



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846



In reply refer to:
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AUG 11 2004

Thomas Macchiarella
BRAC Environmental Coordinator
Department of the Navy, Southwest Division
Naval Facilities Engineering Command
1230 Columbia Street, Suite 1100
San Diego, California 92101

Subject: Alameda Site 2/West Beach Landfill and Wetlands Sampling Work Plan

Dear Mr. Macchiarella:

Thank you for providing the U.S. Fish and Wildlife Service (Service) with the opportunity to review and comment on the Navy's Draft *Remedial Investigation Sampling Work Plan at IR Site 2 West Beach Landfill and Wetlands*. The document was received July 9, 2004, and comments were requested by August 11, 2004. These comments address contamination-related issues and our concerns about the potential effects of the proposed work on the endangered California least tern (*Sterna antillarum browni*) (least tern). This response is provided, in part, in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act).

Endangered Species Issues

Wet season sampling, habitat mapping, and site survey actions are proposed in the project area in the spring of 2005. Proposed wet season sampling and site survey work would be conducted until April 27. In 2003 and 2004, least terns have arrived at the nearby colony site on April 19 and April 20, respectively. The Service is concerned about the proposed work being conducted in the project area during the latter half of April 2005 because of the potential effects on the distribution and behavior of avian and mammalian predators in the project area in relation to the colony site. In this regard, all work activities should be completed in the project area on or before April 15, 2005, to avoid potential adverse effects to least terns. This work may be initiated earlier in January or February 2005 to accommodate the time period needed to accomplish the proposed work. The Service has no concerns about the timing of the work proposed in fall 2004 as it relates to potential impacts to least terns.

Provided that all work activities are completed in the project area on or before April 15, 2005, the Service has determined that the proposed project is not likely to adversely affect the least tern or any other federally listed or proposed species. In that context, unless new information reveals

effects of the proposed action that may affect listed or proposed species in a manner or to an extent not considered, or a new species or critical habitat is designated that may be affected by the proposed action, no further action pursuant to the Act would be necessary.

Major Environmental Contaminant Concerns:

1. The segregation of wetland and open water habitats is unnecessary and may confound the risk assessments given the scale of these areas and the degree of water-level changes. Water-level fluctuations would make any distinction between “non-inundated” wetland soils and open water sediment arbitrary. Sample locations under water during a wet season sampling could be dry or have wetland plants growing on them by the end of the season. Therefore, it is unclear how the soil/sediment samples associated with both habitats realistically could be separated. The Service recommends all sample locations in the wetland and pond area associated with each pond be used to assess potential risk to both wetland and open water receptors.
2. The proposal to screen against reference/background at every endpoint and stage of risk analysis process is unnecessary. The Service recommends reference or background exposure be considered as part of risk management.

Specific Environmental Contaminant Comments:

Section 2

Page 3. Please describe the condition of West Beach landfill and wetland area prior to Navy use. For example, was the area previously marsh that was diked or was it formed by fill placement extending into the bay? This historical information is applicable in determining the appropriate ambient conditions expected in the absence of Department of Defense activities.

Page 8. Despite the limiting factors the Navy mentioned, the wetland habitat is used extensively by many avian species, particularly waterfowl and shorebirds, and was a historic breeding area for Caspian terns.

Page 10. According to Service staff at Alameda, only some raptors that continue to prey on least terns despite aversion methods are killed. Other raptors that are live trapped at the tern colony are held off-site for the remainder of the nesting season and then released. Peregrine falcons are harassed, but not killed or trapped, even if they prey on least terns. Staff tries to balance tern and predator needs. Please revise the statements regarding raptor culling for tern protection and the influence of predator management on the use or quality of the Site 2 habitats.

Table 2-3. Please clarify which species have ever been observed on site, in addition to whether they were observed in 1997.

Table 2-3. Please note the source of feeding guild information.

Page 16. Based on Table 2-3, 15 species of birds breed in site 2, but in the text, this is characterized as “low diversity.” Please provide additional support for this statement or remove it.

Page 17. The South pond would be expected to have higher salinity if there is no tidal flushing and water loss is only through evaporation or groundwater recharge. So salinity would be expected to increase with water evaporation in the dry season, decrease with the onset of the rainy season, but could increase over years because of the limited flushing of salts out of the pond.

Page 17. Given the bird use of the area, the standing pool of invertebrates may be low because predation occurs rapidly. Another hypothesis could be that contamination is limiting invertebrate populations to a few resistant species. A benthic macroinvertebrate survey could be used to determine if this is occurring.

Page 17. Please clarify the meaning of the following statement: “this assumption [that all birds use both ponds] may be revised if additional information is collected during future sampling activities to indicate that some birds might not use the ponds.” If a bird has been observed at the site historically, it should be assumed as a potential future species for the site, even if it is currently absent.

