



Gray Davis
Governor

Department of Toxic Substances Control

Edwin F. Lowry, Director
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Berkeley, California 94710-2721



Winston H. Hickox
Secretary for
Environmental
Protection

August 23, 1999

Commanding Officer
Engineering Field Activity, West
Naval Facilities Engineering Command
Attn: Mr. Ernesto Galang
900 Commodore Drive
San Bruno, CA 94066-2402

**DRAFT GROUNDWATER STATUS REPORT, SUMMARY OF
GROUNDWATER MONITORING FOR JANUARY TO NOVEMBER
1998, NAVAL STATION TREASURE ISLAND, SAN FRANCISCO,
CALIFORNIA**

Dear Mr. Galang:

The Department of Toxic Substances Control (DTSC) has reviewed the Draft Groundwater Status Report, Summary of Groundwater Monitoring from January to November 1998, for the former Naval Station Treasure Island (NSTI) dated May 7, 1999. Please find enclosed comments from Mr. Michael Kenning, Registered Geologist, of the Geological Services Unit of the Department of Toxic Substances Control.

If you have any questions regarding this letter, please contact me at
(510) 540-3763.

Sincerely,

A handwritten signature in black ink that reads "David Rist".

David Rist
Hazardous Substances Scientist
Office of Military Facilities

cc: See next page.

Mr. Ernesto Galang
August 23, 1999
Page 2

cc: Mr. David Leland
San Francisco Bay
California Regional Water Quality Control Board
2101 Webster Street, Suite 500
Oakland, California 94612

Mr. James Ricks Jr.(SFD-8-2)
U. S. Environmental Protection Agency, Region IX
75 Hawthorne Street
San Francisco, California 94105

Ms. Martha Walters
San Francisco Redevelopment Agency
770 Golden Gate Avenue
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Mr. James Sullivan
Caretaker Site Office
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} RAB



Department of Toxic Substances Control



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Gray Davis
Governor

William H. Hickox
Secretary for
Environmental
Protection

Memorandum

To: David Rist
Office of Military Facilities
Berkeley Regional Office
Date: August 11, 1999

From: Michael Kenning, RG, Hazardous Substances Engineering Geologist *MK*
Site Mitigation Branch, Geological Services Unit
(916) 255-3625 FAX (916) 255-3595

Checked by: Michael O. Finch, RG, Senior Hazardous Substances Engineering Geologist *MOF*
Site Mitigation Branch, Geological Services Unit

Subject: Review of the 1998 Groundwater Status Report for the former Naval Station Treasure Island.

Activity Requested

GSU has been requested to review and comment on the Draft *Groundwater Status Report, Summary of Groundwater Monitoring from January to November 1998, Naval Station Treasure Island, San Francisco, California*. The report was prepared by Tetra Tech EM, Inc. and issued on May 7, 1999. The report presents groundwater analytical data from samples collected in 1998 from nine sites on Treasure Island and Yerba Buena Island, as well as tabulated results from samples collected in previous years. Site-specific summaries are provided for each of the nine sites. A discussion of monitored natural attenuation is also included. The report summarizes the hydrogeology and sampling procedures used to obtain the groundwater data, the details of which are included in earlier reports that GSU has not reviewed.

Summary/General Comments

In general, the report is well organized and the tables are easy to find in each section. Groundwater contour maps appear to be accurate. In the following paragraphs, recommendations are made after some of the comments. Other comments seek a clarification or request that additional information be provided without stating recommendations.

GSU agrees that natural attenuation (NA) is taking place at Treasure Island. At some locations, such as the Fire Training School and Old Bunker Area/Hobby Shop, biodegradation is

occurring based on indicator parameters such as dissolved oxygen (DO) and oxidation-reduction potential (ORP). In other locations, the NA data are not as clear, although BTEX and TPH concentrations have decreased since the early to mid 1990s. One influence on the reported decrease of TPH-Extractables for Diesel and motor oil range organics is the use, beginning in 1998, of the silica gel cleanup method to remove polar organic compounds.

