



Department of Toxic Substances Control

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HUNTERS POINT
SSIC NO. 5090.3



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November 6, 2000

Commanding Officer
Department of the Navy
Naval Facilities Engineering Command
Southwest Division
1220 Pacific Highway
San Diego, CA 92132-5190
Attention: Richard Mach

PARCEL B SEPTEMBER 1999 TO SEPTEMBER 2000 DRAFT ANNUAL
GROUNDWATER SAMPLING REPORT , HUNTERS POINT SHIPYARD,
SAN FRANCISCO, CALIFORNIA

Dear Mr. Mach:

Attached please find our comments for the above-mentioned document.

If you have any questions, Please contact me at (510) 540-3822.

Sincerely,

Chein Ping Kao, P.E.
Senior Hazardous Substance Engineer
Office of Military Facilities

Enclosure

CC: Ms. Sheryl Lauth
US EPA Region IX
75 Hawthorne Street
San Francisco, California 94105-3901

(contine next page)

Mr. Brad Job
California Regional Water Quality Control Board

San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, California 94612

Ms. Amy Brownell
c/o John Chester
San Francisco Public Utilities Commission
1155 Market Street, 4th Floor,
San Francisco, Ca 94103

**MEMORANDUM**

TO: Chein Kao
Remedial Project Manager
Office of Military Facilities

FROM: Michael Kenning, RG
Hazardous Substances Engineering Geologist
Geologic Services Unit

REVIEWED BY: Mark Vest, RG, CEG
Senior, Hazardous Substances Engineering Geologist
Geologic Services Unit

DATE: November 6, 2000

SUBJECT: REVIEW OF DRAFT SEPTEMBER 1999 TO SEPTEMBER 2000
ANNUAL GROUNDWATER SAMPLING REPORT FOR PARCEL B,
HUNTERS POINT SHIPYARD

Activity Requested

Geologic Services Unit (GSU) has reviewed the Draft September 1999 to September 2000 Annual Groundwater Sampling Report for Parcel B, Hunters Point Shipyard. The October 13, 2000 report was prepared by Tetra Tech EM Inc. for the Department of the Navy, Southwest Division Naval Facilities Engineering Command.

General Comments

The report summarizes four quarters of groundwater monitoring from selected monitoring wells in Parcel B. The report also serves as the fourth quarter groundwater monitoring report.

Seven of the eight Point of Compliance (POC) monitoring wells have exceeded the trigger levels of various metals during one or more of the reported quarterly monitoring events. Also the trigger levels for metals were also exceeded in three Remedial Action

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monitoring wells. These wells have the same exceedance criteria as the POC wells. Many of the increases occurred during the second quarter groundwater monitoring event which took place from January 7 - 11, 2000. The monitoring well sampling sheets indicate that bailers were used to both purge and sample the majority of the wells in the second quarter, resulting in a large increase in turbidity (several hundred nephelometric turbidity units (NTUs) over the first quarterly sampling event in which submersible pumps or peristaltic pumps were used to purge the wells and bailers were used for sampling. The turbidity measurements in the first quarter were generally less than 50 NTUs. In the third quarter, a "purging" pump was used in most of the wells (except for those wells which were "micro-purged" with a peristaltic pump) and the turbidity measurements were, for the most part, much lower. In the fourth quarter bailers were again used to purge and the turbidity increased again. These turbidity fluctuations can result in large differences in the concentration of metal cations in groundwater even with field filtration of the sample. The large variations in metal concentrations from quarter to quarter are liable to mask any naturally occurring seasonal variations and also make it very difficult to determine whether or not the causes are due to man-made sources. Therefore no conclusions can be drawn on the presence or absence of contamination of metals above background in groundwater.

GSU recommends that, at a minimum, bailers no longer be used for purging in any monitoring well. In addition, significant losses of volatile organic compounds (VOCs) can occur when bailers are used to sample groundwater. Also, degassing and a loss of volatiles can occur when using peristaltic pumps. For these reasons, GSU also recommends that dedicated bladder pumps be installed and used in the groundwater monitoring program at Parcel B.

Since the annual monitoring report contains interpretations of geologic data, each report must be signed by a geologist registered in the state of California who takes responsibility for the geologic content of the report. This is required by California state law, the Business and Professions Code, Geologists and Geophysicists Act. The report must indicate the license number of the geologist.

Specific Comments

1. Sentinel wells are only sampled semiannually. GSU recommends that at least four quarterly monitoring events should take place before a decision is made to reduce the sampling frequency to semiannual monitoring. This decision should be made based on criteria such as presence of contaminants, position of well with respect to plume or predicted movement of plume, etc. In particular, well IR10-MW28A is on a semiannual monitoring frequency, even though the well is contaminated with TCE

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and other CVOCs and a nearby well (IR10-MW33A) is sampled quarterly. The concentration in January 2000 was 40 ug/l of TCE.

2. Section 5, Year Two Recommendations, calls for the elimination of several sentinel wells from the RAMP. GSU recommends that no monitoring wells be removed at this time from the program due to the uncertainty caused by the use of various sampling devices describe above and also for the need for further tracking of any future contaminant transport and groundwater flow directions.
3. Fifteen wells were resurvey in August 2000. The changes in casing elevations were generally from 0.01 to 0.08 foot. However one well, IR07-MW20A1, had a difference of 0.39 foot. GSU recommends that the remaining RAMP wells be resurveyed, along with any other wells or piezometers that may be used in the future for sampling or to determine groundwater flow directions.
4. New groundwater contour maps based on the new survey elevations were included in Appendix E, however the contour intervals were one foot instead of one half foot in the quarterly reports. GSU recommends that one half foot contours be used in the updated contour maps to obtain a better sense of groundwater flow directions. Dashed lines should be used for areas of uncertainty.
5. Well hydrographs provide a visual indication on changing groundwater elevations throughout the seasons and can provide assistance in correlating groundwater elevations with groundwater concentrations of organics and inorganics. GSU recommends that hydrographs be included in the annual groundwater monitoring report. The X-axis (time) on the hydrographs should be prepared at the same scale as the X-axis in the time-concentration graphs provided the annual report.
6. Appendix A summarizes the results of the first year of groundwater monitoring. However, some wells are missing from the appendix. These are IR26-MW45A and IR46-NW37A. Also, two columns of results from 1990 and 1991 for well IR06-MW42A were copied on every page of Appendix A.
7. Groundwater flow directions in both the horizontal and vertical directions are important in characterizing groundwater movement. GSU recommends that depth to water measurements also be measured in B zone wells that are adjacent to A zone wells and that contour maps of the B zone be included in future groundwater monitoring reports.

If you have any questions, call me at (916) 255-3625.