Page 17. While mammals might not use the open water habitat directly, they may be part of the open water food chain by feeding on the associated receptors, such as predation of waterfowl nests.

Page 17. Please clarify the abundance of the two fish species found in the ponds. If these species are abundant, please remove the statement that the ponds do not have significant fish populations.

Page 18. Please describe the degree of uncertainty associated with using facility records and interview information to determine disposal locations. Do any areas have original survey locations? Please detail how previous investigations have utilized this information and how current evidence supports or disagrees with the proposed disposal locations.

Pages 3 and 18. The text on page three references the use of sandblasting grit and abrasives to construct the landfill roads, but this is not mentioned as a source of contamination on page 18. Please add this information to Section 2.2.

Page 24. Please include scrap metal and dredge spoils that were dumped directly into ponds as another potential source of contamination in addition to the landfill.

Page 26. Please describe if sampling for benthic invertebrates was also done.

Page 29. Please clarify if the figure marker for “unknown animal” refers to a bird, mammal, fish, or invertebrate.

Section 3

Page 32. Step 2 of Table 3-1 includes evaluation of “localized plumes” and “discrete hotspots.” Given the nature of the landfill, the widespread dumping of all types of wastes, and the proximity to the water table, it appears unlikely that discrete plumes of contaminants will be distinguishable within the overall landfill contamination. All contamination should be addressed regardless of whether it occurs in a discrete area or is widespread throughout the disposal area.

Page 32. Please note whether any investigation of contamination outboard of the seawall will/has occurred. Contamination may be present from the material used to construct the seawall itself, ground water connection under the seawall, or from contaminants mobilized with tidal flushing through the culvert.

Page 33. The section on human health risk assessment was not reviewed.

Pages 46, 56, 60, 63. As mentioned above, the Service recommends combining wetland and open water habitats for the risk assessment.

Page 48. Please clarify why a separate background screening is proposed for dioxins and furans and what specific statistical tests or other analyses are proposed to determine whether site concentrations are “generally within the range of background concentrations.” Comparison of average site concentrations against background concentrations is not sufficiently conservative at the screening stage. In addition, any calculated toxic equivalence totals should include the coplanar polychlorinated biphenyls (PCBs) since these chemicals are known to act via the same mechanism.

Pages 49-50. The Service recommends that the subsurface (greater than 1 foot depth) samples be used both for determining potential risk to plants and burrowing animals and included in the trophic transfer factor calculations used to model exposure to higher trophic organisms via ingestion of the plants or burrowing animals.

Pages 49-51, 56, 63. The Navy does not distinguish between low or high toxicity reference values (TRV) and proposes a screen of exceedances of reference hazard quotients. The Service recommends that any chemicals with hazard quotients greater than one based on the low TRV be retained for further evaluation. In addition, the Service recommends that hazard quotients based on reference or ambient conditions, if used, be incorporated into the baseline ecological risk assessment to address additional off-site exposure for receptors with a site use factor (SUF) less than one.

Page 52. Please consider adding bird tissue sampling if any bird-eating raptors occur on site.

Pages 54-55. The conceptual site models do not include scrap metal and dredge spoils that were dumped directly into the ponds and wetlands. Please add these sources of contamination to the models.

Page 57. The Service recommends that a special status species be selected, if available, due to the level of protection afforded these species under the Endangered Species Act.

Page 59. Mice and voles use and make burrows and should be considered burrowing animals in determining exposure and in food chain modeling.

Page 60. The Service accepts the use of 0 to 1 foot sample data for receptors other than plants or burrowing animals with the understanding that food chain modeling for animals that feed on plants or burrowing animals would use the 0 to 6 feet samples to model prey concentrations and 0 to 1 foot data for incidental soil/sediment ingestion.

Page 61 and 62. The assessment endpoint of survival, growth, and reproduction is not consistent with the bioassay tests that only measure mortality as the biological endpoint. Please describe how the other endpoints of growth and reproduction will be addressed. In addition, please note what specific toxicity endpoints will be measured for fish and water column invertebrates.

Pages 61 and A-47. Please designate the acceptable limit of control survival that will determine if the results are useable or the test needs to be repeated. If control survival is not sufficiently high, then the 69.5 percent of control reference envelope limit may result in an unacceptably low differentiation between toxic and non-toxic conditions.

Page 62, 65. Comparisons between site and reference estimated doses/exposures (based on food-chain modeling with the bioaccumulation bioassay data) are already proposed and therefore, the Service recommends that bivalve and worm tissue concentrations not be compared directly between site and reference.

Page 63. At a minimum, sampling data from the top 1 foot of sediment should be used to determine exposure to benthic organisms and their predators.

