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Ser 18138D/00110
20 JUN 1989

From: Commander, Western Division, Naval Facilities Engineering Command
To: Distribution

Subj: REMEDIAL INVESTIGATION/FEASIBILITY STUDY AT NAVAL AIR STATION, ALAMEDA

Encl: (1) Final PHEE Plan
(2) Navy Responses to Department of Health Services Comments on NAS Alameda PHEE Plan

1. Enclosure (1) is our Final Public Health and Environmental Evaluation (PHEE) Plan for the Remedial Investigation/Feasibility Study at the Naval Air Station (NAS) Alameda. Enclosure (2) is a summary of the Navy Responses to the comments submitted on 10 March 1989 by the Department of Health Services (DOHS) on the PHEE Plan. These comments have been incorporated in the Final PHEE Plan. DOHS comments on the ecological assessment section of the PHEE Plan were discussed in a telephone conference call on 16 May 1989 between Clement Associates and Dr. Calvine Wilhite of DOHS. The results of the telephone conference have also been incorporated in the Final PHEE.

2. We believe that the Final PHEE Plan is consistent with the comments provided by DOHS as well as applicable federal, state, and local guidance. Also, the Final PHEE Plan is intended to satisfy the substantive state requirements referenced in Section 5.1.2.6 of the Remedial Action Order (Docket No. HSA 88/89-051).

3. If you feel that the Final PHEE Plan does not adequately reflect DOHS comments or is not consistent with applicable guidelines, please advise us within fifteen days of the date of this letter.

4. Thank you for your guidance and involvement in this PHEE Plan. Please direct any questions to Commander, Western Division, Naval Facilities Engineering Command (Attn: Ms. Bella Dizon, Code 18138D, (415) 877-7510).

Original signed by:

RICHARD SERAYDARIAN
Head, Installation Restoration Section

Distribution:

Environmental Protection Agency, Region IX (Attn: Nick Morgan)
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20 JUN 1989

Subj: REMEDIAL INVESTIGATION/FEASIBILITY STUDY AT NAVAL AIR STATION, ALAMEDA

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NAS Alameda (Attn: Randy Cate) (2 copies)
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Clement Associates (encl (2) only)

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ENCLOSURE 1

FINAL PUBLIC HEALTH AND ENVIRONMENTAL
EVALUATION (PHEE) PLAN

DATED 01 JUNE 1989

IS FILED AS ADMINISTRATIVE RECORD NO.
N00236.000371

NAVY RESPONSES TO DEPARTMENT OF HEALTH SERVICES COMMENTS
ON THE PUBLIC HEALTH AND ENVIRONMENTAL EVALUATION PLAN

REMEDIAL INVESTIGATION/FEASIBILITY STUDY
NAVAL AIR STATION
ALAMEDA, CALIFORNIA

Responses to Comments in Attachment I of DOHS letter to the Navy on 10 March
1989

Comment:

1. Section 2.1.1 Building 41: Were the areas surrounding Building 41 always paved, during the relevant period of hazardous waste(s)/substance(s) storage, treatment, or disposal? If not: (1) when did paving occur, and (2) what areas are paved and have these paved areas always been the same? What areas around Building 41 may have more likely resulted in contamination from any spill, based on hazardous waste(s)/substance(s) treatment, storage, or disposal practices?

Response:

1. When wastes were first stored inside or outside of Building 41 is not documented. Aerial photographs indicate that paving occurred in the early 1940s when Building 41 was constructed to serve as a hangar for seaplanes. Historical records have not been maintained of the areas paved or re-paved outside of Building 41. Because the integrity of the paved surface in the past is difficult to assess, soil samples should be collected from beneath the pavement, and be analyzed for metals and semi-volatile compounds. These data gaps are identified in Table 7-1. Hazardous materials have been stored in at least three areas outside of Building 41. These are (1) a paint stripping tank (3' X 5' X 1') on the west side, (2) a temporary 55-gallon waste storage area on the west side, and (3) two 300-gallon, above-ground containers (bowzers) which temporarily stored petroleum wastes adjacent to the northeast and northwest corners. Additional details are provided in Section 2.2.1 of the preliminary PHEE.

Comment:

2. Section 2.1.3 Building 10 (Power Plant): What is the chemical constituent make-up of "Bunker C" fuel; and what health risks are associated with each?