It is likely that other NA processes such as dispersion, volatilization, and sorption are also occurring. At the dry cleaning site (Site 24), the DO concentrations in some of the wells are generally too high for the anaerobic bacteria, the organisms that can break up chlorinated solvents, to survive (however see below). The report also states that two monitoring events are not long enough to establish trends; GSU agrees with this statement.

Some sites, such as the Fire Training School, there are wells (MW-01 and MW-11) that have shown little decrease in BTEX contamination over the last few years. Additional monitoring points may be required at this site to better establish the primary flow path, enabling a more precise location of the left and right plume edges, as well as the front edge of the plume. Then the decrease in concentrations with distance from the source can be more accurately determined.

A Grunfos® pump is being used with a MicroPurge® flow cell to take NA parameters (DO, conductivity, ORP, pH, temp) after purging three casing volumes. What is the rationale for using bailers to purge and sample the wells? It has been determined that losses of volatile organic compounds occur when using bailers. Also repeatedly lowering and raising the bailers during purging increases the turbidity (as indicated on several of the well sampling sheets), which can cause physical or chemical alteration of the sample.

Recommendation: Use a Grunfos® pump at low purging rates for purging. If there are concerns with decontamination of the pump, then consider dedicated pumps in the more polluted wells, that is wells that have a sheen or free product present.

Certain NA parameters such as dissolved oxygen, oxidation-reduction potential (ORP), pH, and conductivity are taken after purging and after sampling for the other parameters have been completed. The well sampling sheets show that dissolved oxygen is also being measured during well purging. In many wells, the dissolved oxygen measurements taken after sampling indicate increased oxygen concentrations over readings taken during purging. This is not surprising considering that aeration of the water column is probably occurring due to disturbance of the water in the wellbore during purging and sampling with a bailer. The post-sampling data has been tabulated in Appendix C, Summary of Indicator Parameters for Evaluation of Biodegradation Process - May and November 1998. GSU is concerned that these often higher dissolved oxygen readings do not reflect an accurate value for the in-situ oxygen concentrations in the groundwater and possibly for the other parameters as well. In demonstrating NA, it is necessary to use that proper and consistent sampling methods.

Recommendation: Take all NA parameters during purging using the MicroPurge® flow cell and compare these readings to the post-sampling measurements. Large differences may indicate that the field sampling plan should be changed so that accurate readings can be obtained that represent as closely as possible the in-situ values for those parameters. The pre and post-sampling values for dissolved oxygen for the 1998 sampling events should be averaged.

The Ambient Water Quality Criteria (AWQC) numbers shown in Appendix B, Analytical Results for Groundwater do not agree for some contaminants with the numbers published in Federal Register, Volume 63, December 10, 1998, which is listed in the References section of the report. The AWQC for benzene is listed as 700 ug/l in Appendix B, but the Federal Register for this date lists no numbers for benzene under the Fresh and Saltwater headings, but does under the heading of Human Health for Consumption of: "Organisms only" and "Water + organism". These values are 71 and 1.2 ug/l, respectively. The numbers used in the report need to be justified given the values in the Federal Register.

Specific Comments

Page 3-2, first bullet section. Please list the EPA test method employed for the various analysis methods in the first four bullets of volatile organic compounds (VOCs) and semivolatile organic compounds (SVOC).

Sections 5.2, 8.2, 12.2, What were the procedures used to abandon the monitoring wells and were the procedures reported to any regulatory agency?

Section 5.2, page 5-2. The last sentence of the paragraph states that well 06-MW3 has not been sampled because of floating product is not supported as Appendices B and C show that the well was sampled in November 1998.

Site 9 Foundry. According to the site background on page 6-1, a paint shop was located for several years in Building 41.

Recommendation: Analysis for lead, cadmium, and chromium should also be included as part of the filtered metals analysis in the one and only monitoring well for this site. Depending on whether soil around the paint shop has been tested and/or removed, it may be appropriate for placement of a monitoring well or possibly a hydropunch near the paint shop, closer to the shop than the hydropunch locations shown on Figure 6-1.