Page 63. Please provide information that details the range of pond water depths on-site and justification for why the use of the top one meter of water sampling only is appropriate, particularly for water column invertebrates.

Page 63. The Service recommends that chemicals for which the detection limits exceed the appropriate benchmarks be retained for further evaluation since the analytical method used was not sensitive enough to detect concentrations that might cause adverse ecological impacts.

Page 63. Footnotes 1 and 2 for Table 3-8 both include plants, but the text describes plant exposure estimates as using subsurface information. Please revise to eliminate the inconsistency.

Page 64. Please clarify the food-chain modeling equation to distinguish between the inputs used during screening versus baseline risk assessments with regards to the exposure point concentration and between animals that prey on plants or burrowing animals (that would use subsurface soil/sediment data in the exposure model) or that feed on other organisms.

Pages 66, 107. California and San Francisco regional water quality criteria, if available, should be used preferentially above national criteria.

Page 67. The Service recommends an alternative mercury toxicity reference value for avian species of 0.0078 – 0.015 mg/kg-day as described in our 1997 letter (White, 1997). The Service also calculated an avian no-observable adverse effect level (NOAEL) toxicity reference value (TRV) for total chlordane of 0.0014 mg/kg-day based on a three week dietary exposure to chickens (Biotox, 1969) with endpoints of growth, hatchability, and chick growth with a subchronic to chronic uncertainty factor (National Research Council of Canada (NRRC), 1975).

Section 4

Page 72. Please remove the reference to sampling into the “clean cover” since the cover material came from the South Pond area that was likely contaminated from scrap metal and Seaplane Lagoon dredge spoils (see page 7).

Page 76. Please note the ecological screening levels for soil address potential impacts to plants and soil invertebrates only.

Page 76, 87, etc. The statement that samples “should be analyzed for some or all of the following analytical parameters” is repeated several times in this section, and remains vague about what analytes will actually be measured. Please describe in what circumstances certain chemical analytes listed would not be measured.

Page 76. Please provide a table with the screening criteria and background concentrations for all chemicals, in addition to the tables that provide information on the chemicals with elevated detection limits.

Page 81. In the absence of Alameda sediment background numbers, please use San Francisco Bay sediment ambient values rather than site soil background numbers as a surrogate or use the ecological benchmarks alone.

Page 81. Please do not use groundwater background concentrations as a surrogate for surface water since they are not representative, but use ecological benchmarks for surface water alone for screening.

Page 81. The references cited for sediment and surface water ecological benchmarks do not match those provided on Table 3-9 (i.e., effects concentrations and water quality criteria), and actually refer to plant and soil invertebrate thresholds. Please revise the text and Table 4-4 (if necessary) to refer to the appropriate sediment and surface water benchmarks and reference what species or type of organisms for which they were developed.

Page 88. The Service recommends both aquatic plants and invertebrates be collected.

Page 89. Please clarify the screening level results that would trigger the need for tissue collection.

Page 89. Please note whether any actions have been done to evaluate the extent and nature of the scrap metal and dredge spoils deposited in the wetland area.

Section 5

Page 94. Please describe the detection range, both lateral and vertical, for the ground-penetrating radar equipment proposed, and how that relates to the 50 foot transect spacing. This spacing seems too large to detect waste materials such as drums and scrap metal unless the radar has a wide lateral detection or waste was only dumped in large groups. The historical information provided in Section 2 refers to trenches, but does not describe the length of trenches or whether trenches were grouped together.

Page 95. Please explain why radiological surveys of the dredge disposal areas will not be done given that at least some of the dredge spoils came from Seaplane Lagoon, which is known to have radiological contamination.

Page 98. Please explain how the two confirmation samples will be located along the 10-meter long trench. It may be preferable to stagger samples along the length at the different depths rather than having two fixed locations along the length of the trench.

Page 98. Please describe the methods that will be used to determine the extent of the scrap metal waste in South Pond and the associated wetland area.

Page 99. Please include the proposed analyte list for each group of samples on Table 5-1.

Pages 99, 106. Please consider using a Geiger counter to scan all samples for potential radiological contamination and chemically analyzing any samples that have radiological activity above three times background for radium.

Page 99. Please relate the samples selected for dioxin/furan analysis relative to the known occurrence of fires.

Pages 100-103. Please include previous sample locations for each respective media as distinctive markers to allow for direct comparison between past and proposed sampling locations.

Pages 104, 106. Please clarify that all soil and sediment analytical results will be presented as dry weight concentrations. If results are not provided in dry weight, moisture content should be provided for all samples, not 25 percent as proposed, so dry weight concentrations can be calculated on a sample-specific basis.

