

DEPARTMENT OF TOXIC SUBSTANCES CONTROLREGION 2
700 HEINZ AVE., SUITE 200
BERKELEY, CA 94710-2737

May 31, 1995

Commander
Department of the Navy
Engineering Field Activity, West
Naval Facilities Engineering Command
Attn: Mr. Stephen Chao, Project Manager
900 Commodore Drive, Bldg. 101
San Bruno, California 94066-2402

Dear Mr. Chao:

NAVY RESPONSE TO AGENCY COMMENTS ON THE DRAFT FINAL PHASE I SITE-WIDE ECOLOGICAL ASSESSMENT (SWEA), MOFFETT FEDERAL AIRFIELD

The Department of Toxic Substances Control (DTSC) has reviewed the subject document and prepared following comments for your consideration. The Navy should not start drafting the final SWEA report until all the issues are satisfactorily resolved on informal bases. If you have any questions, please contact me at (510) 540-3830.

GENERAL COMMENTS

1. As DTSC indicated in our letter of April 5, 1995 regarding the draft Phase II SWEA Workplan, additional meetings are needed to clarify the technical issues concerning: sampling for VOCs in owl burrows, clarification of the "indicator PAH" approach, refinement of Assessment and Measurement Endpoints, clarification of which exposure pathways and ecological routes will be evaluated for vertebrate species, toxicity profiles and determination of ecological reference doses (extrapolation and uncertainty factors), and modeling bioaccumulation to higher trophic levels, and consideration of multiple contaminants and exposure pathways.

2. The Department continues to question the rationale for eliminating gamma and alpha chlordane, endrin ketone, endrine aldehyde, and endosulfan II from the nonlandfill upland soils. As indicated in DTSC letter of April 5, 1995, these chlorinated pesticides are stated in the draft workplan for Phase II (Table 2-9) as detected in greater than 5% of the nonlandfill upland soil, and therefore there appears to be current exposures of these compounds to upland receptors which are not addressed in the Phase II workplan.

Mr. Stephen Chao
May 31, 1995
Page 2

3. Based on the background information of boron and the concentration distribution data of cobalt provided in the Navy's response to agency comments, the Department agrees to eliminate boron and cobalt as COECs from the Phase II Assessment. However, the Department believes that molybdenum and vanadium should be retained as COECs in the final Phase I SWEA. The Phase II sediment and biota data from the reference areas and site location should be evaluated to determine if these two trace elements be included in the Phase II quantitative evaluations. The Department has also reviewed the raw data for the identification of azinphos-methyl and concluded that azinphos-methyl was incorrectly identified as being present in the samples because of matrix interference.

SPECIFIC COMMENTS

1. The response to comments included rough calculation of incidental soil ingestion for boron, cobalt, molybdenum and vanadium. These calculations did not evaluate the potential for food accumulation in prey items for vertebrate species, and therefore do not support elimination of this pathway. As indicated in Appendix K and in DTSC letter dated January 20, 1995, molybdenum may accumulate in prey item tissues, and therefore may contribute significantly to dose if prey items are accumulating these elements. Accumulation of vanadium was not specifically addressed in the response to comments, summary information from (Kabata-Pendias and Pendias, 1992) suggests vanadium may accumulate in plants.

DTSC suggests that data from the Phase II SWEA collections for sediment and biota be evaluated to see if these compounds are significantly different between reference areas and site location. Such an evaluation to the Phase II data would support the contentions in the response that these elements do not accumulate appreciably in plants and animals. If concentration of one of these elements in sediments or biota is significantly different from the reference area, then that element should be included in the Phase II quantitative evaluations. If the trace element is not significantly elevated above reference locations, then it can be eliminated as a COEC.

2. The response calculations adequately demonstrate that incidental soil ingestion is a minor contributor to ducks for boron and molybdenum; and is a minor contributor to mammals for boron, molybdenum, and vanadium. Therefore the incidental soil ingestion pathway can be eliminated for these specific receptors and trace elements. Incidental soil ingestion has not been estimated for vanadium in ducks, nor can incidental soil ingestion of vanadium be eliminated for mammals since the estimated dose is within the soil ingestion rate for mammals (2-

Mr. Stephen Chao
May 31, 1995
Page 3

10%). Also, the black-neck stilt, one of the chosen receptors, will ingest a greater percentage of their diet as soil than the duck. U.S. EPA (1994; Table 4-4 & 4-5) indicates shorebirds can ingest from 10 to 60% of their diet as soil, and provide estimates for sandpipers which range from approximately 7 to 30% of their diet in soil. Therefore, elimination of incidental soil ingestion pathway to shorebirds for vanadium has not been demonstrated.

3. DTSC has concerns about how the incidental soil ingestion calculations were conducted. For molybdenum, the toxicity value chosen for mammals is a subchronic LOAEL, which was not adjusted to achieve a chronic NOAEL. If a default uncertainty factor of 10 is used to adjust a subchronic to a chronic toxicity value, and another factor of 10 is used to adjust a LOAEL to a NOAEL, then the conclusion is that incidental soil ingestion would have to exceed 8% of the total food ingested each day.

Also unclear from the calculations is how cross-species extrapolations are conducted. For example, Attachment A calculations for mammals refer to generic rodent exposure factors (body weight and food intake) rather than exposure factors specific to the Salt Marsh Harvest Mouse. Similarly, the toxicity values based on dietary concentrations, a dose level per body weight is not back-calculated. In general, we are concerned these sample calculations are unduly convoluted. We suggest Phase II utilize straightforward calculations, aided by spreadsheet technology. As indicate in our general comments, DTSC believes additional discussion regarding establishment of chronic NOAEL is needed for Phase II.

4. Response to Comment No. 6 (Page 15), Response to Comment No. 4 (page 16), and response to Comments No. 5 (Page 17) all concern VOC pathways to the burrowing owl. It is difficult to decipher from the response the Navy's position on the evaluation of the inhalation pathway for VOCs to the burrowing owl. The State welcomes further discussions on this issue.

Sincerely,



C. Joseph Chou
Remedial Project Manager
Base Closure Unit
Office of Military Facilities

Mr. Stephen Chao
May 31, 1995
Page 4

REFERENCES

Kabata-Pendias, A., and H. Pendias. 1992. Trace Elements in soils and Plants, 2nd Edition. CRC Press, Boca Raton, Florida.

U.S. Environmental Protection Agency, 1994. wildlife Exposure Factors Handbook. Two Volumes, Office of Research and Development, Washington, D.C.

cc:

Mr. Michael Bessette
Regional Water Quality Control Board
2101 Webster Street, Suite 500
Oakland, California 94612

Mr. Michael D. Gill
U.S. Environmental Protection Agency
Region IX, Mail Stop H-9-2
75 Hawthorne St.
San Francisco, California 94105

Dr. Jim Haas
U.S. Fish and Wildlife Service
3310 El Camino Avenue, suite 130
Sacramento, CA 95821

Ms. Sandy Olliges
Assistant chief
Safety, Health and Environmental Services
National Aeronautics and Space Administration
Ames Research Center
Moffett Field, CA 94035-1000

Mr. Peter Strauss
MHB Technical Associates
1723 Hamilton Avenue, Suite K
San Jose CA 95125

Ms. Laura Valoppi
Dept. of Toxic Substances Control
Office of Scientific Affairs
400 P Street, 4th Fl.
P.O. Box 806
Sacramento, CA 95812-0806

Dr. Myrto Petreas
Dept. of Toxic Substances Control
Hazardous Materials Laboratory
2151 Berkeley Way, Room 515
Berkeley, CA 94704