grande December 23,1992.

2. Draft Remedial Investigatiofleasibility Study Work Plan for Site 41 - NASP Wetlands January 15, 1993.

3. Draft Remedial Investigatiofleasibility Study Work Plan for Site 42 - Pensacola Bay December 23, 1992.

Background:

The National Oceanic and Atmospheric Administration (NOAA) is authorized under the provisions of Section 107 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and Subpart G of the National Contingency Plan (NCP) to protect its trust resources against the injurious effects of hazardous substances. These comments are provided so that site remediation decisions made at Naval Air Station Pensacola (NASP) will be protective of trust resources that are threatened or adversely affected by site-related contaminants, or could be affected in the future.

Site Description:

The NASP is located on a peninsula in Pensacola Bay, southwest of Pensacola, Florida. The station is bounded by Bayou Grande on the north, Pensacola Bay to the east and south, and contains approximately 81 wetland areas.

NASP facilities include a large industrial complex for major repairs and refurbishment of aircraft engines and frames. Beginning in the 1930s and continuing until 1973 when an industrial waste treatment plant began operation, industrial wastes from operations at the site were discharged directly into Pensacola Bay and Bayou Grande. The production, handling, and disposal of hazardous materials and/or wastes has resulted in numerous sites on NASP that are potential sources of contamination that could affect areas containing NOAA trust resources.

Contaminants/Pathway Description:

Groundwater at NASP is a primary pathway for exposure of site-related contaminants to NOAA trust resources. Groundwater flow occurs in a surficial sand and gravel aquifer with the main producing zone at a depth of 18 to 36 meters below land surface. The water table is shallow, between 1.5 to 4.5 meters over most of the site, and is influenced by tides and storms. Soils are highly permeable fine- to medium-grained quartz sand. Direction of groundwater flow has not been defined, but is considered to be generally southward towards Pensacola Bay, with the exception of groundwater in some north and northwest areas that flows northeasterly toward Bayou Grande. Below the surficial aquifer, an intermediate system occurs at a depth of about 90 meters and the deep Floridan aquifer occurs at a depth of about 460 meters.

Surface water discharge into Bayou Grande and Pensacola Bay also is a potential exposure pathway of concern to NOAA. Large areas such as the two airfields and the industrial areas have been paved, and surface water flow has been channeled into a system of drainage ditches and storm sewers leading into the bayou and bay. A concrete levee spans the shoreline along the southeastern portion of the base and extends into the subtidal zone of Pensacola Bay. NASP also includes wetlands that are potential receptors of site-related contaminants, and which may represent sources for further discharge into the bayou and bay.

Trust Resources at Risk:

The habitats of primary interest to NOAA, Pensacola Bay and Bayou Grande, comprise an estimated 253 hectares of estuarine wetlands, including intertidal and shallow areas, and eelgrass beds These environments are part of the Pensacola estuary and serve as estuarine nurseries and adult habitat for numerous marine species. Pensacola Bay is partially sheltered by barrier islands to the south. Bayou Grande is a shallow protected inlet of Pensacola Bay. Little is known about the aquatic habitats in this embayment, but its physical characteristics are similar to the sheltered, lower-salinity nursery areas in the upper reaches of the Pensacola estuary. Significant amounts of eelgrass habitat have been lost within Bayou Grande within the last two decades.

Shallow estuarine environments play an important role in the recruitment of numerous fish species to the Gulf of Mexico. Several species, such as ladyfish, sheepshead, members of the drum family (drums and seatrout), and mullet are dependent upon estuaries during their early life history. Fisheries data show a high abundance of adult fish in Pensacola Bay, numbering over 180 species. Some of the most abundant are spot, pinfish, Atlantic croaker, gulf menhaden, bay anchovy, longspine porgy, silver perch, southern hake, inshore lizardfish, gafftopsail catfish, sand seatrout, and spotted hake.

Southern and spotted hake, ladyfish, red drum, sheepshead, and Atlantic croaker are among the economically important species common to the bay. Recreational and commercial fisheries are present throughout the Pensacola estuary; primary species caught include Spanish mackerel, seatrout, drum, Atlantic croaker, snapper, amberjack, and porgy.

Commercial fisheries for Eastern oyster, blue crab, and mullet also occur in the Pensacola estuary. Brown shrimp are fished commercially; although juvenile white shrimp occur in the bay, recruitment to adult populations is too low to support a comparable commercial fishery. Recreational and commercial shellfishing is prohibited in Bayou Grande by local ordinance for resource management purposes. Shellfish harvests occur in portions of the bay, but may be periodically restricted due to high coliform counts. Most of these restrictions are associated with high precipitation levels that increase runoff into the bay.

Threatened or endangered species near the site include the Gulf sturgeon, which is currently being considered for threatened species status by the U.S. Fish and Wildlife Service. The State Fisheries Commission is considering a moratorium on fishing of striped mullet. Manatees, an endangered marine mammal, previously have been sighted in areas adjacent to the site. Atlantic bottlenose dolphin also have been sighted regularly near the site.

