



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

anomaly #3
Site 1
Incoming
M60050.003178
MCAS EL TORO
SSIC NO. 5090.3

September 18, 2003

Mr. F. Andrew Piszkin
BRAC Environmental Coordinator
Base Realignment and Closure
Marine Corps Air Station, El Toro
7040 Trabuco Road
Irvine, CA 92618

RE: Ecological Issues at Anomaly Area 3 and IRP Site 1 at the Former MCAS El Toro

Dear Mr. Piszkin:

The US Environmental Protection Agency, Department of Toxic Substances Control, CA Department of Fish and Game and US Fish and Wildlife Service have met to discuss the Navy's responses to comments on the Draft Final Screening Ecological Risk Assessment (ERA) for Anomaly Area 3 (AA3) and Tables 1 and 2, the Animal Species Specific Exposure Factors for AA3, provided via e-mail on July 23, 2003 by Crispin Wanyoike, Earth Tech, Inc.

The following comments are intended to provide the Navy with a framework for moving forward with the assessments for both Site 1 and Anomaly Area 3. We believe that the issues raised here must be addressed in order to adequately protect ecological receptors on these sites.

Our understanding from the meeting on June 10, 2003 held in San Diego, is that the Navy will use similar approaches to the Screening Ecological Risk Assessment at both Sites 1 and AA3.

I. General Comments on the Draft Screening ERA for AA3

Please note that comments on the Draft Screening ERA for AA3 were provided by the U.S. Fish and Wildlife Service (August 4, 2003 letter to Mr. Andy Piskin, Department of the Navy from Andrew Yuen, US Fish and Wildlife Service). Responses to these comments should be provided and in particular, the following issues should be addressed.

1. It is inappropriate to eliminate chemicals detected at depths greater than 1 foot bgs. The California ground squirrel can burrow up to depths of five feet. We suggest that the Navy refer to DTSC's recommended depths for soil sampling to set exposure point concentrations for burrowing mammals and burrow-dwelling birds in an ecological risk assessment. As per our June 10, 2003 BCT meeting minutes, we agreed that exposure to soil depths of 0-6 feet bgs would be evaluated. The conceptual site model should be revised to show that the subsurface may be a complete pathway for certain ecological receptors.

2. More justification for the elimination of pesticides, herbicides and PCBs as COPECs at AA3 must be provided. Please keep in mind that although these chemicals were below human health based PRGs during earlier studies, they may still pose an ecological risk. At a minimum any data regarding these chemicals should be presented.
3. Special status species should be protected at the individual level rather than at population-level endpoints.
4. Bioaccumulation factors (BAFS) should be updated to include soil-to-earthworm BAFs for metals and dioxins reported by Sample et. al (1999), and soil-to-plant and soil-to-small mammal BAFs for inorganics and organics provided by US EPA (2000; <http://www.epa.gov/ecotox/ecossl/SOPs.htm>).

II. Responses to the "Response to Review Comments"

Responses to the Navy's response to US EPA comments on the Draft Screening ERA for AA3 (June 17, 2003 letter to Mr. Andy Piskin, Department of the Navy from Nicole Moutoux, US EPA) are detailed below.

General Comments:

1. Response accepted

Specific Comments:

1. Response accepted
2. The response is confusing in that it says "there is no coastal sage scrub on site or down-gradient of the site". Please see the map in the draft at Appendix B, Figure B-1 which shows both mulefat and mixed sage scrub and see the text on pages 3-6 and 3-7 which says "a small amount of the CSS, in the form of mixed sage scrub grassland (0.18 acres) is within the limits of AA3..." and "There is a very limited area of this habitat (mulefat scrub) on site...". Therefore, according to the Navy's document, both of these habitats occur on site. The Navy needs to clarify whether or not there is coastal sage scrub and mulefat habitat within the boundaries of AA3. However, the thrust of the EPA comment was that if there is such habitat **either within or close to AA3**, there is a possibility there are sensitive species nearby which may forage on site and they must be considered in the risk assessment.
3. Response accepted
4. As noted in Specific Comment 2 above, the Navy must clarify whether there are sensitive habitats on site or close to the site and include in the risk assessment the species which may be found nesting and feeding in this sensitive habitat.
5. The response is accepted contingent on the Navy providing supporting evidence that the previous sampling was sufficient to assure that pesticides/herbicides are not a consideration on this site. Please present a map showing sampling locations on Site 3 to,

the sample results, and a discussion of the sampling and the data.