Response:

2. The major constituents of Bunker C fuel are petroleum residues and cutter stocks such as light cycle oils, diesel, or jet fuel. This material may have contained significant amounts of polycyclic aromatic hydrocarbons (PAHs). Monocyclic aromatics, such as benzene, toluene, and xylene may have been in Bunker C fuel formulation containing jet fuel. The health risks associated with PAHs, benzene, toluene, and xylene are addressed in Chapter 3, Toxicity Characterization, of the PHEE.

Comment:

3. Section 2.1.20 Yard D-13: The specific hazardous waste/substances contained in "Poison B" should be described.

Response:

3. Poison B is a chemical class identified by the United States Department of Transportation and include chemicals such as beryllium wastes, endosulfan, and endrin. This information is included in Section 2.1.20.

Comment:

4. Section 2.2.5 Hydrogeology: What is the historical and present concentration of mercury in the "Pan American Well" (500 feet deep)? The historical levels of mercury in the "Army Well" should be provided. Where available, well-closing data should be summarized, with emphasis on whether reasons exist to suspect mercury may be contributing to further contamination.

Response:

4. Based on discussion with DUHS on 31 March 1989, all chemicals analyzed, not just mercury, are addressed below for the Pan American Well. One chemical analysis of groundwater from the Pan American Well was conducted in 1977 and is shown below and in Appendix A of the preliminary PHEE:

Major Inorganic and Trace Mineral
Analyses for Pan American Well

Date Collected	6/12/77
Pumping Rate	398.3 gpm
Ph, units	7.40
Temperature, °C	20.4
Electrical Conductivity, micromhos/cm @ 25°C	890
TDS (sum), mg/l	588.62
Color (Pt-Co Unit)	.5
Odor (threshold unit)	1

(All values in mg/l, unless otherwise stated.)

HCO ₃ --	240
Cl ₋	110.5
SO ₄ --	33.4
F ₋	.4
NO ₃ - (N)	.1
NO ₂ - (N)	.002
Na ⁺	120
K ⁺	1.9
Ca ⁺⁺	36.9
Mg ⁺⁺	14.6
SiO ₂	30.3

As	< 0.01
Ag	< 0.008
Ba	0.19
B	< 0.1
Cd	0.005
Cr	< 0.001
Cu	< 0.01
Cn	< 0.01
Fe	< 0.01
Hg	0.011
Mn	0.07
Pb	< 0.05
Se	< 0.001
Zn	0.075
Hardness (as CaCO ₃)	92.0

Analysis Agency: International Nutronics, Inc., Palo Alto, California 94303
 Taken from Hydro-Search/Navy Public Works, 1977

Mercury measured at a concentration of 0.011 mg/l exceeded the current 0.002 mg/l standard of both the federal maximum contaminant level (MCL) and the California applied action level. The concentrations of the remaining chemicals did not exceed current primary drinking water standards. The manganese concentration of 0.07 mg/l exceeded the current 0.05 mg/l standard of the California secondary drinking water MCL. The total dissolved solids (TDS) concentration of 586.02 mg/l exceeded the current 500 mg/l recommended California secondary drinking water MCL, but had not exceeded the recommended upper limit of 1000 mg/l. The concentrations of the remaining chemicals did not exceed current federal or state secondary drinking water standards. No historical chemical analyses of the groundwater from the Army Well were recorded. The present concentrations of mercury in the Pan American and Army Wells are not known, but will be addressed in the solid waste water quality assessment test (SWAT) to be conducted by Canonie.

The Pan American Well has been inactive since the groundwater sample was collected in 1977 during a pump test. This well was abandoned with the pump and associated plumbing intact. The Army Well currently is used for landscape irrigation. An additional well reported by Alameda County's well inventory is located approximately 9,500 feet east of the West Beach Landfill. This well was reported to be 376 feet deep and was abandoned in place. The current integrity of construction of each well has not been investigated but will be addressed by Canonie as part of the SWAT. These additional chemical analyses will confirm if elevated levels of mercury exist in the deep aquifers beneath NAS Alameda. Testing the integrity of these three wells will indicate if these wells were potential vertical conduits for the migration of chemicals from the surface.

Comment:

5. Table 7-1, Summary of Chemical Characterization Data required for the Public Health and Environment Evaluation. Page 7-1 through Page 7-4: Footnote "D" states that the underlined parameters were not included in the "Canonie Sampling Plan". Since these chemical characterization data are necessary for a complete evaluation, these test parameters must be included.

Response:

5. Clement will work closely with Canonie to ensure that data gaps identified in the preliminary PHEE will be incorporated in the sampling plan.

