

**DEPARTMENT OF TOXIC SUBSTANCES CONTROL**

400 P STREET, 4<sup>TH</sup> FLOOR  
SACRAMENTO, CA 95814

N00217.003125  
HUNTERS POINT  
SSIC NO. 5090.3



June 19, 1995

Engineering Field Activity, West  
Attn Mr. David Song, Code 09ER1DS  
900 Commodore Drive  
San Bruno, California 94066-5006

**HUNTERS POINT ANNEX SUBSURFACE RADIATION INVESTIGATION IN  
PARCELS B AND E**

Dear Mr. Song:

The Department of Toxic Substances Control (Department) finds the above report difficult to read and follow the sequence of events. The Department believes that the Navy needs to focus more on undefined terms, sequence of events and the process. The following and the enclosed comments from the Department of Health Services are forwarded for your consideration.

1. Section 1.2.2, it is important to establish the background values in San Francisco before comparing the elevated readings at HPA.
2. Section 1.3.2, it is important to explain how you can estimate the number of sources of 2700 with any degree of certainty.
  - a. How do you know that Cesium-137 mixed with sandblast did not get into the Bay? It is important to note that the Navy has not investigated the area for radioactivity yet. We believe it is inaccurate to state that there are no "scientific proof".
3. Section 2, field operation needs to be expanded to be comprehensive. This section should contain information on the process and location of each investigation/trenching area.

Mr. David Song  
June 19, 1995  
Page Two

Should you have any questions regarding this letter, please call me at (510) 540-3821.

Sincerely,



Cyrus Shabahari  
Project Manager  
Office of Military facilities

Enclosure

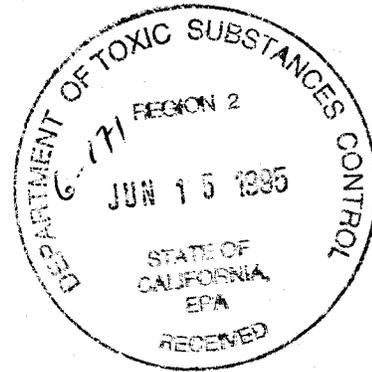
cc: US EPA  
Region IX  
Attn: Alydda Manglesdorf  
Mail Code H-9-2  
75 Hawthorne Street  
San Francisco, California 94105

Regional Water Quality Control Board  
Attn: Richard Hiett  
2101 Webster Street, Suite 500  
Oakland, California 94612

City and County of San Francisco  
Department of Public Health  
Attn: Amy Brownell  
101 Grove Street, Room 207  
San Francisco, California 94102

# Memorandum

Date : June 14, 1995  
To : Mr. Cyrus Shabahari  
Office of Military Facilities  
Department of Toxic Substances Control  
Region 2  
700 Heinz Avenue, Suite 200  
Berkeley, CA 94710



From : Environmental Management Branch  
601 North 7th Street (MS) 396  
(916) 322-2040

Subject : Comments on Results of Subsurface Radiation Investigation in Parcels B and E, Draft Report, ,  
**Hunters Point Annex** (DTSC/DHS Work Form #89)

Attached are the Department of Health Services' (DHS) comments on the above document. These comments are in support of the Interagency Agreement between the Department of Toxic Substances Control (DTSC) and DHS. The document was received on April 28, 1995, and was prepared by PRC Environmental Management Inc. in March 1995.

We have excluded Parcel B from comment as a letter dated April 24, 1995, concurred with the findings in the report "Naturally Occurring Radioactive Material in Soils at IR-07 and IR-18, Parcel B, Technical Memorandum, Hunters Point Annex."

The attached comments were prepared by Mr. Claude Goode, Associate Health Physicist. If you have any questions concerning these comments, or if you need additional information, please contact me at (916) 324-2206 or Mr. Goode at (916)- 445-4408.

*Terry Macaulay*  
Terry Macaulay  
DoD Program Coordinator  
Environmental Radiation Section

Attachments

cc: See next page

Mr. Cyrus Shabahari  
Page 2  
June 14, 1995

cc: Mr. Donn Diebert  
Office of Military Facilities  
Department of Toxic Substances Control  
Region 1  
10151 Croydon Way, Suite 3  
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Mr. John Adams  
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State Water Resources Control Board  
2014 T Street, Suite 130  
P.O. Box 944212  
Sacramento, California 94244-2120

Mr. Claude Goode  
Department of Health Services  
Environmental Management Branch  
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Mr. Richard Heitt  
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Department of Health Services Comments on  
Results of Subsurface Radiation Investigation in Parcels B and E, Draft Report  
**Hunters Point Annex**  
(DTSC/DHS Work Form #89)

### Background

The draft report was submitted as the second phase of a three phase environmental radiation investigation for subsurface radium-containing materials at Hunters Point Annex (HPA) to determine whether the radionuclide activity in parcel E will warrant remediation. The third phase will determine the extent and method of remediation to allow the parcel to be released for unrestricted use.

The draft report, as submitted, identifies the methods of sampling and results of the Phase III studies needed to identify the type and nature of radionuclides in the soil in Parcel E. The Department has not received an official request to release Parcel E for unrestricted use and no final Remediation Investigative report has been received at this time.

### General Comments

The sampling sites within Parcel E have been specifically identified as to the location at which test pits and downwell logging were done and where samples were obtained. Sampling techniques are considered to have been conducted within acceptable standards.

In accordance with US EPA Health Effects Assessment Summary (January 1992), the quantities indicated in soil sampling and point sources exceed the range of  $10^{-6}$  to  $10^{-5}$  lifetime cancer risk levels, as determined in picocuries/gram of soil, and may be considered as a cancer risk.

