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

January 9, 1991

Commanding Officer
Naval Station Treasure Island
ATTN: Eddie Sarmiento, Staff Civil Engineer
Building I (Code 84)
San Francisco, CA 94130

Dear Mr. Sarmiento:

Enclosed are EPA's comments on the following four documents related to ground water and tidal influence monitoring at Hunters Point Annex: **Results of Well Survey, Plan for Pilot Tidal Influence Study, Draft Tidal Influence Monitoring Plan, and Recommendations for Aquifer Testing,** and **Tidal Influence Studies at Group II Sites.**

Given that some aspects of all four documents are related, we believe the documents could be improved by better cross-referencing. The Results of Well Survey, for example, could be referenced in Section 4.0 of the Tidal Influence Monitoring Plan (TIMP) and included as an appendix to the TIMP. Also, the TIMP appears to supplant the Pilot Study plan; the Pilot Study should be eliminated as a separate document and the details of the study incorporated into Section 6.1 (OU-I Tidal Influence Monitoring Plan) of the TIMP.

Finally, the Recommendations for Aquifer Testing and Tidal Influence Studies at Group II Sites should be rewritten with the purpose and scope better defined, reference to tidal influence studies eliminated, and the organization improved to clearly delineate a plan for Aquifer Testing. As with the TIMP, a section on conceptual aquifer testing at other OU sites would be appropriate.

If you have any questions, please call me at (415) 744-2388.

Sincerely,

Chuck Flippo
Remedial Project Manager

cc: Raymond Chiang, WESTDIV
Mark Malinowski, DHS
Tom Gandesbery, SFRWQCB
David Wells, SFPHD

ATTACHMENT 1

Review of HPA "Results of Well Survey"

1) Page 1, Methodology. A map showing approximate locations and spatial relationship between these wells would would benefit this document. For example, the Site Location Map presented in the Group V Sites Sampling Plan (Plate 2) annotated with well locations would serve the purpose.

2) Page 3, Site IR-7. A better description of the "[f]ibrous (root) material" in Well S-4 is needed to help identify whether extraneous material has been injected into the well or whether the integrity of the well has been breached by penetration of living plant roots.

3) Page 3, Other Areas. As noted in an earlier comment, a map of the well locations would be of benefit. The proximity of well B5A-W to site IR-2 would be demonstrated.

4) Page 3, Results of Water-Level and specific Conductance Measurements. Without a reference for conductivity of fresh water, it is not clear whether the range of specific conductance includes ground water unaffected by mixing with saline bay water. Also, no reference is made to the possibility that contaminants will also affect conductivity.

5) Page 4, Results (continued). It is not clear what the Navy datum is to which top of casing elevations are referenced (an arbitrary value or a surveyed elevation related to mean sea level?).

   A reference is made to "Plate 1", but, as no plate accompanied the review copy of this document, it is not clear whether the reference is to a plate presented as part of this document or a plate presented in one of the references cited in this section.

6) Page 4, Recommendations. Reference to "discharge water" suggests that the wells were purged prior to water level measurements; however, no reference to such an activity is made in the methodology section of this document.

   Wells that are not damaged, but may be inundated by bay water during extreme high tides, should not be abandoned. Such wells can usually be modified by welding additional lengths of protective casing onto the existing casing or grouting a taller, larger diameter protective casing around the present surface casing to extend the height of the top of casing. The new height of the casing may require special measures for water level measurement (standing in a truck bed), but is a minor inconvenience compared to the installation cost of a well.

ATTACHMENT 2

Review of HPA "Plan for Pilot Tidal Influence Study"

General: This is a cursory document and does not clearly define the purpose of the study. Procedures could be more clearly described.

1) Page 1, Paragraph 3. Plate 1 did not accompany the review copy of this document. Therefore, although it is stated that the four wells selected for monitoring have a "triangular spacing", no comment can be made as to whether the spatial relationship between these wells is appropriate.