Response to Comments in Attachment II of DOHS letter to the Navy on 10 March 1989

Note: The Navy, Clement, and Canonie met with DOHS on 31 March 1989, to discuss comments on the preliminary PHEE on NAS Alameda. It was decided at this meeting that the following comments in Attachment II will be addressed:

Comment:

1. Chapter 3 - Toxicity Characterization: Include California health-based standards, such as applied action levels (AALs), for each chemical when available.

Response:

1. These are incorporated for each chemical in its toxicological profile in Chapter 3.

Comment:

2. Section 5-1 Applicable or Relevant and Appropriate Requirements: Does the California DOHS have applicable or relevant and appropriate requirements (ARARs) for total oil and grease concentrations.

Response:

2. California Department of Health Services does not currently have an ARAR for total oil and grease concentrations in water or soil.

Responses to Additional Comments Resulting from 31 March 1989 Meeting:

Comment:

3. Chapter 3 - Toxicity Characterization: Include health and safety standard and short term exposure effects, when available, for each chemical in its toxicological profile.

Response:

3. Worker health and safety standards, such as the recently updated federal OSHA permissible exposure limits (PELs), and short term exposure symptoms have been included when available for each chemical in its toxicological profile in Chapter 3.

Comment:

4. Submit the equivalent toxicity methodology developed by Clement for calculating the toxicity of polycyclic aromatic hydrocarbons (PAHs) to Dr. Jeff Wong of the DUHS for his review.

Response:

4. Clement submitted a methodology developed by Clement for calculating the toxicity of polycyclic aromatic hydrocarbons (PAHs) to Dr. Jeff Wong for his review during the week of 24 April 1989.

Comment:

5. Request from the California Regional Water Quality Control Board (RWQCB) the beneficial uses of the shallow water-bearing zone in the fill material beneath NAS Alameda.

Response:

5. Navy will send a letter to RWQCB requesting above information.

Comment:

6. Section 6.4.4 Conclusions: Assess the impacts of the proposed sampling effort on the ecosystem of NAS Alameda.

Response:

6. Because of the small number of samples of biota to be collected, the impacts of the sampling effort on the ecosystem are anticipated to be minimal. See Section 6.4.4 for more details.

The approach of the ecological assessment proposed in Chapter 6 was clarified in a telephone conference call between Clement and DUHS on 16 May 1989. Dr. Joyce McCann, Dr. Michael Raybourn, Ms. Jo Ann Weber, and Ms. Judy Durda of Clement and Dr. Calvin Wilhite of DUHS participated in the telephone conference.

Comment:

7. Section 7.1.6 Biota: Dr. Wilhite requested a clarification of the approach proposed in Chapter 6.

Response:

7. To address the impact of past waste disposal practices at NAS Alameda on biota the following tests are proposed:

- (1) Macrobenthic (sediment dwellers) bioassays for sediments in the Seaplane Lagoon and Oakland Estuary.
- (2) Analysis of tissue samples from fish in the Seaplane Lagoon and from benthic organisms in each of the two on-site wetlands for organochlorine pesticides, PCBs, and metals.

Macrobenthic assays are proposed to assess the toxicity of the sediments in areas known to have received wastewaters in the past. Tissue residue studies are proposed to evaluate if chemicals from past wastes disposed by NAS Alameda are accumulating in the food chain.

The only change in our proposed approach presented in the December 1988 Draft PPHEE is the addition of the chemical analyses of tissue samples from benthic organisms in the on-site wetlands. These chemical analyses will indicate if bioconcentration of chemicals has occurred in these benthic organisms which are an important food source for biota at NAS Alameda.

Evaluation of results from these initial studies will determine if additional studies are required to assess the impact of past waste disposal practices at NAS Alameda on biota. See Section 7.1.6 for a detailed discussion.

Comment:

8. Section 7.1.6: What is an emergence endpoint of a bioassay?

Response:

8. An emergence endpoint measures the success rate of young hatching from eggs.

Comment:

9. Section 6.13: What is the overall health of the California least tern?

Response:

9. As discussed in Section 6.4.2.4, recent studies on the tern colony indicate good reproductive success (measured as number of fledglings per nesting pair) of the breeding population (Collins, 1987). Other observations on adult and chick mortality suggest that the population is relatively healthy (Collins, 1987) and thus does not seem to be adversely affected by past waste disposal practices at NAS Alameda. However, the available information does not permit a complete evaluation on the health of the population because information such as chick growth rates or survival after leaving the nesting area is not available.

DHS / NAVY / PUBLIC MSG. 4/18-90

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