We understand the BCT approved the draft RSE work plan and the COPECs included. However, given that such landfills frequently included miscellaneous debris not found on any manifest, a conservative eco risk assessment includes a full spectrum analytical scheme regardless of what was found in other landfills in the area.

6. Response accepted.
7. Navy response paragraph 1: Since the reviewers of this document were not a party to the discussions regarding methodology mentioned in this response, please provide either meeting minutes or at a minimum a date as well as who was present for the discussions with EPA Region 9 concerning the methodology to be used to estimate the risk-based soil benchmark concentrations for higher trophic level receptors.

Navy response paragraphs 2 and 3: No response required. We understand that the BTAG TRVs are doses, not soil concentrations but we do not agree that using soil concentrations as doses is not "appropriate". EPA Guidance (EPA, 1997) includes this method as one of the possible methods for calculating HQs. It is a method which may be used during the preliminary screening when site-specific data sufficient to calculate doses for the appropriate receptors is not available. It is understood this is very conservative and the assumption is made that better site-specific data can be provided during the BERA when exposure is calculated.

The Navy is correct that this does ignore food chain risks for bioaccumulative compounds and it is appropriate to apply BCFs for such compounds. However, as per EPA guidance (EPA, 1997) "Because many environmental factors influence the degree of bioaccumulation, sometimes by several orders of magnitude, the most conservative (ie., highest) bioaccumulation factor (BAF) reported in the literature should be used in the absence of site-specific information." The USFWS provides appropriate values and suggested references in their comment (letter of August 4, 2003 to the Navy) on Appendix C-3.

Navy response paragraph 6: We do not agree that "if the SBC is exceeded ($HQ > 1$), further evaluation **may** (emphasis added) be required." If the HQ is greater than 1, further evaluation is **always** required.

8. No response required. We understand that the selection of representative species is required to convert TRVs into screening values if the Navy chooses to include Tier 2 exposure estimates in the Tier 1 screening. Selection of target receptors is not necessary to perform the type of screening where the low TRV is simply compared to the COPEC concentration. This does not apply to the bioaccumulative compounds where it would be appropriate to estimate the risk to higher trophic level receptors in Tier 1.

We also agree that the factors described in Section 3.4 are appropriate and conservative with the exception of the discussion regarding the elimination of the red-tailed hawk as a target receptor. Use of a higher trophic-level receptor such as the hawk with a small

home range in the screening guarantees the process will be properly conservative. We do note for this site that using another receptor such the logger head shrike (which has been observed in the area) would be more conservative in that the home range would be much smaller.

9. Response accepted.
10. Response not accepted. There is evidence in the document (as noted above) that there is enough good habitat on site that we may expect sensitive species to be nesting and/or feeding on site. Please include sediment as a pathway.
11. No response required. We wished to see the results of the preliminary unadjusted screening results for the non-bioaccumulative compounds before adjusting for exposure. Appendix C1-1 only presents the results for the lower trophic level receptors. It does not present preliminary screening for the higher trophic level receptors **before** adjusting for exposure.
12. No response required.
13. Response accepted.
14. Response not accepted. The Sample, 1996 reference and adjustments is outdated. Please use the Sample and Arenal, 1999, paper as referenced below.
15. No response required. We understand how the Navy calculated the hazard quotients. We would have preferred to see them presented as we described in the original comment. Adjustments to the screening hazard quotients should be presented in the BERA after the screening is completed, the results discussed and the problem formulation for the BERA completed.
16. Response accepted with the caveat that (1) sensitive species must be included if there is any riparian habitat on site (as the document and the Navy's response seems to indicate) and (2) the expanded sampling discussion (see comment 5 above) supports the lack of pesticide/herbicide detections.

References

EPA, 1997. Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments, Interim Final. EPA 540-R-97-006.

Sample, B.E. and C.A. Arenal. 1999. Allometric Models for Inter-species Extrapolation for Wildlife Toxicity Data. Bull. Environ. Contam. Tox. 62:653-663.