Pages 105, 106. Please include dioxin/furan analysis of any soil or sediment found during sampling or trenching with apparent signs of burned material as these chemicals frequently occur in locations with burning or burned material.

Page 107 and A-33. Please consider whether filtering water samples in the laboratory could result in an altered dissolved fraction as compared to filtering the sample in the field as storage, acidification, and/or transport may alter the conditions (temperature, pH, and/or redox) that affect the dissolution of some chemicals. In addition, the text in Appendix A refers to field filtering.

Page 108. The Service recommends that all sediment locations be sampled in both wet and dry season sampling events to ensure adequate sample size and to account for potential seasonal differences in surface sediment concentrations.

Pages 108, 109, 112. The text states that “porewater chemistry is fundamentally important in ecological risk assessment,” but only one sample per pond is proposed for the dry season and three each for the wet season. The Service recommends porewater samples be taken with each sediment sample to ensure adequate sample size, representation, and direct comparison between porewater and sediment chemistry on an individual sample basis.

Page 108. The Service concurs with no or limited additional analysis for dioxin/furans and tributyltin in sediment if the wetland and pond areas are combined as mentioned above. However, if the Navy continues to segregate the pond and wetland areas, then sediment sample analysis for these analytes would be necessary.

Pages 110, 112. The Service recommends dioxin/furan analysis of small mammal tissue samples. Small mammals, of the terrestrial and wetland species being sampled, would likely have the highest concentrations of these bioaccumulative compounds.

Page 110. Plant species on which the selected receptors are known to feed should be collected preferentially. In addition, wet season sampling may preferentially result in sampling new growth that may not have the same period of accumulation that older plant growth would have. Please include samples from older plant tissue or add plant sampling to dry season sampling.

Pages 111, 112. Since it was considered likely that insufficient small mammal tissue would be collected, please add live-trapping of small mammals to the dry season sampling in order to increase the likelihood of sufficient sample numbers and to provide an opportunity to analyze for all constituents.

Page 111. Surface water sampling events in North Pond should be timed relative to the tides in a consistent fashion since this pond is tidally influenced. In addition, salinity should be measured in both ponds with each sampling event.

Page 113. The Service does not recommend comparing site and reference station bioaccumulation results since the results are for use in the food chain modeling and do not directly relate to exposure or effects of the selected ecological receptors.

Page 114. Please revise the statement classifying Tubbs Island and Skaggs Island as undisturbed environments as both areas have been modified by human activities, including agricultural and military use, respectively.

Pages 114, 115. Dioxins and furans may occur at low or non-detectable concentrations in non-source areas due to transport from anthropogenic sources. However, localized hotspots associated with burned areas, treated wood, application and disposal of chlorinated herbicides, and/or incinerators are generally distinguishable. In addition, ambient concentrations of organic chemicals are typically not used to screen samples. If reference data for dioxins and furans are significantly elevated, additional investigation should be done to determine if these concentrations result from a previously unidentified source in the reference locations.

Page 116. Since the highest rainfall at Alameda occurs in the November to March period, a month-long sampling beginning in early April may not be representative of wet season conditions. If field conditions prevent sampling activities earlier during the predominant wet season, please re-classify as spring sampling.

Page 116. The Service requests that more than 10 business days be provided for review of the dry season results and proposed wet season sampling in the work plan addendum.

Appendix A

Page A-30. Dioxin and furan contamination could also be associated with burning of chlorinated solvent wastes, so soil or sediment with any signs of burning should be sampled and analyzed for these chemicals. In addition, please clarify whether the current proposal refers to dioxin/furan analysis of samples that have elevated concentrations of all or at least one of the three chemical groups identified.

Page A-33. If sufficient volume of porewater is not collected, please collect additional sediment volume to achieve an adequate amount.

Page A-85. Please consider using a more sensitive analytical method for cadmium analysis since several ecological benchmarks are lower than the cited detection (0.8 mg/kg) and reporting (1.0 mg/kg) limits of the proposed method.

Page A-109. Please identify the scrap metal disposal area on this figure.

If you have any questions regarding this letter, please contact Dr. Beckye Stanton at (916)414-6733 concerning contaminant issues or Jim Browning at (916) 414-6625 concerning endangered species issues.

Sincerely,



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Acting Field Supervisor

cc:

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References Cited:

National Research Council of Canada (NRRC) (1975) *Chlordane: its effect on Canadian ecosystems and its chemistry*, Report 14094. Natural Research Council of Canada Publishers.

White, W. S. (1997) Comments on the " 'Draft technical memorandum, development of toxicity reference values as part of a regional approach for conducting ecological risk assessments at naval facilities in California', undated, received July 9, 1997." Ms. Teresa Bernhard, E. F. A., West, Naval Facilities Engineering Command, U.S. Navy ed, San Bruno.