Comments:

Overall, the work plans for all three sites are based on a new scientific methodology developed for EPA's Environmental Monitoring and Assessment Program (EMAP) that has the goal of determining what the ecological status of an ecosystem may be in comparison to itself over time. EMAP is based on ongoing surveillance of indicators of ecological condition. Although many of the methods and procedures in EMAP are useful in ecological risk assessment, the program, as a whole, is not a relevant or appropriate means to address the issues or concerns in the remedial process. The general approach to ecological risk assessment involves source characterization, exposure pathway determination, and receptor identification. Data-gathering steps taken within the RI/FS should consider ecological risk assessment needs so that an ecological risk assessment may be made a part of or ancillary to the RI/FS report. EMAP does not address critical information needs of cause and effect relationships between the original sources of contamination and whatever condition that sites 40, 41, and 42 may be in as a result of contamination by activities stemming from the base.

Contamination at NASP occurred over extended time periods, and involved many different contaminants and a widespread area. The situation at NASP presents a complex and difficult task to understand, much less to provide answers for remediation. A general approach to devising RI/FS work plans, however, can be effective if the whole picture as well as the individual sources of contamination are taken into account.

The first step that the RI/FS for the three sites should accomplish is to determine where sampling efforts need to be concentrated for maximum effectiveness in site characterizations.

Sampling locations should be chosen with regard to a number of different parameters:

- Both groundwater and surface water pathways between potential sources of contamination (PSC) and all waters of interest should be fully characterized. Contaminant plumes should be described to determine where they are, and whether they represent pathways that should be considered as a present or future source of contamination.

- Both soils and sediments that are in contact with groundwater and surface water pathways between potential sources of contamination (PSC) and all waters of interest, should be fully characterized to determine if they should be considered as a present or future source of contamination.

- Complete characterizations of sites 40, 41, and 42 should be performed. For sites 40 and 42, this should begin with creating bathymetric charts of the areas of concern, and conducting sediment characterizations of those areas. Emphasis should be placed on those areas near potential surface water and groundwater discharges zones. Sediment characterization should include measurements of total organic carbon, grain size, and acid volatile sulfides; the latter is important for trace element analysis. Depth profiles can point to probable locations of contaminant deposition. After these steps have been accomplished, sampling locations can be established with a higher degree of accuracy and with a greater likelihood that the most probable areas of concern have been defined.

- Once sampling locations have been established, analysis of samples should use ecologically relevant limits of detection. Contract laboratory protocols (CLPs) should be modified to obtain quantitation limits at or below sediment ER-L concentrations (Long and Morgan, 1990). Analysis of ground and surface water should use Ambient Water Quality Criteria (AWQC) as quantitation limits for contaminants.

Once sampling has been accomplished according to the above general plan, areas of concern can be identified. Those areas that have the potential of causing further injury themselves, or serve as an exposure pathway, can be further characterized by implementing studies that includes sediment and water toxicity testing, macroinvertebrate characterization, bioaccumulation studies, and further chemical analysis. Based on these results, an ecological risk assessment can be accomplished and any needed remedial actions can be determined.

In addition to the general comments above, specific comments are presented below:

- Characterization of the yacht basin in Bayou Grande along the shoreline adjacent to site 11 should be focused on because of high contaminant concentrations measured previously in samples collected from adjacent sediments, and because landfilling of hazardous wastes may have occurred along the shoreline.

- At the western end of Bayou Grande, a drainage channel that drains a portion of NASP discharges about 1.5 km west of the point where the NASP property line intersects the bayou, and may be contributing contamination from Forest Sherman Field. There does not appear to be any sites within the drainage area of the channel, but because of possible inputs from the drainage channel and tidal influences within the bayou, it is recommended that a few samples be collected in the vicinity of the channel discharge point.

- The planned Pensacola Bay and Bayou Grande investigations should provide additional information about the transport of contaminants from sites (PSCs) identified as sources. It is important that adequate source investigations are conducted, including determination of groundwater flow rates and direction and surface water runoff patterns during high intensity storms. These studies are crucial to the sampling discussion above.

- The work plans place great emphasis on wetland vegetation as an exposure indicator. Vegetation is relatively unresponsive to contamination, especially trace metals. Examining vegetation patterns will have little value for the ecological risk assessment.

- Some wetlands areas have been described as unavailable to site contamination due to distance from contaminant sources and other reasons. These areas should be included

within the characterization as described above so that this determination can be based on stronger evidence.

Thank you for providing NOAA the opportunity to comment on this site and for keeping me appraised of ongoing activities. I will be happy to discuss any questions or comments pertaining to this review that you may have. My telephone number is (404) 347-5231.

Sincerely yours,

Waynon Johnson
Coastal Resource Coordinator
NOAA, Region IV

cc: Allison Drew, Remedial Project Manager, EPA

Reference:

1. Long, Edward R. and Lee G. Morgan. (1990) ***The Potential for Biological Effects of Sediment-Sorbed Contaminants Tested in the National Status and Trends Program.*** NOAA Technical Memorandum NOS OMA No. 52. Office of Oceanography and Marine Assessment. Seattle, Washington. 175 pp. and Appendices.