   Based on the given data for the range of electrical conductance for the four wells, it would appear that Well C5-W has higher conductivity than at least one of the wells near to the bay. It is possible that Well C5-W is being impacted to a greater extent by tidal influences than wells nearer the bay; therefore, care should be taken in using this well as an indicator of water-level changes related only to distance inland.

   Also, any available water quality data for these wells should be presented and included in the criteria for selecting these wells and the presence of contaminants other than salinity can also affect conductance.

2) Page 2, Paragraph 1. The lithologic description for Well B-3 is misquoted in the text, the log describes the majority of the screened zone as "clayey gravel" rather than "gravelly clay" as stated in the text. Therefore, the lithology of B-3 is not as similar to that of Wells B-1 and C5-W as is implied.

3) Page 2, Methodology. The reader is referred to Section 9.3 of the QAPP for test procedures; however, that section states that "detailed procedures for each tidal influence test and associated field measurements will be developed by the hydrogeologist for engineer conducting the test." Therefore, the subsequent description of methodology presented in this document is too cursory to adequately direct the field activities.

12/13/90

ATTACHMENT 3

Review of HPA "Tidal Influence Monitoring Plan"

General: This document provides a clear presentation of planned activities and a complete and understandable scope and purpose.

1) Page 1, Paragraph 3. Second sentence needs to be reworked, possibly to read "changes in ground-water levels and gradients".

2) Page 3, Paragraph 5. First sentence should be corrected to state that reconnaissance phase have been completed at sites IR-1 through IR-11 (not IR-12).

3) Page 5, Hydrogeology. It is stated that "ground water may occur in isolated sand zones within the Bay mud" for sites IR-8 and IR-9 and that "the effectiveness of the Bay mud as an aquitard [has] not been fully characterized". Therefore, monitoring wells at these sites may not be appropriate for tidal influence studies.

4) Page 9, Field Measurements. Two barometric pressure readings may be inadequate to the purposes of this study. A continuous recorder in the field or use of data froma local weather station may be more appropriate.

5) Page 9, Laboratory Analyses of Ground-water Samples. If existing water quality data indicates the presence of contaminants which may impact total dissolved solids (TDS) and/or salinity, levels of these contaminants should also be monitored.

6) Page 10, Section 5.1. Water level data could be presented to supplement the text in the following subsections, either as potentiometric maps, hydrographs, or tables of water level measurements over time.

7) Page 12, Section 6.0. No explanation is given for why OU-V (Group V) sites are not included in the Tidal Influence Monitoring Plan.

8) Page 12, Section 6.1. In the second paragraph of this section, it is stated that "[t]he same technical approach...will be applied to IR-2 as well as to the other OU-I sites" but it is not clear whether this means the same approach as for OU-II (Section 5.0 of this document) or, possibly, the same approach as described in the Pilot Tidal Influence study. This should be stated in a better manner.

12/13/90

ATTACHMENT 3

Review of HPA "Recommendations for Aquifer Testing and Tidal Influence Studies at Group II Sites"

General: This document is poorly organized and combines two activities which are only minimally related (at least as described in the document). Scope and purpose are not described adequately. A separate document for Aquifer Testing and the inclusion of Tidal Influence Studies in the PRC, November 16, 1990, Monitoring Plan would be more appropriate.

1) Page 2, Recommendations for Aquifer Testing and Tidal Influence Monitoring. Given the interrelated nature of the HPA sites, the decision to conduct aquifer testing solely on the basis of the presence of contamination in ground water at each site is inadequate. The spatial relationship between sites and well locations, and possible interrelationship of geology and hydrogeology of adjoining or adjacent site should be reviewed to determine the need for aquifer testing.

2) Page 3, Paragraph 1. Additional backup to explain the radius of influence estimate would be useful including the formula used and the actual calculated distances.

3) Page 3, IR-8. This site may be upgradient of other IR sites and information on upgradient aquifer characteristics could be of value in assessing ground-water conditions at other sites.

4) Page 5, IR-11. As this site adjoins IR-14 and IR-15 and is adjacent to IR-2, aquifer testing at this site would be useful in assessing ground-water conditions at these other sites.