III. Comments on the "Tier 1, animal species-specific exposure factors for Anomaly Area 3" and the "Tier 2 animal species-specific exposure factors for Anomaly Area 3".

1. According to the BCT Meeting Minutes from June 10, 2003, it is presumed that the same

representative species will be used at Site 1 and AA3. Final selection of the representative species cannot be completed until complete species lists have been developed for these sites (pending the spring/summer habitat assessment). These species lists should provide the basis for providing the rationale for receptor selection from the various feeding guilds potentially present at the two sites. However, the species listed in Tables 1 and 2 are in concordance with the agreements reached at our June 10, 2003 meeting, with one exception. The loggerhead shrike was proposed as a tertiary trophic level bird species for Site 1 but it is not listed in the tables. Please provide rationale for why the red-shouldered hawk is a conservative representative receptor for this feeding guild.

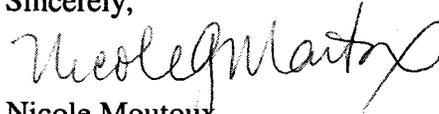
2. ERA documents should clearly detail how the Tier 1 and Tier 2 exposure and risk estimates will be calculated for each site. Final acceptance of the approach for incorporating foraging area into the Tier 2 assessment cannot be provided until methods are detailed.
3. As stated previously in the June 4, 2003 memorandum from Regina Donohoe, Department of Fish and Game, to Rafat Abbasi, Department of Toxic Substances Control, (Comment 11), food ingestion rates should be based on the updated equations of Nagy (2001), not the older Nagy equations provided by USEPA (1993).
4. References for all the cited exposure factor literature in the tables should be provided so that values can be verified and/or evaluated for their applicability to the habitat at El Toro. The ERA documents should provide rationale for the selection of foraging area values, comparing the relevance of the habitat studied to that at Site 1 or AA3.
5. For each of the receptors, please distinguish whether the animal diet partition factor is for invertebrates or vertebrates to clarify what trophic level is being modeled.
6. A soil ingestion rate of 3-6%, based on the short-tailed shrew (USEPA, 2000; <http://www.epa.gov/ecotox/ecossil/SOPs.htm>), indicates the 2% ingestion rate for the ornate shrew is underestimated.
7. The listed maximum body weight for the western meadowlark, 3 kg, is erroneous.
8. As stated previously (June 4, 2003 memorandum from Regina Donohoe to Rafat Abbasi; Comment 11), the soil ingestion rate for the for the ground feeding birds (i.e., western meadowlark, spotted towhee and mourning dove) should be increased. Higher values based on the American woodcock (i.e., 10.4%; Beyer et al, 1994) are recommended.
9. Three studies on home range of the short-tailed shrew are provided by USEPA (1993). Home ranges for Michigan blue-grass (0.1 – 0.36 ha) and New York old field (0.03-0.22 ha) habitats are lower than the selected mean value (0.39 ha) for Manitoba tamarack bog habitat. Please justify why the Manitoba study more accurately reflects the conditions at El Toro given that other studies in the U.S. have reported smaller home ranges.
10. As stated previously, (June 4, 2003 memorandum from Regina Donohoe to Rafat Abbasi; Comment 11), the foraging area (0.6 ha) for the deer mouse should be lowered to be more

- reflective of the values reported in exposure factor reviews (e.g., USEPA, 1993; < 0.1 ha or Cal/ECOTOX; http://www.oehha.org/cal_ecotox/report/peromef.pdf). These reviews indicate that the Wolff (1985) study reported values lower than 0.6 ha (e.g., 0.05 ha).
11. Please provide justification as to why the Tier 2 screen involves alteration of the diet partition factors, compared to the Tier 1 table, for the deer mouse, meadowlark and spotted towhee.

These comments represent the primary concerns shared by all agencies. We believe that resolution of these issues is important in order for these assessments to move forward and to minimize impacts to ecological receptors at both Sites. We look forward to receiving your responses soon.

If you have questions, please call me at (415) 972-3012.

Sincerely,



Nicole Moutoux
Project Manager
Federal Facilities Cleanup Branch

cc: Karnig Ohannessian, SWDIV
John Broderick, RWQCB
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