### Specific Comments:

1. Page ES-1: Paragraph three indicates subsurface gamma emitting point sources that include illuminators, ship instruments, and dials "with an approximate activity of one microcurie each". Are there documents or tests that support the quote? Are ship instruments and dials also limited to one microcurie?
2. Page 1; 1.1: Paragraph two indicates that "Health risks from point sources of radium-containing devices and the application of remedial alternatives will be addressed in the Parcel E Remedial Investigation report". This is inconsistent with comment (1) above, whereas a one microcurie activity will in effect exceed Category B, as defined by a Public Health Assessment by the U.S. Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry, (ATSDR) Public Health Hazard Conclusion. (This category is used for sites that pose a public health hazard as the result of long-term exposure to hazardous substances.) This is further indicated by soil samples in excess of cancer risk hazards of  $10^{-5}$  as established by the US Environmental Agency.
3. Page 2; 1.2.2: "Results indicate that concentrations of gross alpha and beta-emitting airborne particulates at HPA were similar to background levels normally found in the San Francisco Bay Area. What is the source of this information? How were they determined.

4. Page 3; 1.2.2: Paragraphs two and three reference a Surface Confirmation Radiation Survey (SCRS) from 1992, indicating that no mixed fission products are present in soils sampled at Installation Restoration (IR), IR-01 and IR-02. The soil sample results for Phase Two do not show tests for such products, which have been indicated as possibly having been dumped as sand blast waste.
5. Page 3; 1.3: Is the date accurate, as indicated? Is this a possible typographical error? Item 1.2.1 on page 5 indicates the land was privately held until 1939.
6. Page 5; 1.3.2 : There is no distinction between point sources in the form of deck markers and other forms of dials for instruments. Certain sources were produced as sealed sources prior to 1960 and others as exempt quantities. Later it was determined that many that were originally considered as sealed were not adequately sealed and radium could be released. The marker point sources apparently have leaked as indicated by soil samples. The possibility of over 2700 of these devices having been disposed of in this area is considered to present a potential hazard, in contrast to the summary statement "Exposure to radium-226 posed no apparent health risk" as stated in the Public Health Assessment prepared by the Agency for Toxic Substances and Disease Registry (ATSDR).
7. Page 17; 2.3.1: Point sources that were collected were not analyzed for activity or leakage. Only soil that exhibited diffuse gamma activity, was sampled for gamma spectroscopic analysis. The soil analysis results indicate elevated levels of Radium. Leakage from the point sources appears eminent. This needs to be identified by analysis of the point sources for leakage.
8. Page 17; 2.3.2: Normal background count rate in excavations varied from 5,000 to 10,000 CPM. The report states "This is typical of San Francisco Bay Area geology." If the general background gamma count rate range was determined "by gamma logging at a specific depth in the entire trench", and determined as 5,000 to 10,000 CPM, explain how this is determined as typical of the San Francisco Bay Area. The "general background gamma count rate" appears to identify both the normal background for the vicinity and for the inside of the trenches. What is normal background determined in adjacent areas?
9. Page 18; 2.4: "The phase II radiation investigation final field work plan listed specific wells to be gamma logged." The plan does not include well identification nor locations in figures 4 and 5, and there is no figure 6. This report contains no survey data of the downwell gamma logging at one foot intervals. These should be included.
10. Page 21; 2.8: Identification of the efficiency factor of the instrumentation is very beneficial for conversion from CPM to DPM.
11. Page 22; 3.0: There should be an additional table to identify the downwell gamma logging results at each increment.
12. Page 22; 3.1: The report states, "Consistent with expected background levels of approximately 7-12 microrentgen per hour ( $\mu\text{R/hr}$ ) at 3 feet above the ground surface." Why was this expected? Is this a normal background for the vicinity? How was it determined?
13. Page 25; 3.1.2: "Table 2 lists the number of devices identified and their gamma count rate within IR-02 excavations as a function of depth." Table 2 does not indicate count rates. They are, however, indicated in Table 1, but not as a function of depth. Please clarify.
14. Page 26; 3.2: Due to the elevated gamma count rate indicated in well 175A, we recommend

- additional monitoring by water sampling. Water samples should be analyzed to determine the amount of radium and or other types of potential radioactive elements present and the amount of activity in picocuries per liter.
15. Page 31; 4.2.1: The identification of point sources in the area approximately 400 feet long and 250 feet wide, shown in Appendix B-1, Overlay B, indicates that it will be necessary to address their total remediation in phase III.
  16. Page 31; 4.2.2: The assumption that no sources are located below one foot is now negated by these results. Will remediation now include the removal of all point sources in the affected area?
  17. Page 31; 4.2.2: The total estimated volume of soil that contains radioactive material is calculated to be 5,500 yd<sup>3</sup>, however, only the point sources are addressed. Radium contamination in soil, as indicated in the soil analysis in Appendix A, has not been addressed as a contaminant. The emphasis seems to be placed only on point sources and the soil contamination is only minimally addressed.
  18. Page 35; 5.0: The first recommendation implies that the data provides an adequate characterization of the type and subsurface extent of radium-containing material. This recommendation is appropriate, however, the volume of soil within the IR-02 landfill will, as opposed to "may", require remediation.
  19. Page 35; 5.0: Item 2 recommendation regarding IR-07 and IR-18 has previously been addressed.
  20. California Radiation Control Law, Title 17, Subchapter 4, specifies that radioactive materials must be licensed. Point sources such as those that are present at HPA would require that the City /County of San Francisco (if it becomes the owner of the property) obtain a Radioactive Material License from Department of Health Services once the Department of Navy has released the property. The owner of the property would become responsible for any remediation of radioactive materials there after.

Comments prepared by:

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